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from: Mr Vítor CALDEIRA, President of the Court of Auditors  
date of receipt: 13 December 2010  
to: Mr Steven VANACKERE, President of the Council of the European Union

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Subject: Special Report No. 9/2010: Is EU Structural Measures spending on the supply of water for domestic consumption used to best effect?

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Sir,

I enclose a copy of special report No. 9/2010 "Is EU Structural Measures spending on the supply of water for domestic consumption used to best effect?" together with the Commission's replies.

The special report, which is shortly to be published, was adopted by the Court at its meeting on 8 September 2010 and is accompanied by the replies from the Commission, which was notified of the preliminary findings on 26 May 2010.

(Complimentary close).

(s.) Vítor CALDEIRA

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Encl.: Special Report No. 9/2010: Is EU Structural Measures spending on the supply of water for domestic consumption used to best effect?<sup>1</sup>

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<sup>1</sup> In English only. The other languages of this report are available on the European Court of Auditor's website: <http://eca.europa.eu/>.

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ΕΥΡΩΠΑΪΚΟ ΕΛΕΓΚΤΙΚΟ ΣΥΝΕΔΡΙΟ  
EUROPEAN COURT OF AUDITORS  
COUR DES COMPTES EUROPÉENNE  
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## Special Report No 9/2010

(pursuant to Article 287(4), second subparagraph, TFEU)

Is EU Structural Measures spending on **the supply of water** for domestic consumption  
used to best effect?

together with the Commission's replies

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**GLOSSARY**

Bulk water supply system	All infrastructure enabling the provision of water in municipal/local tanks, including water abstraction, production, the long-distance transfer of raw water, treatment and transport up to the tanks. Water is then provided to users through the distribution network.
Cohesion Fund (CF)	Financial instrument designed to strengthen economic and social cohesion by financing environment and transport projects in Member States with a per capita GNP of less than 90 % of the EU average.
Cost-benefit analysis (CBA)	A technique for comparing all the costs and all the benefits of an intervention to determine whether the benefits outweigh the costs, and if so, by what proportion.
Cost-recovery principle	<p>A principle requiring that the costs of a specific good or service are covered by the revenues.</p> <p>In the field of water, Member States are required to adopt water pricing policies which take account of the recovery of all costs in order to provide incentives to use water resources efficiently (see Article 9 of Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1).</p>
Distribution network	All activities and infrastructures enabling the distribution of water to domestic and other users from municipal or local tanks.
Effectiveness	Measurement of the relationship between objectives set and results achieved.
Efficiency	Measurement of the relationship between the resources employed and the results achieved. In the present report, the relationship between investment cost and, for example, the increase in water volumes supplied or the improvement in the quality of the water.
European Regional Development Fund (ERDF)	Financial instrument designed to promote economic and social cohesion between the regions of the EU. ERDF interventions are mainly implemented through operational programmes involving a large number of projects.
Hm <sup>3</sup>	Hectocubic metre, equals 1 million m <sup>3</sup> .

Horizon year	A year in the future for which the estimated demand is used as a basis for planning water supply investment.
Non-invoiced water	Difference between the volume of water abstracted and the invoiced consumption, also known as unaccounted-for water. It includes leakages, illegal consumption, inaccuracies in measurement and free use of water services. While leakages can only be estimated, non-invoiced water is a measurable parameter for which data are available in almost all the water supply systems. In this report, it is used as an indicator of the water system networks yield.
Operational programme (OP)	A document approved by the Commission which takes the form of a coherent set of priorities comprising multi-annual measures.
Per capita consumption	At the level of an area, a municipality or a region, the volume of water, in litres per day and per person, necessary for ordinary domestic and industrial activities. Hydrological planning documents establish values of per capita consumption on the basis of local residential characteristics and industrial development.
Programme period	The multi-annual framework within which Structural Fund and Cohesion Fund expenditure is planned and implemented.
Social affordability	Principle requiring that the population's capacity to pay for water is taken into account when setting water prices intended to cover the costs of the services. It can be measured by the ratio of households' water expenditure to their disposable income.
Structural Measures	In this report, interventions by the European Regional Development Fund and by the Cohesion Fund.
Water channel	Open or closed water ways in concrete or other materials. In this report the term is used only for water ways conveying water for mixed use, irrigation and domestic water supply.
Water main	Pipes of different diameter and material used for the transport of water within a bulk water supply system.
Water reservoir	Artificial lake created by building a dam in a river or stream.
Water tank	Container in concrete or other material used to store water.

Water tariffs (charges)	Price of water charged by service providers to users. Water tariffs vary for different users: households, industry and agriculture. Water tariffs are usually charged together with wastewater tariffs.
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## **EXECUTIVE SUMMARY**

I. Water is one of the most important resources for social and economic development. Water supply for domestic consumption is essential for human health and wellbeing.

II. Investments in water supply address different needs, such as: increasing availability of water in response to increased demand; expanding geographical coverage; improving the quality of the water distributed; improving the efficiency of water supply systems and the quality of the service.

III. The Court's audit focused on the infrastructures exclusively dedicated to domestic water supply co-financed by the Cohesion Fund and the ERDF and completed during the 2000-2006 programme period in Spain, Greece, Portugal and Italy, which are the major recipients of funding in this area. The audit findings are based on a direct review of 29 projects - 11 approved by the Commission and 18 approved by the Managing Authorities in the Member States - and on an examination of the Commission and Member States' systems for managing and monitoring EU funds.

IV. The main objective of the audit was to assess whether EU spending on water supply is used to best effect, by addressing whether:

- the most appropriate solutions were adopted to meet the needs of the areas concerned;
- the co-financed projects were successful in improving the water supply;
- the objectives have been achieved at the lowest cost to the EU budget.

V. The Court found that, whilst Structural Measures spending has contributed to improving the supply of water for domestic use, better results could have been achieved at a lower cost. In particular:

- forecasts of future water needs did not take into account downward trends in water demand nor all resources already available; moreover, focus was placed on exploiting new sources without considering alternative solutions, such as reducing water losses and using other nearby resources; limited value was added by the Commission and the Member States' Managing Authorities' appraisal;
- measurable improvements have been achieved in terms of increased available volume of water, extended coverage of public network, better water quality, higher network yield and service continuity; however, some projects were not operational because of missing complementary infrastructure; monitoring of achievements was of variable quality; where conditions were imposed in grant decisions, attention was not always paid to whether those conditions had been complied with;
- all projects have experienced cost increases and delays; when measured by the two main efficiency parameters (capacity utilisation rate and non-invoiced water), several projects were found to operate with limited efficiency; significant weaknesses were observed in the process for setting grants and insufficient consideration was paid by the Commission and the Member States' Managing Authorities to the ability of the projects to generate revenues.

VI. The Court recommends that:

- Member States should improve their ex ante analysis and forecast of future needs by taking into account recent and accurate data and improve their inventory of all available water resources; pay greater attention to alternatives to supply side solutions (such as measures towards reducing water losses) and to measures for the protection of water quality;
- The Commission should encourage Member States to implement efficient water resource management and take its effects into account when planning co-financed water supply infrastructure;

- Member States should ensure, from the planning stage, that complementary infrastructure necessary for the entry into operation of the projects, will be available on time; better monitoring tools for achievements and conditions should be put in place;
- Member States should pay more attention, during the planning phase, to factors that often create delays; results of better ex ante analyses should be taken into account in the design of new infrastructure;
- The Commission and the Member States should improve the quality of the CBAs and financing gap estimates and give due consideration to the ability of the projects to generate revenues.

## **INTRODUCTION**

### ***Water supply in the EU***

1. Water is essential for human health and one of the most important natural resources needed for social and economic development. The distribution of sufficient good quality water for domestic consumption is an important prerequisite for development.

2. In the EU, there are significant variations among Member States and between regions within the same State in the proportion of population covered by a public water supply system and the per capita consumption of water. There are also significant differences in the efficiency of water networks, the price of water and share of water expenditure in total household income (see **Table 1**).

**Table 1 - Main characteristics of the water supply for domestic use in the EU - average values at Member State level\***

	Minimum	Maximum
Population coverage (% of total population)	70	100
Per capita consumption (litres/inhabitant/day)	70	270
Non-invoiced water (% of total water abstracted)	7	55
Water price (euro/m <sup>3</sup> )	0	2,1
Share of the expenditure for water supply in total household income (%)	0	2,5

\* The information has been collected from different sources: EUREAU, Eurostat, OECD, International Benchmarking Network for water and Sanitation Utilities and European Commission (DG Regional Policy).

3. According to the Treaties, the prudent and rational use of natural resources is one of the objectives of the environmental policy. The key legal instrument for water is the Water Framework Directive, which aims to ensure the protection of water and its sustainable use. The Directive entered into force in 2000, and had to be transposed by December 2003. It established classification systems for water quality and required a monitoring network by 2006, the publication of river basin management plans in 2009 and, in principle, the attainment of environmental objectives by 2015. It also required Member States to adopt water-pricing policies providing incentives to efficient water use, with an adequate contribution to this goal from different categories of water user (cost recovery principle). This obligation is due by 2010<sup>2</sup>.

4. In addition, a Council Directive on Drinking Water Quality is designed to protect human health, in particular by setting maximum values for certain microbiological, chemical and organoleptic parameters<sup>3</sup>.

### ***EU Structural Measures co-financing of water supply infrastructure***

5. Investments in water supply systems are made as a result of one or more specific needs. These are the need to:

- (a) increase availability of water, either because of population increases or economic growth;
- (b) expand geographical coverage to sectors of the population which were excluded from public water services;

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<sup>2</sup> Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy (OJ L 327, 22.12.2000, p. 1). Article 9 concerns the recovery of costs for water services. This framework directive was adopted when specific directives had already been adopted, as for example the Drinking Water Quality Directive.

<sup>3</sup> Council Directive 98/83/EC of 3 November 1998 on the quality of water intended for human consumption (OJ L 330, 5.12.1998, p. 32). This Directive replaces Council Directive 80/778/EEC.

- (c) improve the quality of the water distributed, either by developing new water resources or by treating water from available sources, when for example existing sources have been contaminated by industry or agriculture;
- (d) improve the efficiency of water supply systems to address water losses or the obsolescence of equipment;
- (e) improve service quality by reducing the number and duration of restrictions and interruptions.

6. The construction costs of water supply systems are eligible for assistance, under the Cohesion Policy, from the European Regional Development Fund (ERDF) and the Cohesion Fund (CF). This support may vary from 25 % up to 85 % of the eligible expenditure<sup>4</sup>.

7. In the 2000-2006 programme period, EU financial support for projects dedicated exclusively to domestic water supply and co-financed by these Funds totalled 4,05 billion euro<sup>5</sup>, with four Member States accounting for 3,62 billion euro or 89,4 % of the total: Spain, Greece, Portugal and Italy. Expenditure in this field is likely to remain significant in the 2007-2013 programme period: it is estimated that the 15 Member States eligible for CF support still need to invest around 25 billion euro in water supply<sup>6</sup>.

8. Co-financed projects are implemented under shared management between the Commission and the Member States, the Commission bearing the ultimate

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<sup>4</sup> For more information, see Article 29 of Council Regulation (EC) No 1260/1999 of 21 June 1999 laying down general provisions on the Structural Funds (OJ L 161, 26.6.1999, p. 1) and Article 7 of Council Regulation (EC) No 1164/94 of 16 May 1994 establishing a Cohesion Fund (OJ L 130, 25.5.1994, p. 1), as amended by Regulation (EC) No 1265/1999 (OJ L 161, 26.6.1999, p. 62).

<sup>5</sup> Amounts estimated by the Court. In addition, the EU has granted significant financial support to water supply projects which also include sanitation.

<sup>6</sup> Strategic Evaluation on Environment and Risk prevention under Structural and Cohesion Funds for the period 2007-2013, Synthesis Report, 7.11.2006, p. 19. The report was commissioned by DG Regional Policy.

responsibility for the implementation of the budget<sup>7</sup>. Their roles depend on the Fund providing the financial support and on the level of the cost of the project:

- (a) for CF projects and ERDF major projects<sup>8</sup>, the Commission examines the quality of the projects to be co-financed in terms of their compliance with applicable European directives and the priorities of the Funds, their potential to achieve results with regard to regional development and their need for a EU financial contribution. The Commission's decision to co-finance a project establishes the grant level and the conditions to which its payment is subject. In the case of CF projects, a final report, including a description of the work carried out and an initial assessment of the achievement of the anticipated results, has to be produced for the Commission<sup>9</sup>. In the case of ERDF major projects, specific final reports are not required;
- (b) for the other ERDF projects, the Commission's role is limited to assessing and approving the operational programmes to which the projects belong and to whose general objectives they should contribute; the Member States' Managing Authorities are responsible for evaluating grant applications, deciding on the amount of the grant and following up the implementation of the projects.

9. For each programme period, the Commission issues guidelines for the implementation of the Funds. For the 2000-2006 period, the guidelines issued

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<sup>7</sup> Article 274 of the Treaty establishing the European Community (ex Article 205).

<sup>8</sup> In the 2000-2006 programme period, "major projects" were those "whose total cost taken into account in determining the contribution of the Funds exceeds 50 million euro" (see Article 25 of Council Regulation (EC) No 1260/1999 of 21 June 1999). For more information on the subject, see the Court's Special Report No 1/2008 concerning the procedures for the preliminary examination and evaluation of major investment projects for the 1994-1999 and 2000-2006 programme periods.

<sup>9</sup> Article F(4) of Annex II of Regulation (EC) No 1164/94 as amended by Regulation (EC) No 1265/1999.

in 1999 make it a priority to support compliance with the environmental standards established in the relevant EU Directives. They specify that projects in the water sector “should be consistent with the principles of the proposed Water Framework Directive” and that “there should be more emphasis on increasing the efficiency of existing infrastructure with a view to limiting losses”<sup>10</sup>. In addition, the Guide to the Cohesion Fund indicates that “all the investments in water supply should be accompanied by a concrete action plan to limit water losses from the distribution system to an optimal percentage for the efficiency of the system”<sup>11</sup>.

10. Co-financed infrastructures are of various types. The “Water supply systems” scheme in ***Annex I*** gives a description of the components of the water systems, from abstraction (bulk water supply systems) to distribution to end users (distribution networks), and ***Box 1*** gives some examples of co-financed projects. The most common elements of the water supply systems are: dams, desalination plants, water treatment plants, water mains, pumping stations, reservoirs, water tanks, distribution networks and remote control and detection systems for leaks and breakdowns.

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<sup>10</sup> The Structural Funds and their coordination with the Cohesion Fund-Guidelines for programmes in the period 2000-2006. Communication of the Commission (OJ C 267 of 22.9.1999, p. 2). Quoted in page 6.

<sup>11</sup> Guide to the Cohesion Fund 2000-2006, Annex A, EC, version 1.0, February 2000, pp. 9-10.

**Box 1 - Examples of projects co-financed by the EU**

One project aimed to extend the public water supply network to the population of rural districts which were using private and dispersed sources. The project consisted of 11 water tanks, 32,6 km of pipes for the connection of the new network to the bulk water supply system, 10 pumping-stations and about 87 km of pipes for the new distribution network. The cost of the project eligible for EU assistance was 4,28 million euro, with 3,21 million euro of ERDF co-financing.

A series of projects was designed to create new water sources and to improve the water treatment in a bulk water supply system covering an area of 11 000 km<sup>2</sup> and 2,5 million inhabitants. It consists of various co-financed projects: a desalination plant with a capacity for 65 000 m<sup>3</sup> of water per day at an eligible cost of 55,10 million euro, with 46,86 million euro of CF co-financing; the renewal of a treatment plant with a capacity of 116 640 m<sup>3</sup>/day at an eligible cost of 5,38 million euro, with 3,50 million euro of ERDF co-financing; and the construction of a water main of 27 km and three associated water tanks connecting the bulk water supply system with another desalination plant at an eligible cost of 19,71 million euro, with 12,81 million euro of ERDF co-financing.

<b>Some projects co-financed by the EU</b>	
	
Picture 1: Pumping station in Portugal	Picture 2: Desalination plant in Spain
	
Picture 3: Dam in Spain	Picture 4: Treatment plant in Greece

### **AUDIT SCOPE AND OBJECTIVES**

11. The main objective of the audit was to assess whether EU Structural Measures spending on the supply of water for domestic consumption is used to best effect.

12. The Court addressed the following sub-questions:

- (a) Were the most appropriate solutions adopted to meet the needs of the areas concerned?

- (b) Have the projects achieved their aims of improving the supply of water for domestic consumption?
- (c) Have the objectives been achieved at the lowest cost to the EU budget?

13. The audit was carried out at the Commission and in the four Member States which account for most of the expenditure on infrastructure exclusively dedicated to water supply for domestic use: Spain, Greece, Portugal and Italy.

14. It was conducted from February 2009 to March 2010, on the basis of a sample of 29 projects financed under the 2000-2006 programme period and physically completed. Three of them were approved by the Commission before 2000, but all three were substantially modified by Commission's decisions during the 2000-2006 period. The projects were selected in proportion to the size of the total financial support provided to each of the four Member States. Nine were co-financed by the CF and 20 by the ERDF, two of which were major projects (see ***Annex II***).

15. Project files were reviewed at all levels and meetings were held with representatives of various local authorities and public or mixed companies responsible for the design, implementation and management of the infrastructures related to the selected projects. The Court was assisted by experts in water supply engineering.

## **OBSERVATIONS**

### ***Were the most appropriate solutions adopted in order to meet the needs of the areas concerned?***

16. The commitment of financial resources to the building of new infrastructure, which is often expected to be used for several decades, should be preceded by an analysis aiming at finding the best solution to local water supply needs. The main elements of such an analysis are the demand forecast, calculated mainly from the size of the population and the expected per capita consumption, and the availability and quality of existing water resources. Some of these elements,

such as per capita consumption and the quality of existing water resources, may be influenced by demand side measures and actions for water resource protection respectively.

17. The Court examined whether:

- (a) the estimates of water needs underpinning co-financed infrastructure projects were based on well-founded assumptions about the evolution of demand and water availability in the area concerned;
- (b) various potential solutions, including action to affect demand or to maintain or improve the quality of the water resources currently used, had been adequately analysed in order to select the best one;
- (c) the authorities in charge of assessing applications and approving grants have added value to the projects proposed.

**In almost all cases, forecasts of needs did not take into account downward trends in per capita water consumption, and in some cases, not all resources already available were considered**

18. The decision to build new infrastructure for water supply was, in all but three projects, based on estimates of future demand and of the need for supplementary water resources. In the three exceptions, no such estimates were necessary as the investment consisted merely in adding or replacing an element in an existing system.

19. In 21 cases, demand was estimated on the basis of theoretical per capita consumption recommended by hydrological planning documents, given the lack of data on consumption and losses from the networks in the past. The demand estimated in this way was sometimes adjusted upwards using various factors

that are difficult to evaluate, such as the effect of temporary populations<sup>12</sup> and industrialisation rate.

20. In the other five cases, water demand forecasts were estimated on the basis of data about real past consumption, but applying different methods. In three of these cases, the per capita consumption used to justify the need for the project is higher than the one recommended by hydrological planning documents.

21. Moreover, in almost all the projects, the demand estimates do not reflect the downward trend in per capita consumption and, sometimes, in water losses that has taken place since the end of the 1990s or early 2000s in most of the areas concerned by the projects<sup>13</sup>. This trend is a result of improvements in the networks<sup>14</sup>, the installation of domestic meters and awareness campaigns promoted by water authorities and operators. As the implementation of such demand side measures is becoming more widespread, an increasing trend of per capita consumption is unlikely<sup>15</sup>.

22. As a result, a comparison between forecasts of future demand and actual consumption very often shows that (see **Table 2** for some examples):

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<sup>12</sup> Temporary (transient) population refers to tourists, commuting and seasonal workers, i.e. all non-resident persons.

<sup>13</sup> For example, in four big cities, the downward trend in per capita consumption is so sharp that, despite population increase, the overall water consumption has decreased between 1 % and 29 % since the end of 1990s. In a densely populated coastal area, the same trend has been observed since the early 2000s. Eight projects examined are located in these areas.

<sup>14</sup> Improvements in the networks result in reduced losses. Losses are considered as being part of the demand as they need to be covered by the total water production.

<sup>15</sup> See also Communication from the Commission "Addressing the challenge of water scarcity and droughts in the European Union", COM(2007) 414 final and final Report from the Commission to the Council and the European Parliament on the "follow-up to the Communication on water scarcity and droughts in the European Union", COM(2008) 875.

- (a) actual per capita consumption in 2008<sup>16</sup> is significantly lower than the estimate for the horizon year, and in several cases, it is even less than half of this estimate;
- (b) actual overall consumption in 2008 is much lower than estimated.

**Table 2 - Water consumption estimates and actual values in 2008 for some projects examined**

Project		Per capita consumption in l/inhabitants/day		Overall consumption in hm <sup>3</sup> / year		
Country	Horizon year	Estimated ex-ante for the horizon year <sup>1</sup>	Actual in 2008 <sup>1</sup>	Estimated ex-ante		Actual
				For the horizon year	For 2008 <sup>2</sup>	In 2008
ES	2027	530	286	26	24	14
GR	2020	375-609	197	219	180	90
IT	2040	432	360	178	149	90
PT	2030	154-300	34-66	25	15	6
PT	2038	150	74	0,6	0,4	0,1
ES	2030	350	201 - 291	8,5	no data	4,3

Note: <sup>1</sup> Per capita consumption includes peaks, losses and industrial coefficient.  
<sup>2</sup> The overall consumption estimates for 2008 were indicated in the project studies or calculated by the Court on the basis of population and per capita consumption trends shown in these studies.

23. Resources already available were not fully taken into account in the design of new infrastructure in six cases (see **Box 2**). In particular, where water was of poor quality, for example, because of high nitrates or sulphates content, it was not examined whether this water could have been mixed with water of good quality in order to meet the regulatory standards for drinking water, instead of being fully replaced by water from another source<sup>17</sup>.

<sup>16</sup> The most recent data available at the time of the audit.

<sup>17</sup> Directive 98/83/EC sets parametric values for such substances as sulphate and nitrate salts in water intended for human consumption. When the salt concentration exceeds these values, it is common practice to dilute the water with other (available) water from low salinity sources.

**Box 2 - Examples of projects where available resources were ignored in the planning phase**

In Spain, the ERDF co-financed a project to improve the quality of water supplied to various neighbouring municipalities, as current water supply did not comply with regulatory parameters. The estimates of water volume to be provided by the new infrastructures were based upon the estimate of total future demand for the area. Nevertheless, some of the municipalities had water of excellent quality and experienced no shortages. Furthermore, the project could have been based on the estimate of the volume of good quality water required to achieve the appropriate mix with the low quality water already available. Four years after commissioning, the rate of use of the new capacity is around 16 %.

In another case co-financed by the CF in Spain, a dam was built to cover a future demand estimated at 13,9 hm<sup>3</sup>/year, without considering the resources that were already available (8 hm<sup>3</sup>/year). At the time of the audit, this dam was not necessary to cover the current demand of the area (8 hm<sup>3</sup>/year) as available resources were already sufficient. The co-financed infrastructure will be used as a reserve or for other areas and not as initially planned.

24. A better estimation of future demand and water deficits could have made it possible to consider alternative solutions which were not taken into account and build smaller capacity infrastructure.

**The focus is on building infrastructures to exploit new water sources and attention is rarely paid to other solutions, such as reducing water losses, ...**

25. In all the cases examined by the Court, the solution selected to tackle the estimated water deficit was to exploit new water sources and transport the water to the areas concerned<sup>18</sup>.

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<sup>18</sup> Moreover, it should be stressed that the transport of water over a distance higher than 100 km is very costly. Besides the high investment cost, the operating cost

26. Where the level of non-invoiced water was high, the possibility of improving the distribution networks was rarely considered as a means of reducing future water needs, thereby excluding potential smaller capacity solutions (see **Box 3**).

**Box 3 - Potential impact of reducing non-invoiced water on water needs**

The increase in the volume of water made available to an Italian city, which was one of the objectives of a co-financed project, could have been achieved by reducing non-invoiced water in the city water network from 44,5 % to 11,5 %, which is an achievable rate already reached in some sectors of that city.

For a bulk water supply infrastructure in Greece, the design of the project was based on future demand estimates, including a high water loss rate (30 %). Despite some investment to improve the distribution network, also co-financed with EU funds, the loss rate remains around 30 %. Effective action to reduce water losses would have resulted in the need for a smaller new water supply infrastructure.

27. In two cases however, municipalities have taken action to reduce demand. In these cases, the results have been so significant that the co-financed infrastructure has become unnecessary in the short term or is oversized (see **Box 4**).

**Box 4 - Examples of beneficiary municipalities having taken action to reduce water losses**

The CF co-financed the construction of a dam so as to provide 34 hm<sup>3</sup>/year of water to a Spanish city and its surrounding area. This dam was justified on the basis of an estimated demand of 158 hm<sup>3</sup>/year by 2012. At the same time the city drew up an action plan including the installation of individual meters in apartments and the improvement of the transport and distribution network. This was also a condition imposed by the Commission when it approved the grant in 2000. The action plan achieved better results than those required by the Commission: non-invoiced water is

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represents up to 50 % of the total cost of the water supply (A. Gee, EC Competition newsletter No 2, summer 2004).

currently around 20 % compared to 36 % beforehand. Furthermore, despite a significant increase in population, overall demand has decreased from 142 hm<sup>3</sup> in 1997-1998, when the project was approved, to about 120 hm<sup>3</sup> in 2008.

For another Spanish city, the CF co-financed a bulk water supply system. The project estimated the city's future demand at 113 hm<sup>3</sup>. The Commission, in its co-financing decision of 2001, imposed the implementation of a plan to reduce leakage, which resulted in a reduction in non-invoiced water from 50 % to 30 %. Though the population has increased, overall demand has decreased from 81 hm<sup>3</sup> in 1996 to 61 hm<sup>3</sup> in 2008.

### **... or using more accessible resources**

28. There can be competing demands on water resources between, for example, the needs of agriculture and domestic consumption. The possibility of using water resources reserved for agricultural use for human consumption, has not been explored for the projects examined (see **Box 5**). Nonetheless, good practices have been noted in some Spanish regions, where a flexible exchange system regarding water usage rights is in place, so that water intended for irrigation can be used to supply water for domestic consumption when needed.

#### **Box 5 - The use of nearby water resources**

In the areas corresponding to two co-financed projects in Spain, several municipalities were distributing water with a nitrate content significantly higher than the maximum set by the Drinking Water Quality Directive, due to contamination from agriculture. The possibility of using nearby good quality surface water for domestic consumption, instead of poor quality water, was not considered by the project promoter because the usage rights of this good quality water had been granted to farmers. For each project, underground water wells and transport pipes of about 50 km in length were built. However, for one of these projects, the authorities in charge of water management had not yet granted an abstraction permit and requested the local authorities to look for a solution to make it possible to use surface water reserved for farmers. This would however require additional infrastructure to be constructed.

**Limited value was added by the grant applications' appraisal by the Commission and the Member States' Managing Authorities**

29. The audit sample includes 9 CF projects and 2 ERDF major projects which were examined and approved by the Commission. The other 18 projects were co-financed by the ERDF and were approved by the Member States' managing authorities (see paragraph 8).

30. As already found in other Court reports<sup>19</sup>, the absence of guidance and checklists for assessing the grant applications in the 2000-2006 programme period meant that it was not possible to identify the checks carried out by the Commission.

31. In no cases did the Commission question the forecasts of future demand or the solutions chosen; nor did it ask for information about other potential solutions, such as accessing or treating water available nearby rather than extracting it from further away.

32. Following its review, the Commission imposed conditions on four projects, relating to the reduction of water losses. However, in one case the Commission did not quantify the objectives concerned; in another case, the deadlines for meeting them were set for after the completion date of the project, by which time the balance of the grant would have been paid. In no case was the effect of the required reduction in water losses taken into account in the calculation of water needs.

33. In two of these projects, the grant decision also included a provision to the effect that the authorities had to monitor the application of the Directives on the

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<sup>19</sup> See in particular paragraph 41 of Special Report No°3/2009 concerning the effectiveness of Structural Measures spending on waste water treatment for the 1994-1999 and 2000-2006 programme periods.

protection of surface and underground waters<sup>20</sup> and inform the CF Monitoring Committee. These provisions had the merit of creating a specific link between the payment of the grant and the required action. However, contamination by nitrates or waste water also affected other projects, which were designed partly to replace the contaminated sources and which were approved by the Commission without any condition. Further measures aiming at speeding up environmental recovery were never imposed as conditions for the EU grant.

34. In the Member States, the Court's review found that, in no case did Managing Authorities suggest or make changes to the project proposals. Conditions about water losses and savings, as well as measures to protect the quality of raw water, were never imposed.

35. For the 2007-2013 period, the way water supply projects are managed has changed:

- (a) at the Commission, only projects whose total cost exceeds 50 million euro are examined. New assessment procedures have been designed: project applications have to include the results of feasibility studies, including the examination of alternatives; a checklist has been developed in order to assess project applications, in particular regarding the efficiency of water resource management (e.g. actions to reduce consumption or reuse waste water) in the areas concerned by the projects. However, the use of assessment criteria could improve the effectiveness of these procedures and the consistency of their results;
- (b) as regards the Member States visited, some positive initiatives have been taken: in three regions, one of the criteria for allocating ERDF assistance is that the proposed project should be part of a strategic plan for the area concerned and that it should be complementary to bulk water systems

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<sup>20</sup> Council Directive 91/676/ECC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates and Council Directive 91/271/EEC of 21 May 1991 concerning urban waste water treatment.

already built or planned. In Italy, the new procedures provide for increasing the budgets of regional operational programmes achieving better results in terms of water loss reduction.

***Have the projects achieved their aims of improving the supply of water for domestic consumption?***

36. There can be many reasons for building new infrastructure (see paragraph 5) and project objectives can therefore vary significantly. To enable effective monitoring and evaluation, project objectives should be defined and quantified in grant applications and financing decisions, in terms of outputs and results.

37. A range of indicators can be used to assess the extent to which objectives have been achieved. While output indicators should be defined in terms of physical achievements, such as kilometres of pipeline, number of tanks, etc., result indicators should be defined in order to reflect the extent to which the specific needs addressed by the project have been met:

- (a) availability: the additional volume of water entering the supply system due to the new infrastructure;
- (b) coverage: the increase in the number of people and percentage of the population supplied by the water distribution network;
- (c) water quality: the percentage of tests where water was assessed as non-compliant with EU, national or local standards and the improvement of the values for the parameters which were previously non-compliant;
- (d) efficiency of the systems: the reduction of non-invoiced water;
- (e) service quality: the reduction in the number and duration of restrictions and interruptions to the service.

38. The Court examined whether:

- (a) objectives had been defined and quantified;
- (b) objectives had been achieved;
- (c) achievements had been monitored by the authorities which approved the grants.

**Project objectives were not always quantified with regard to expected results**

39. Grant applications and decisions included measurable outputs to be achieved. For some projects examined, due to the absence of specific applications and decisions, outputs were set out and quantified in project studies.

40. Most of the projects examined included overall measurable objectives established in terms of population to be covered and volume of water to be supplied. However, not all expected results (such as reducing the quantity of non-invoiced water and improving service continuity and water quality), were quantified.

**Projects achieved measurable improvements in the water supply to EU citizens, but ...**

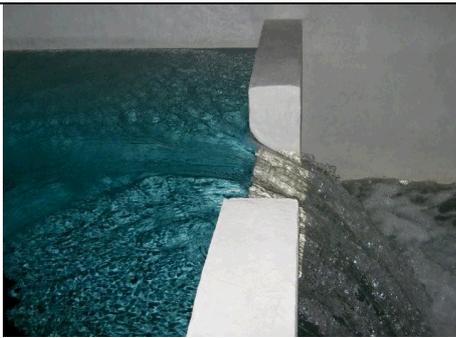
41. All projects audited, despite delays and cost overruns (see paragraphs 51 to 52), were physically implemented as planned, with minor variations in, for example, the length of the pipelines or the capacity or location of the tanks, agreed during construction.

42. In terms of results, projects have contributed to improving the supply of water for domestic use, either by increasing the available volume of water, extending the public network to areas which were previously not connected or improving water quality, network efficiency or service continuity (see **Box 6**).

### Box 6 - Examples of positive achievements

In order to cover the water deficit of a Spanish area, the CF co-financed a desalination plant with a production capacity of 22 hm<sup>3</sup> of drinking water per year. Since 2006, the plant has been operating at around 90 % of its capacity, alleviating the water deficit of the three largest municipalities supplied. Compared to the previous situation, significant improvement has also been achieved in the quality of the water distributed to the population in terms of some of the standards of the EU Directive (conductivity and content in trihalomethanes and sulphates).

In order to satisfy the needs of an urban area in Italy suffering from water scarcity, the ERDF co-financed a water main to convey water from a new dam to several municipalities. For the 2004-2008 period, the annual volume made available to the area was 14,5 hm<sup>3</sup>. This new water main has provided the municipalities with additional water resources and has released other sources which were under pressure.



Picture 5: Water feeding a new water main increasing availability in an Italian region



Picture 6: New treatment plant improving water quality in a big Greek city

**... some projects were not in operation because of missing links ...**

43. Five projects, although physically completed between 2005 and 2008, had not delivered any results by the time of the audit<sup>21</sup>. Two other projects completed in the same period have become partially operational, but with limited results. The main reason for this was the lack of complementary infrastructure, delayed either in its construction or entry into service (see **Box 7**).

**Box 7 - Examples of projects not in operation because of missing links**

In Spain, less than 20 % of the capacity of a desalination plant was being used four years after completion. Despite there being sufficient demand to warrant increased water production, the conveyance system and urban distribution (and irrigation) networks, also co-financed by EU Funds, were not in place at the time of the audit.

Four years after the construction of a dam in Greece, the complementary treatment plant required to make the project operational needs to be redesigned and constructed, thus delaying the functioning of the system.

**... and other projects contained inherent limitations**

44. In some cases, the achievement of results is affected by projects' inherent limitations: for instance, in one project designed to improve the quality of the water distributed in a big city, obtaining maximum quality is dependent on other environmentally controversial projects. In two other cases, the treatment plants built are fed via open channels, making the water intake vulnerable to contamination. In another case, the water produced by one desalination plant reaches the municipal reservoirs at too high a temperature for domestic use (sometimes over 30 degrees).

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<sup>21</sup> A similar case had been observed in a Statement of Assurance exercise (see Annual Report 2008, paragraph 6.19). It concerns a water main which was physically completed in 2004 but was not in use at the beginning of 2009, due to lack of water in the reservoir feeding the water main.

**Reporting on achievements has been of limited value**

45. For Commission managed CF projects (see paragraph 29), a final report has to be presented at completion as a condition for final payment; for ERDF major projects, the Regulation only requires information to be provided in the reports of the operational programme where these projects are included.

46. These reports provide partly useful information about the results achieved: only for one project, are results described in terms of the volume of water produced and supplied to the municipalities. In two cases, the final reports merely state that the results have been achieved and, in one case, no information is provided. In five projects, no results could be provided as, although the projects had been completed, they were not yet operational when the final report was presented.

47. As regards the additional conditions on reduction of water losses imposed by the Commission (see paragraph 32), in one of the four cases, the report does not contain any information on the extent to which the Commission's condition had been met. Nevertheless, the Commission made the final payment. In the two cases where the Commission had imposed specific follow-up requirements, in particular regarding the application of measures against contamination from agriculture or waste water (see paragraph 33), no information was provided.

48. So far as projects subject only to Member State approval were concerned, only in two of the Member States covered by the audit were beneficiaries required to submit a final report with the final payment claim. Moreover, these reports indicate the main changes affecting the project in terms of cost and delays, but do not provide details about the results achieved. In the other two Member States, final payment claims are only accompanied by supporting documents for the expenditure incurred.

***Have the results been achieved at the lowest cost to the EU budget?***

49. Most of the co-financed projects have contributed towards improving the supply of water to EU citizens. In order to assess whether this result could have been achieved at a lower cost to the EU budget, the Court examined whether:

- (a) the construction of the co-financed infrastructure had been carried out in an economical way;
- (b) the infrastructure works efficiently, that is to say their rate of use is satisfactory and the rate of non-invoiced water in the dependant water distribution network is acceptable;
- (c) whether the EU grant had been set at an appropriate level, taking into account that the co-financed projects generate revenue.

**Economy is affected by delays and cost overruns**

50. In several cases the contracting procedures were found not to comply with European rules for the awarding of contracts. However, when this occurred, the Commission and the national control authorities did apply the appropriate corrections to the co-financed expenditure.

51. All projects experienced delays in their construction, ranging from a few months to more than three years. In most cases, delays caused by additional requests imposed by environmental impact assessments, difficulties in obtaining administrative permits, inaccurate estimates or calculations could have been partly avoided by better planning.

52. All projects also experienced cost increases which, in 20 % of the cases, were above 30 % of the initial price, with a maximum price increase of 80 % in one case. The most frequent reason for these cost overruns was poor planning, which resulted in delays leading to penalties to be paid by project promoters and price increases.

**Several projects operate with limited efficiency**

53. Two main efficiency parameters used in the audit were the rate of use of the infrastructure and the rate of non-invoiced water in the dependent distribution networks:

- (a) a low rate of use of the capacity means that a smaller, less expensive infrastructure might have provided the same level of service;
- (b) a high rate of non-invoiced water in the dependent distribution networks implies, in particular, losses. If investment had successfully tackled water losses, less water would need to be extracted, treated and transported by the new infrastructure, which could therefore have been smaller in scale or even not needed at all.

54. At the time of the audit, 21 co-financed projects had been in operation for one to four years, three were starting to operate and five were physically completed but not in operation. **Table 3** assesses these projects against the two main efficiency parameters.

**Table 3 - Assessment of the projects in operation against the main efficiency parameters**

Type of project	Actual date of entry in operation	Horizon year of project	Rate of use of co-financed infrastructure	Rate of non-invoiced water in dependent distribution networks
A	2006	2018	91,3	21,0
A, B	2004	2020	82,4	26,0
A	mid 2008	2028	63,2	16,8
A	2005	2015	73,0	55,5
A	2005	2021	65,9	high <sup>1</sup>
A	partially mid 2005	2012	16,8	no data
B	end 2000	2020	100,0	26,0
B	mid 2006	2027	52,8	27,0
B	2008	2030	50,6	25,8
B	nov 2008	2015	58,3	high <sup>1</sup>
B	2004	2015	31-64	43,5
B,A	2004	2030	22,7	29,6
B,C	2006-2009	2038	20,0	13,0
B	2005	2016	16,2	39,0
B,C	mid 2008	2040	32,6	55,3
B	2004	2040	20-34	43,5
B	mid 2008	2029	20,3	no data
B	2008	2028	34,8	no data
B	partially 2009	2044	no data	no data
C	2006	2038	NA	33,0
C	2003	2040	NA	43,5
C	2005	2022	NA	no data

**Legend:**

	High rate of use ( $x \geq 70\%$ ) or low rate of non-invoiced water ( $x \leq 25\%$ ).
	Medium rate of use ( $40\% \leq x < 70\%$ ) or medium rate of non-invoiced water ( $25\% < x < 40\%$ ).
	Low rate of use ( $x < 40\%$ ) or high rate of non-invoiced water ( $x > 40\%$ ).

NA = non applicable: projects in which the minimum size of pipes is imposed by technical standards.

<sup>1</sup> There are no data regarding the level of non-invoiced water due to lack of meters. Nevertheless, other information indicates that the efficiency of the distribution networks is poor.

55. For the operational projects, there is a great variation in the rate at which the capacity of the co-financed infrastructures is used - between 100 % and 16 % - and in the level of non-invoiced water from the dependent distribution networks - from 13 % to 55 %. For the purpose of this analysis, projects with similar characteristics were placed in one of three categories (see **Table 4**).

**Table 4 - Project typology for efficiency assessment**

	Description	Useful lifetime	Possibility to implement in phases
Type A	Treatment and desalination plants	15-20 years	yes
Type B	Abstraction and transport infrastructure	30-50 years	no
Type C	Distribution networks	30-50 years	no

		
Picture 7: Desalination plant (type A)	Picture 8: Water transport infrastructure (type B)	Picture 9: Distribution network (type C)

56. Assumptions relating to projects having a longer lifetime are inherently less reliable than those for shorter lifetimes. For projects which can be implemented in phases, implementation could evolve according to needs.

57. With regard to the seven type A projects or projects including type A elements that had been in operation for at least one year:

- (a) capacity: three projects operate at a good capacity, three at a medium level and one at a low level. Since the lifetime of this type of infrastructure is relatively short, projects that are currently under-used are less likely to reach an acceptable level of use; this could have been avoided by implementing the desalination or treatment capacity in phases;

(b) non-invoiced water: for two of the projects, the level of non-invoiced water is very high. In one case the rate is over 50 % and, in another, although water distributed to consumers is not metered, a per capita consumption of 550 litres per day implies that losses in the network are likely to be very high<sup>22</sup>.

58. With regard to the 13 type B projects or projects containing type B elements that had been in operation for more than one year:

- (a) capacity: one project operates at maximum capacity, four projects operate at medium rate and eight at low rate. The reasons for this level of performance are the high estimates of future demand (see **Table 2**) and the lack of coordination among different authorities in charge of the water supply systems (see **Box 8**). There are also several cases where, despite signed agreements, the supply provided is not used or municipalities have withdrawn their commitment to use the water;
- (b) non-invoiced water: except in one case, efficiency is also severely affected by medium or low performance; in two other cases, no data was available.

59. Finally, for the five projects of type C or containing type C elements, the rate of use of the capacity is not assessed, because there is little scope for modifying the size of the pipes, due to technical reasons. As regards the rate of losses, the newly installed sections of the network achieve good results of about 10 %. However, the rate of non-invoiced water in the overall urban distribution network continues to be high or medium (from about 30 to 45 %) in three cases because only a limited part of the network has been renovated.

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<sup>22</sup> The international standard for domestic use is 120 -150 m<sup>3</sup> per household and year, which corresponds to 132 -164 litres per inhabitant and day.

**Box 8 - Examples of low rate of use of infrastructure due to lack of coordination between authorities**

One regional authority promoted the renovation of the water main for a supply system delivering bulk water to several municipalities and co-financed by the ERDF. At the same time, the main municipality involved built a desalination plant, which was also co-financed by the ERDF. The water main was only used at a rate of 58 % in the first year of operation. A decision was taken to discontinue the desalination plant in May 2010, only four years after commissioning.

In another Member State, a new bulk water supply system was promoted by a State-owned company and co-financed by the CF. However, the municipalities to be supplied by this system required their local infrastructures to be incorporated into the system. Moreover, in the end, the largest municipality refused to be supplied by the new system. As a result, the rate of use of the co-financed infrastructure is currently less than 25 %.

**Process for setting grant rates shows significant weaknesses ...**

60. The Regulations governing the Structural funds and the CF lay down the rules for setting Community financial assistance. The EU grant cannot exceed specific ceilings<sup>23</sup>. Within the limits of these ceilings, the level of Community assistance in revenue-generating projects is determined on the basis of the financing gap method: the grant cannot exceed the difference between the discounted costs of the investment and the discounted net revenues of the project. This aims at ensuring that the project receives the resources needed to be implemented without unjustified over-financing.

61. For all CF projects and ERDF major projects examined, the grant applications presented to the Commission by Member States (see paragraph 8) included a financial Cost-benefit analysis (CBA). All the applications requested

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<sup>23</sup> Article 7 of Regulation (EC) No 1164/1994 and Article 29 of Regulation 1260/1999.

assistance on the basis of the financing gap rate resulting from the CBA<sup>24</sup>. The EU contribution varied from 40 % to 85 % of the total eligible costs of the project.

62. For the other ERDF projects examined (not submitted for individual grant approvals to the Commission), only Greece and Portugal requested that a CBA be provided by the project promoters as part of the documentation accompanying the applications. However, the co-financing rate was determined irrespective of the CBAs. In most cases the projects were awarded the maximum co-financing rate granted to the operational programme measure in which they were included. The grant rate for these projects varied from 40 % to 80 % of the total eligible costs.

63. During the audit, the Court found significant weaknesses in the financial analyses provided in support to Member States' grant applications<sup>25</sup>:

- (a) in four of the 11 CBAs provided to the Commission, contrary to the rules of the financing gap method, depreciation had been included in the calculation of operational expenditure. As a result, in two cases, the grant rate was set at around twice the level it should have been, and in the two other cases, at about 50 % above that level;
- (b) in most of the cases where projects form part of a wider water supply system, no overview of the overall system was provided although this was necessary for the financial evaluation of the part presented for co-financing. Moreover, the operating costs and revenues used in the analyses were derived as a pro-rata of the wider water supply systems to

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<sup>24</sup> Except in two projects submitted before 1999 for which the financing gap method was not applicable.

<sup>25</sup> This situation has already been highlighted in a previous report of the Court; see in particular paragraphs 21 to 34 of Special Report No 1/2008 concerning the procedures for the preliminary examination and evaluation of major investment projects for the 1994-1999 and 2000-2006 programme periods.

which the co-financed projects belonged; only in one case were the assumptions based on the actual data of the water supply system;

- (c) some figures provided in the CBAs were unrealistic; for example, constant volumes and prices were used in almost all cases. Furthermore, the Commission did not assess the soundness of the CBAs' estimates of the operating costs.

**... and does not take sufficient account of the ability of the projects to generate revenue**

64. In the water supply sector, the revenues are tariffs and other charges paid by the various types of user. These revenues have an impact on the rate of Community assistance as they contribute towards reducing the financing gap of a project. To assess whether a grant rate is set at a level which avoids over-financing and ensures the efficient use of EU resources, the ability of a project to generate revenues must be taken into account.

65. In 2000, the Commission decided that the rate of assistance should be adjusted to encourage the introduction of charging systems covering the costs of operating, maintaining and replacing infrastructures as well as the costs of pollution abatement<sup>26</sup>.

66. The Court's review of the sampled projects found that, in most cases the rate granted was merely the rate applied for. Except in one case (see **Box 9**), no attention was paid to the charging systems, which allowed for very low recovery rates. In most of the cases tariffs only covered the operating costs and not the total investment cost borne by the national public and EU funding.

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<sup>26</sup> See "Guide to Cohesion Fund, 2000–2006", version 1, February 2000 - Annex C.

**Box 9 – A case where the cost recovery principle was taken into account**

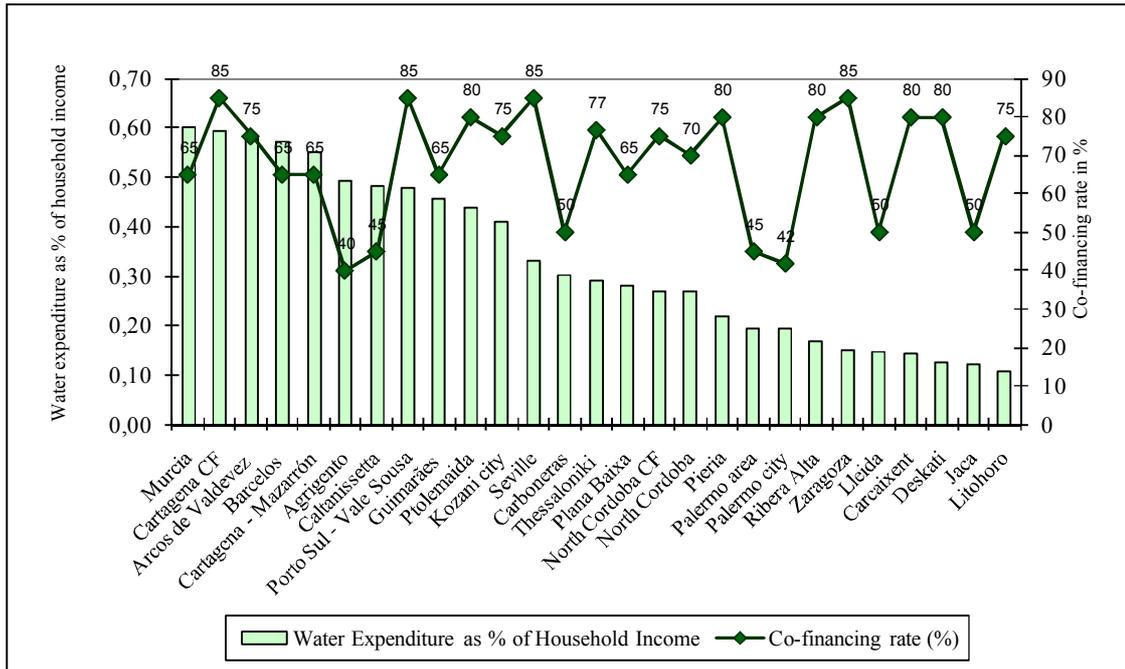
In one grant application the Member State had explained that it had set up a system to recover a significant part of the costs from the users. Recognising the effort made, the Commission decided to co-finance at a rate of 75 %, even though the financing gap resulting from the financial analysis had been fixed at 52 %. The financial surplus was due to be used for improving other water infrastructure.

The Commission's decision was aimed at encouraging good practices, but this was not consistent with the financing gap method for setting the EU financial assistance.

67. The Court's review of the tariffs for water services also found that:

- (a) Member States tend to maximise EU financial assistance by keeping tariff levels low. In one case the tariffs had not been updated since the '90s. There are cases where water tariffs were set by national authorities only after determining the maximum expected amount of EU financial assistance. Under these circumstances, the CBAs submitted to the Commission justify *ex post* the amount of the grant expected, instead of determining it as a result of the analysis made;
- (b) in relative terms, the tariffs set in the areas served by the projects audited account for less than 1 % of the household disposable income. The Commission never questioned the potential to recover costs from users as presented in the applications, nor proposed any specific benchmark to assess the appropriateness of the water prices put forward. Moreover, there appears to be no correlation between the amount of the household income used to pay for water services and the co-financing rate. Higher co-financing rates are observed both in areas where the users' water expenditure is lower in relation to their income, and in areas where this ratio is higher, without any particular justification being given (see **Graph 1** and **Annex III**).

**Graph 1 - Ratio of household water expenditure to disposable income and co-financing rate**



*Note:* Water expenditure was calculated on the basis of a household water consumption of 120 m<sup>3</sup> per year for all the municipalities in the area served by a project.

68. The principle of charging water costs to users is strengthened by the Water Framework Directive, which establishes an obligation regarding cost recovery for water services as an incentive for stimulating sustainable demand by the users. The obligation is due to be applied by 2010. The cost recovery can however be modulated by taking into account various factors such as “the social, environmental and economic effect of the recovery as well as the geographic and climatic conditions” of the regions affected<sup>27</sup>. In other words, the objective is not necessarily to achieve 100 % cost recovery from users<sup>28</sup>.

<sup>27</sup> Article 9.1 of the Water Framework Directive (Directive 2000/60/EC).

<sup>28</sup> See “Common Implementation Strategy for the Water Framework Directive, Guidance Document n. 1”, 2004.

69. More explicit rules were established by the Commission in 2006<sup>29</sup>, in accordance with Council Regulation 1083/2006 on the Structural Funds<sup>30</sup>. The new guidance specified that "tariffs should at least cover operating and maintenance costs, as well as a significant part of the assets' depreciation". An adequate tariff structure should be envisaged to maximise the project's revenues before public subsidies, while taking affordability into account. A commonly accepted affordability ratio for water supply and sanitation is 4 % of household income<sup>31</sup>.

70. As regards the new programme period, the four Member States covered by this audit have all set up procedures requiring that proposals for water infrastructures whose total cost is greater than one million euro should provide a financial CBA. In three of the regions visited, the new national procedures require that a specific analysis of water tariff levels should be included in the CBAs. However, only in Portugal, have clear rules been established to determine the amount of the grant, based on how the cost recovery principle is applied by the municipalities concerned. The affordability level for water services has been defined in both relative terms (tariffs as a percentage of household income) and absolute terms (maximum price per m<sup>3</sup>).

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<sup>29</sup> European Commission, "The new programming period 2007-2013 - Guidance on the methodology for carrying out cost-benefit analyses - working document no. 4", 8/2006. This guidance was prepared according to Article 40(e) of Regulation 1083/2006. See also "Guidance note on Article 55 of Council Regulation (EC) n°1083/2006: Revenue Generating Projects".

<sup>30</sup> See Article 55 of Council Regulation (EC) No 1083/2006 of 11 July 2006 laying down general provisions on European Regional Development Fund, the European Social Fund and the Cohesion Fund and repealing Regulation (EC) No 1260/1999 (OJ L 210, 31.7.2006, p. 25).

<sup>31</sup> A review carried out by the EBRD presents benchmarks ranging from 2,5 % in the US up to 5 % for the World Bank. See Fankhauser, S. and S. Tepic. 2007: "Can Poor Consumers Pay for Energy and Water? An Affordability Analysis for Transition Countries". WP No 92, EBRD 2005. Energy Policy. 35:1038–1049.

## **CONCLUSIONS AND RECOMMENDATIONS**

71. Whilst Structural Measures spending has contributed to improving the supply of water for domestic use, better results could have been achieved at a lower cost to the EU budget.

### ***Solutions adopted***

72. All the projects examined were designed on the basis of studies of current and future water needs. However, better analyses could have made it possible to build smaller capacity infrastructure and consider alternative solutions that might have produced better effects:

- (a) estimates of future water needs did not take into account either downward trends in water consumption or all available resources (see paragraphs 18 to 24);
- (b) in general, the analyses of possible solutions were limited to supply side measures, paying little attention to the reduction of water losses and the use of more accessible resources (see paragraphs 25 to 28);
- (c) sometimes, the Commission's review led to conditions (mostly concerning the reduction of water losses) being added to the grant decisions; its intervention could, however, have been more effective; little value was added by the Member States' Managing Authorities. For the 2007-2013 period, fewer projects will be examined by the Commission and more by the Managing Authorities (see paragraphs 29 to 35).

### **Recommendation 1**

(a) **The Member States** should:

- (i) improve their ex-ante analyses and forecasts of future water needs by taking into account recent and accurate data (in particular by taking into consideration

the downward trends in per capita consumption) and improve their inventory and review of all available water resources;

(ii) pay greater attention to alternatives to the supply side solutions, for example by taking into account the potential for reducing water losses, taking action on the demand side, implementing measures for the protection of water quality.

(b) **The Commission** should:

(i) in deciding whether to grant financial support to projects, systematically assess whether all necessary measures for efficient water resource management are implemented in the areas concerned. It should also ensure that the effect of these measures is taken into account in the water needs forecasts and assessments of alternatives underpinning the projects;

(ii) encourage **Member States'** Managing Authorities to give due consideration to efficient water resource management in the areas concerned by the water infrastructure co-financed.

### ***Achievement of aims***

73. The co-financed projects are contributing towards improvements in the water supply to EU citizens in the areas concerned. However although some projects had been completed several years before the audit took place, they were not in operation because of missing links in the water supply network (see paragraphs 41 to 44).

74. The current monitoring procedures and tools are only partly useful for informing the Commission and the Member States' Managing Authorities about the achievements of the projects. Where the Commission has imposed particular conditions, it has not always adequately checked whether they are implemented (see paragraphs 45 to 48).

**Recommendation 2**

(a) **The Member States** should:

(i) ensure, from the planning stage, that the complementary infrastructure required for the entry into operation of the projects is available on time;

(ii) set up better monitoring tools to assess project achievements;

(b) **The Commission** should:

(i) define the information it needs from the **Member States** to assess the impact of the related projects;

(ii) carefully assess the implementation of the conditions imposed in the grant decisions.

***Cost to the EU budget***

75. The objectives could have been achieved at a lower cost to the EU budget:

(a) several projects have encountered delays and cost overruns which could have been avoided at least to some extent (see paragraphs 50 to 52);

(b) several projects operate at a capacity that is too low, as a consequence of water demand being lower than forecast and high levels of non-invoiced water in the overall supply systems (see paragraphs 53 to 59);

(c) the process for setting grants showed significant weaknesses and no assessment was made of the potential for cost recovery from users (see paragraphs 60 to 70).

**Recommendation 3**

(a) **The Member States** should:

- (i) pay more attention, during the planning phase, to factors which often cause delays, such as environmental impact assessments, administrative permits and estimates and calculations for the projects;
- (ii) improve the quality of the ex ante analyses of the projects and take their results into account when determining the size of new infrastructures;
- (iii) systematically analyse the pros and cons of building infrastructure in stages, with the aim of making better use of the capacity built, and develop it according to the evolution of needs.

(b) **The Commission** should:

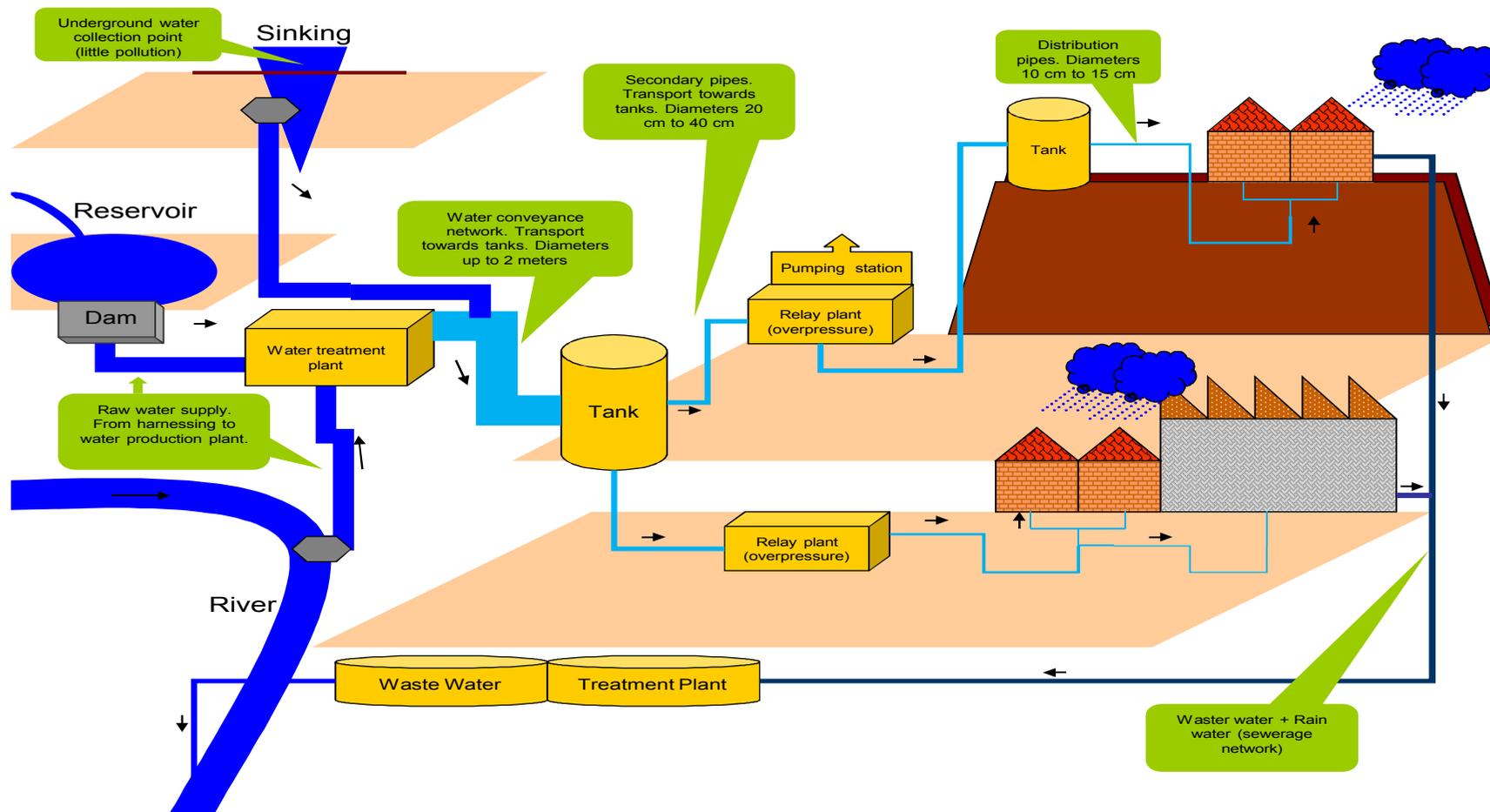
- (i) pay more attention to the quality of the financial analysis accompanying the grant applications and request the information it needs to set the grant at the appropriate level;
- (ii) ensure an adequate application of the cost recovery principle to increase the efficient use of EU funds.

This Report was adopted by Chamber II, headed by Mr Morten LEVYSOHN, Member of the Court of Auditors, in Luxembourg at its meeting of 8 September 2010.

*For the Court of Auditors*

Vítor Manuel da SILVA CALDEIRA  
*President*

### Water supply systems



**Projects selected for the audit**

Country	Project Title	EU Fund	Total eligible cost (million euro)	ERDF/CF contribution (million euro)
Greece	Water Supply of Thessaloniki from Aliakmon river, ΥΔΡΕΥΣΗ ΘΕΣΣΑΛΟΝΙΚΗΣ ΑΠΟ ΤΟ ΠΟΤΑΜΟ ΑΛΙΑΚΜΟΝΑ	CF	79,42	60,88
Greece	Renovation of external aqueduct of Municipalities in Pieria region, ΑΝΑΚΑΙΝΙΣΗ ΕΞΩΤΕΡΙΚΟΥ ΥΔΡΑΓΩΓΕΙΟΥ ΥΔΡΕΥΣΗΣ ΣΥΝΔΕΣΜΟΥ ΚΟΙΝΟΤΗΤΩΝ ΝΟΜ. ΠΙΕΡΙΑΣ	ERDF - OP Central Macedonia	4,69	3,75
Greece	Water Supply in Litohoro; ΥΔΡΕΥΣΗ - ΑΠΟΧΕΤΕΥΣΗ ΛΙΤΟΧΩΡΟΥ	ERDF - OP Central Macedonia	1,48	1,11
Greece	External and internal Water supply network in Kozani, ΕΣΩΤΕΡΙΚΑ ΚΑΙ ΕΞΩΤΕΡΙΚΑ ΔΙΚΤΥΑ ΥΔΡΕΥΣΗΣ ΔΗΜΟΥ ΚΟΥΑΝΗΣ ΤΗΛΕΕΛΓΧΟΣ ΤΗΛΕΧΕΙΡΙΣΜΟΣ ΚΑΙ ΕΛΕΓΧΟΣ ΔΙΑΡΡΟΩΝ	CF	18,60	13,90
Greece	Water supply Deskati, ΥΔΡΕΥΣΗ ΔΕΣΚΑΤΗΣ	ERDF - OP Western Macedonia	4,02	3,21
Greece	Internal network for water distribution of Ptolemaida and external network for water distribution in Mavropigi, Asvestopetra and Proastio, ΤΡΟΦΟΔΟΤΙΚΟΣ ΑΓΩΓΟΣ ΕΣΩΤΕΡΙΚΟΥ ΔΙΚΤΥΟΥ ΥΔΡΕΥΣΗΣ Δ.Δ. ΠΤΟΛΕΜΑΙΔΑΣ ΚΑΙ ΕΞΩΤΕΡΙΚΟ ΔΙΚΤΥΟ ΥΔΡΕΥΣΗΣ ΟΙΚΙΣΜΩΝ ΜΑΥΡΟΠΗΓΗΣ, ΑΣΒΕΣΤΟΠΕΤΡΑΣ ΚΑΙ ΠΡΟΑΣΤΙΟΥ ΤΟΥ ΔΗΜΟΥ ΠΤΟΛΕΜΑΙΔΑΣ	ERDF - OP Western Macedonia	2,40	1,92
Italy	Addutrice Acque Grezze Rosamarina	ERDF - OP Sicily	13,69	6,16
Italy	Completamento collegamenti esterni tra i serbatoi di Palermo	ERDF - OP Sicily	12,34	5,14
Italy	Rete di distribuzione, sottorete 5 Libertà	ERDF - OP Sicily	13,00	5,42
Italy	Rifacimento Acquedotto Favara di Burgio	ERDF - OP Sicily (MP)	32,96	13,28
Italy	5° modulo bis Dissalatore di Gela	ERDF - OP Sicily	32,86	14,79
Portugal	2a Fase do Sistema multimunicipal de abastecimento de água à Área Sul do Grande Porto - Grupo I: Alargamento à região do Vale do Sousa	CF	49,88	42,40
Portugal	Abastecimento de água ao Sector Norte do concelho e reforço do abastecimento à sede do concelho de Arcos de Valdevez	ERDF - OP Norte	4,28	3,21
Portugal	Abastecimento de água da Área a Sul da cidade de Barcelos-4ª Fase	ERDF - OP Norte	3,54	2,30
Portugal	Abastecimento de Água a Guimarães - Sistemas de Adução e Reservas - Fase II	ERDF - OP Norte	2,43	1,58
Spain	Abastecimiento a Zaragoza y corredor del Ebro	CF	79,86	67,88
Spain	Abastecimiento a Lleida y su zona desde el embalse de Santa Ana	CF	24,50	12,24
Spain	Abastecimiento y Planta Potabilizadora de Jaca	ERDF - OP Aragon	4,73	2,36
Spain	Desaladora de Cartagena (también conocida como San Pedro del Pinatar 1)	CF	55,10	46,90
Spain	Conexión de la desaladora del Campo de Cartagena (también conocida como Valdelentisco) con el Canal de Cartagena	ERDF - OP Murcia	19,71	12,81
Spain	Mejora de la potabilizadora de Campotejar	ERDF - OP Murcia	5,38	3,50
Spain	Abastecimiento al Alfoz de Murcia, conducción este	ERDF - OP Murcia	1,89	1,23
Spain	Abastecimiento a Sevilla (presa de Melonares)	CF	64,60	54,90
Spain	Abastecimiento a la zona Norte de Córdoba (Presa de la Colada)	CF	20,60	15,48
Spain	Norte de Córdoba	ERDF - OP Andalucía (MP)	22,20	15,54
Spain	Desaladora de Carboneras	ERDF - OP Andalucía	115,30	57,60
Spain	Abastecimiento a las Comarcas de la Ribera (parcial n°2)	CF	15,13	12,10
Spain	Depósito agua potable Carcaixent (Ribera)	ERDF - OP Valencia	0,49	0,31
Spain	Abastecimiento Plana Baixa de Castellón	ERDF - OP Valencia	10,08	6,55

**Household water expenditure and disposable incomes in the areas served by the projects**

Project	Area/Municipality concerned	Project rate of co-financing (%)	Expenditure for standard annual household consumption of 120 m <sup>3</sup> , incl. VAT (1) (2)	Price per m <sup>3</sup> (based on consumption 120m <sup>3</sup> per year) in EUR, incl.VAT	Annual household disposable income (3)	Water expenditure (incl. VAT) as % of household disposable income
GR 1	Thessaloniki	77	97,30	0,81	30 168	0,32
GR 2	Pidna	80	89,02	0,74	30 168	0,30
	Elafina		77,62	0,65	30 168	0,26
	Methoni		62,23	0,52	30 168	0,21
GR 3	Litohoro	75	35,21	0,29	30 168	0,12
GR 4	Kozani city*	75	149,76	1,25	31 665	0,47
	Kozani districts*		105,61	0,88	31 665	0,33
GR 5	Deskati	80	44,60	0,37	31 665	0,14
GR 6	Ptolemaida*	80	159,96	1,33	31 665	0,51
	Mavropigi		72,11	0,60	31 665	0,23
	Asvestopetra		90,90	0,76	31 665	0,29
	Proastio		55,20	0,46	31 665	0,17
IT 1	Palermo area	45	85,84	0,72	40 617	0,21
IT 2,3	Palermo city	42	85,84	0,72	40 617	0,21
IT4, 5	Agrigento	40	176,88	1,47	32 725	0,54
IT4, 5	Caltanissetta	45	197,27	1,64	37 288	0,53
PT 1	Felgueiras	85	88,83	0,74	33 086	0,27
	Lousada		134,97	1,12	24 557	0,55
	Paços de Ferreira		202,73	1,69	26 928	0,75
	Paredes		113,27	0,94	27 446	0,41
PT 2	Arcos de Valdevez	75	101,68	0,85	17 548	0,58
PT 3	Barcelos	65	165,94	1,38	29 066	0,57
PT 4	Guimarães	65	145,26	1,21	31 672	0,46
	Vizela		145,26	1,21	28 337	0,51
ES 1	Zaragoza	85	71,07	0,59	43 738	0,16
ES 2	Lleida	50	70,66	0,59	44 839	0,16
ES 3	Jaca	50	63,56	0,53	48 494	0,13
ES 4	Cartagena	85	219,36	1,83	34 597	0,63
	Torre Pacheco		150,54	1,25	34 597	0,44
	San Javier		164,80	1,37	34 597	0,48
ES 5	Cartagena	65	219,36	1,83	34 597	0,63
	Mazarrón		97,98	0,82	34 597	0,28
ES 6,7	Murcia	65	207,47	1,73	34 597	0,60
ES8	Seville	85	119,56	1,00	36 201	0,33
ES9	North Cordoba	75	92,91	0,77	34 257	0,27
ES10	North Cordoba	70	92,91	0,77	34 257	0,27
ES11	Carboneras	50	122,69	1,02	40 619	0,30
ES12	Alzira	80	45,56	0,38	37 178	0,12
	Cuillera		98,46	0,82	37 178	0,26
ES13	Carcaixent	80	53,25	0,44	37 178	0,14
ES14	Moncofa	65	194,78	1,62	39 618	0,49
	Burriana		108,82	0,91	39 618	0,27
	Vila-real		73,50	0,61	39 618	0,19
	Vall d'Uixo		132,83	1,11	39 618	0,34
	Nules		92,73	0,77	39 618	0,23
	Betxi		157,02	1,31	39 618	0,40
	Onda		53,59	0,45	39 618	0,14

	(1) According to international studies, 120 m <sup>3</sup> /year/household (aprox. 132 l/day/person) can be considered as a standard consumption. Calculation based on prices of 2008 and in Greece of 2009.
	(2) VAT of 10 % in Italy, of 7 % in Spain and Portugal, in Greece VAT of 9 % applies to water tariff, 19 % to fixed and special fee.
	(3) Calculated as disposable income per capita (at NUTS2, or NUTS3 if available) multiplied by average number of persons in a household.
	IT: Average number of persons in household: source Family components in Sicily, ISTAT 2003. Disposable income per capita: source Valore aggiunto per abitante, STAT 2006.
	GR: Disposable income of private households in 2006 (at NUTS 2 level, in purchasing power standards) - source: Eurostat 2009. Average size of the household - source Household Budget Survey 2004, Greek Statistical office.
	PT: Average size of household based on Census 2001 data. Disposable income based on purchasing power per capita 2005 in regions and average income level of (1032=100) - source Statistical office of Portugal.
	ES: Average size of household in NUTS3 - source Continuous survey of family budgets, data of 2005. Gross disposable income of households in 2006, Spanish Regional accounts, National institute of statistics. For Jaca, Source: Instituto Aragonés de Estadística (data of 2005).
*	For calculation of total water expenditure, a half of a special fee was taken into account besides fixed and volumetric fee in case of Kozani and Ptolemaida (law on DEYA provides for a special fee of 80 % of water tariff for future investments in water supply and sewerage infrastructure).

## **REPLY OF THE COMMISSION TO THE SPECIAL REPORT OF THE COURT OF AUDITORS**

### **"Is EU Structural Measures spending on the supply of water for domestic consumption used to best effect?"**

#### **EXECUTIVE SUMMARY**

III. The European Regional Development Fund (ERDF) and Cohesion Fund (CF) co-financed in 2000-2006 well over 100 projects in the field of water supply aiming to improve the management of water resources.

The financing of such projects needs to be assessed in the framework of the national plans or strategic frameworks that Cohesion Member States (in this case, Greece, Spain, Italy and Portugal) transmitted to the Commission at the beginning of the programming period 2000-2006.

In addition, Member States have other financial resources, in particular own resources, dedicated to water supply measures and the follow-up and monitoring of such projects.

IV. The Commission recalls that when the audited projects were prepared and implemented there was no harmonised framework at EU level for the management of water resources.

Such a framework has been established by Directive 2000/60/EC, known as the Water Framework Directive. This Directive entered into force in December 2000, had to be transposed by December 2003, while its substantial obligations were to be implemented by the end of 2009.

V. The Commission welcomes the Court's conclusion according to which the Structural Measures spending has contributed to improving the supply of water for domestic use.

On the basis of subsidiarity and shared management, Member States have the primary responsibility for the selection, implementation and monitoring of ERDF projects. In addition, with regard to the CF projects and major ERDF projects, which are examined and approved by the Commission, the Commission intervention is conditioned by the applicable legal framework (e.g. the Commission's appraisal has to ensure that they are consistent with the applicable EU legislation).

V. First indent The Commission notes that there has been a growing awareness of downward trends in water consumption. Nonetheless, this was not evident in the projects reviewed by the Court, as these trends were not well recognised in the 1990s or early 2000's, when the audited projects were prepared and implemented. The downward trend has been recognized by the Commission in its recent Communications<sup>1</sup> in relation to water scarcity and droughts, adopted in 2007 and 2008.

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<sup>1</sup> See Communication from the Commission "Addressing the challenge of water scarcity and droughts in the European Union", COM(2007) 414 and Report from the Commission to the Council and the European Parliament on the "follow-up to the Communication on water scarcity and droughts in the European Union", COM(2008) 875.

The Commission underlines that it cannot impose specific alternative solutions and cannot replace the work of national authorities, which are responsible for selecting projects and granting development consent.

Nonetheless, the Commission has co-financed specific projects with the objective to reduce water leakage and water demand in this period.

V. Second indent The Commission welcomes the Court's conclusion that measurable improvements have been achieved in many areas.

V. Third indent While there were limited weaknesses in setting grant rates in the past, resulting from deficiencies in the cost-benefit analyses (CBAs), the legal framework and the Commission's guidelines have been strengthened for the 2007-2013 period.

The Commission also notes the length of time needed for the full functioning of such complex infrastructure projects.

VI. First indent The Commission agrees that the identified issues are important elements to ensure the overall sustainability of the regions concerned.

The Commission considers that the progressive implementation of the Water Framework Directive will significantly contribute towards addressing these issues.

VI. Second indent The Commission considers that the progressive implementation of the Water Framework Directive, which was not applicable for the audited projects and period, in particular the principle of recovery of the costs of water services, will contribute significantly towards increasing the efficient use of EU funds as regards water supply projects. The Commission will scrutinise the implementation by Member States of this principle.

In its Communication on the water scarcity and droughts, adopted in 2007, the Commission has stressed the importance of identifying and implementing prevention measures (e.g. water saving, alternative solutions, water pricing policy).

VI. Third indent The Commission supports such an objective. Investments in water infrastructures are complex projects, which are often developed in phases. While short delays may be justified in building and linking infrastructures, the Commission agrees with the Court that such delays should be avoided or reduced.

The correct implementation of the Directives on environmental assessment of plans and programmes (Directive 2001/42/EC) and of projects (85/337/EEC, as amended) are relevant in this regard.

VI. Fourth indent The Commission refers to its reply to VI third indent above.

VI. Fifth indent The regulatory framework for 2007-2013 has reinforced the procedure for submission, analysis, approval and monitoring of major projects. The Commission has taken specific steps to strengthen the cost-benefit analysis (CBA) framework and financing gap analysis by making available to Member States specific guidance and tools. In 2008, it has published an update of the cost-benefit analysis guide, which includes a methodology to be applied systematically by the Member States. Two guidance notes were also published on CBA and on revenue generating projects.

The Commission considers that these steps improve significantly the quality of CBAs submitted by the Member States.

## INTRODUCTION

2. The Commission notes that the needs and challenges in water supply and resources planning are much more important in Southern Europe<sup>1</sup>. This element is equally taken into account in the overall planning and allocation of funds in negotiations with Member States.

3. The individual projects subject to the Court's audit were not covered by the Water Framework Directive as its substantial obligations were to be implemented by the end of 2009.

8. On the basis of Directive 85/337/EEC, on environmental impact assessment (EIA), as amended, the Commission takes into consideration the results of the environmental assessment carried out by the competent national authorities before the authorisation of a project. The environmental evaluation/consent contains all relevant environmental information and is based on several technical studies. The approval of Cohesion Fund projects, major projects and operational programmes is conditioned by the favourable opinion of various Directorates-General concerned, including the Directorate General for the Environment, which has more specific knowledge and examines aspects particular to the implementation by the Member States of various directives, including water management or other environmental aspects.

8. (a) The assessment of the Commission was carried out on the basis of the rules applicable at the time of the submission of the application. The rules have changed since the last programme period. The description of the Court refers to the period 2000-2006.

For the 2007-2013 period, the Cohesion Fund is better integrated into programming. Projects below the €50 million threshold are not subject to the Commission appraisal.

The new rules, entered into force on 25 June 2010 (Article 3 of Regulation 539/2010), enable a more strategic approach to the development of co-financed projects, including major projects (i.e. projects with investment costs of over €50 million).

9. The Commission intentions with the guidelines was to express good practice that Member States were encouraged to consider. The Commission guidelines were adopted while the legislative process for the Water Framework Directive was ongoing, and were therefore a non binding provisional reference that was superseded when the Directive entered into application. See also reply to paragraph 3.

## AUDIT SCOPE AND OBJECTIVES

14. The Commission points out that the 29 projects represent a total co-financing by Cohesion Policy of € 488,45 million or 13.5% of the total investments in water supply in the four audited Member States. For the period audited, the Commission examined the quality of individual projects submitted by Member States only for Cohesion Fund projects and major ERDF projects, meaning that it examined 11 of the 29 projects of the sample.

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<sup>1</sup> See also Communication from the Commission "Addressing the challenge of water scarcity and droughts in the European Union", COM(2007) 414 and final Report from the Commission to the Council and the European Parliament on the "follow-up to the Communication on water scarcity and droughts in the European Union", COM(2008) 875.

## OBSERVATIONS

21-22. The Commission underlines that in the audited period of 2000-2006 the forecasts were mostly elaborated according to the existing standards. Subsequent downward trends observed in per capita consumption could not have been taken into account for the audited projects which were approved from 1995 to 2007. The request for an increased attention on water efficiency was highlighted in an EU policy document in 2007, which also coincides with the year of adoption of the Commission Communication on water scarcity and droughts<sup>1</sup>.

23. The Commission underlines that, on the basis of subsidiarity and shared management, it cannot impose specific alternative solutions and cannot replace the work of national authorities, which are responsible for selecting projects and granting development consent.

Suggesting different solutions or smaller capacity infrastructure is even more difficult in the area of water management, which is per se sensitive (i.e. unanimity was necessary, under the previous EC Treaty, regarding decisions on quantitative management or availability of water resources).

The Commission also refers to its reply to paragraph 8.

### **Box 2** first paragraph

The selection of ERDF projects is the national authorities' responsibility. As this was not a major project, the Commission did not appraise and approve it directly.

### **Box 2** second paragraph

This dam will be functioning from 2010. This project was decided taking into account the droughts in Spain and its prior inclusion in the national hydrologic plan. Alternatives not to construct the dam were evaluated by the Member State in the application form presented to the Commission, but they presented certain difficulties, such as high energy use and other commitments for the water supply of those alternatives.

24. The Commission refers to its reply to paragraph 23.

It is true that actual data show that there is a downward trend in water consumption, contrary to the ex ante evaluations. However, this essential element confirmed in early 2000 could not always be taken into account for the audited projects.

25. The Commission agrees on the importance of identifying all possible alternative solutions.

It underlines though that the focus to water efficiency and the policy request for increased actions only gained major policy attention towards the end and after the 2000-2006 period, i.e. much after the period in which the audited projects were designed and implemented.

Two essential factors should be highlighted in this respect: the existing framework which defines the role and the responsibilities of the Commission and the subsidiarity principle.

With regard to the 9 CF projects and 2 ERDF projects, which were examined and approved by the Commission, it should be stressed that the Commission cannot impose specific solutions and replace the national authorities, which are responsible for granting development consent for a project.

The Commission also refers to its replies to paragraphs 8 and 23.

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<sup>1</sup> See Communication from the Commission "Addressing the challenge of water scarcity and droughts in the European Union", COM(2007) 414.

## **Box 5**

The first case concerns a ERDF project which was examined and approved by the national authorities.

In the second case examined by the Commission, resources available for the area (aquifers) were contaminated and the national authorities indicated in the application form submitted to the Commission that it was practically impossible to obtain concessions for nearby surface water.

In any case, the co-financed infrastructure can be also used in the future in conjunction with aquifers for surface water from this area.

29. The Commission notes that the evaluation carried out was based on the compatibility of the project with Community environmental legislation in force at the time. In particular Directives 85/337/EEC (on the assessment of environmental impacts), 80/778/EEC (drinking water) and 91/676/EEC (nitrates). Directives 98/83/EEC and 2000/60/EEC were adopted and applied at a later date. In the absence of EU laws "harmonising" applicable environmental rules, the Commission's evaluation can only be based on national rules, which may vary from Member State to Member State.

For the reinforced procedures applicable in the period 2007-2013, the Commission refers to its reply to paragraph 35 (a).

The Commission also refers to its replies to paragraphs 8 and 8(a).

30. For the period 2007-2013, the Commission has developed a checklist for internal use during major water and wastewater projects appraisal, for assessing consistency with the environmental 'acquis' and policy. However, only major projects are now subject for a Commission decision (projects in this sector - above 50 million €).

31. The Commission's review of projects is based on socio-economic factors, the coherence and consistency of the project, the degree of maturity and deliverability, using techniques such as cost-benefit analysis and internal rate of return. The Commission carries out the final evaluation based on the fact that the project is operational and in conformity with the initial decision.

In addition, the guide to Cost-Benefit Analysis issued in 2002 provides specific guidance on the design and development of water supply projects.

Furthermore, the Commission Communication in relation to water scarcity and droughts was adopted in 2007.

The Commission also refers to its reply to paragraph 25.

33. With regard to the inclusion of specific condition (monitoring of the application of the Directives on the protection of surface and underground waters), this condition is redundant, as it simply repeats obligations resulting from existing EU legislation. This type of condition is therefore no longer used. However, this does not mean that the Commission does not verify the implementation of the relevant EU legislation; on the basis of the provisions of the relevant environmental Directives, the Commission assess the data reported and, if required, it takes action to ensure compliance with the EU environmental standards laid down.

35. (a) Procedures for approving projects under the Cohesion Policy for the 2007-2013 programming period have been significantly reinforced.

Compared to previous programming periods, the Cohesion Fund is better integrated into programming, enabling a more strategic approach to the development of co-financed projects, including major projects (i.e. projects with investment costs of over €50 million (Cohesion Fund Regulation 1084/2006)). The legal definition of major projects and the information to be submitted by the Member States to the Commission was strengthened (Articles 39 and 40 of Regulation 1083/2006).

The EU JASPERS facility provides technical assistance to the new Member States when they are preparing to submit major projects to the Commission. There is a contract with outside sectoral experts who can be consulted on technical and socio-economic aspects of project applications.

40. The Commission agrees with the Court that the systematic use of the indicators to measure the achievement of projects' objectives is central to a well functioning monitoring and evaluation system. However, not all objectives can be quantified.

41-42. The Commission welcomes the observation that all projects audited were physically implemented as planned, despite minor variations and that the projects contributed to improve the water supply.

43. Member States have the obligation to inform the Commission at closure on the unfinished or non-operational projects and undertake to complete or render them operational. Nonetheless, for ERDF projects they have to observe this obligation two years after the deadlines for closure. Thus, only at that time will the Commission be in the position to establish whether those projects are operational and eligible for co-financing.

See reply to Box 7.

**Box 7** first paragraph

The Commission notes the length of time needed for the full functioning of such complex infrastructure projects. This is one of the limitations in projects with multiple stages or major projects which cover only parts of an infrastructure network.

In this specific case, an important distribution network to convey water from the desalination plant has been put in operation in June 2010. As a result, it is expected that the degree of utilisation of the plant will substantially increase. This trend will continue, as new complementary infrastructure is put in place.

**Box 7** second paragraph

The Commission notes that it is the national authorities' responsibility to ensure projects' operability, functionality and compliance with EU policies. The Commission verifies that these rules are observed at the latest at closure.

In this case, the Greek authorities carried out the necessary procedures for selecting a designer for the equipment in the water treatment plant. The contract signed in December 2009 provides for completion of the design of the necessary layout and water purification equipment within 80 calendar days. The contract for additional works will be signed subsequently, with the aim of completing the work within 2010.

46. The Commission carries out the final evaluation based on the confirmation by the Member State authorities in the closure documents that the project is operational and in conformity with the initial decision. National authorities are obliged to certify therein that projects are completed and operational. Each co-financed project should meet the objectives laid down in the request for co-financing and in the co-financing decision. Where the closure documents are submitted according to applicable rules and the Member State certifies the operability of projects, the Commission has the legitimacy to make the final payments.

The proper subsequent operation of the co-funded projects is not in the scope of the evaluation of Cohesion Policy, but falls under the general EU legislation.

47. In one of the cases, the Commission has not yet closed the project. It will verify at closure the implementation of measures requested to reduce contamination.

50. The Commission welcomes the observation that it applied appropriate corrections in all cases of public procurement weaknesses.

52. The Commission supports the Court's position that cost overruns should be avoided as much as possible.

However, it notes that in 80% of cases the cost increases were less than 30%.

Academic research reports that large infrastructure projects are very complex undertakings and, historically, escalations of costs significantly beyond initial budgets are very common. Such cost overruns may exceed 50 % and reach 100 % in real terms.

55. Member States are in charge of defining the capacity of the proposed infrastructures, according to the expected demand. The life-cycle of most of these infrastructures being measured in terms of decades, an assessment of their operating rate should accordingly also be seen under this longer-term perspective.

57. (a) Within the audited sample actually only one project out of seven, or 14%, operates at low level.

58. (a) The Commission refers to its reply to paragraph 55.

#### **Box 8** first paragraph

The Commission underlines that it is Member States' responsibility to select and monitor ERDF co-financed projects in the framework of operational programmes. The Commission approves only major projects. In this context, possible conflicting strategies between regional and local level administrations fall beyond the Commission's scope of competence.

60. The Commission recognises that there were some weaknesses in setting grant rates in the past in part due also to the regulatory framework. The application of Article 40 of Regulation 1083/2006 provides for a systematic use of the CBA analysis for major projects. While examining major project applications for the 2007-13 programming period, the Commission verifies whether the CBA methodology has been consistently followed. Unlike the previous programming period the Commission is not appraising Cohesion Fund projects below the €50 million threshold. It is the Member States responsibility to carry out properly the CBA and estimate the funding-gap for each project.

For the 2007-2013 period, the Commission issued two guidance notes Working Document n° 4, "Guidance on the methodology for carrying out Cost-Benefit analysis" and "Guidance note on Article 55 of Council Regulation (EC) n°1083/2006: Revenue Generating Projects". The systematic use of these has improved considerably the quality of CBAs submitted by Member States. The "funding gap" methodology is clearly defined in Article 55 of Regulation 1083/2006, applicable to the 2007-2013 period. It did not apply in the same way for the period 2000-2006 for ERDF, where for projects generating substantial net revenues maximum co-financing rates were established.

61. For the ERDF, the rates of assistance had to be set according to Article 29(4) of Regulation 1260/1999. These rules allowed for flexibility in setting co-financing rates. In the Cohesion Fund the flexibility allowed by the Regulation was even greater than for ERDF. The Commission's guidance on revenue generating projects strived for maximum consistency in the methods applied, especially within a given Member State.

62. As ERDF projects are not subject to approval by the Commission, the decisions on the co-financing rate were taken by national competent authorities.

63. For the 2007-13 period, the working document No 4, containing guidance for carrying out CBA, provides a set of working rules and indicative values for key parameters for CBA (e.g., discount rates, reference periods). In the document the Commission recommends that the Member States develop their own CBA guidelines to take into account their specific institutional and economic conditions.

63. (a) Since 2003 the Commission pays particular attention to the quality of CBAs and therefore this issue of including depreciation no longer occurs.

63. (b) The appraisal of Cohesion Fund and major projects is carried out at the level of each individual project to assess its financial and economic profitability.

64. For projects subject to a Commission decision, revenues were, as a general rule, taken into consideration to determine the funding rate. However, a mere application of the funding gap principle would have created a disincentive to apply the polluter pays principle. To avoid these negative effects, the Commission proposed to adopt a modified financing gap formula for water projects. In some cases, affordability and sustainability issues were also considered.

66. The Commission notes that in the final reports requested for Cohesion Fund projects, national authorities are required to confirm the verification of financial information relative to the project. If net revenues exceed 10% of the amounts foreseen, rates are to be adjusted.

67. The Commission refers to its reply to paragraph 66.

67. (a) For the 2007-2013 period, working document n° 4 makes clear that charging policy should take into account the projects normal profitability and the need to cover operational costs while ensuring affordability (i.e. the impact of tariffs on users' income).

68- 69. See reply to paragraph 9.

## **CONCLUSIONS AND RECOMMENDATIONS**

71. The Commission welcomes the Court's conclusion that Structural Measures spending has contributed to improving supply of water for domestic use.

72. (a) There has been a growing awareness of downward trends in water consumption. Nonetheless, this was not evident in the projects reviewed by the Court, as these trends were not well recognised in the 1990s or early 2000's, when the audited projects were prepared and implemented.

72. (b) The Commission agrees that there is scope for improvement, though it is difficult to achieve in each case perfect match between ex-ante demand and savings forecasts against the real outcome.

72. (c) The legislative framework applicable at the time of the design and submission for approval of the audited projects stipulated clearly the responsibilities of the Commission with regard to the approval of Cohesion Fund projects and major projects.

The Commission considers that managing authorities have an important role in ensuring that selected projects meet these performance standards.

In this respect to strengthen capacity in the new Member States the JASPERS facility was set up for the programming period 2007-13.

### ***Recommendation 1***

(a) (i) The Commission agrees that the identified issues in the recommendations are important elements to ensure improved sustainability of the regions concerned.

The Commission considers that the progressive implementation of the Water Framework Directive will significantly contribute towards addressing these issues.

(a) (ii) The Commission agrees on the importance of identifying all possible alternative solutions and supports this recommendation.

It has already acknowledged the importance of those issues in its Communication on the water scarcity and droughts, adopted in 2007.

(b) (i) In its Communication on the water scarcity and droughts, adopted in 2007, the Commission has stressed the importance of identifying and implementing prevention measures (e.g. water saving, alternative solutions, water pricing policy).

The Commission considers that stricter requirements for applications, the working document on cost-benefit analysis and an updated CBA guide should improve the quality of CBAs and provide a common framework for project appraisal.

Improving water supply efficiency is crucial; other criteria also need to be taken into account as appropriate.

(b) (ii) The progressive implementation of the Water Framework Directive which harmonises the rules on water management in the EU will allow more efficient water resource management.

73. The Commission welcomes the Court's conclusion and agrees with the objective of reducing delays in the implementation of co-financed projects. Nonetheless, it notes that the complexity of such projects may sometimes be an inherent factor contributing to delays.

74. The Commission recognises that there were deficiencies in monitoring data. However, the Commission considers that current monitoring tools (final reports for Cohesion Fund projects and annual and final reports for ERDF major projects) are helpful to inform on the achievements of projects.

The Commission verifies the respect of conditions at the time of final payment.

### ***Recommendation 2***

(a) The Commission agrees that periods in which projects remain idle due to lack of complementary infrastructure should be reduced, even though it notes that the complexity of such projects may sometimes be an inherent factor contributing to delays.

In order to strengthen capacity of the new Member States to prepare mature projects, the JASPERS facility was set up for the programming period 2007-13.

The Commission also agrees that better monitoring of achievements can help Member States improve project management.

b) For the programme period 2007-2013 and in the framework of the simplification exercise undertaken in 2008-2010, the provisions for reporting on ERDF and major projects have been significantly simplified and streamlined to allow for an easier and more efficient monitoring.

75. (a) The Commission agrees with the objective of minimizing as much as possible delays in the implementation of co-financed projects. Nonetheless, it notes that the complexity of such projects may sometimes be an inherent factor contributing to delays.

75. (c) While there were limited weaknesses in setting grant rates in the past, resulting from deficiencies in the CBAs, the legal framework and the Commission's guidelines have been strengthened for the 2007-2013 period.

The application of the cost recovery principle, set out in Directive 2000/60/EC applicable from the end of 2010, will further facilitate the setting of grants in the future.

### ***Recommendation 3***

(a) (i) The Commission supports this recommendation.

The Commission considers that managing authorities have an important role in ensuring that selected projects meet these performance standards.

In this respect, to strengthen capacity in the new Member States the JASPERS facility was set up for the programming period 2007-13.

In addition, the correct implementation of the Directive on environmental assessment of plans and programmes (Directive 2001/42/EC) is relevant in this regard.

(a) (ii) The Commission supports this recommendation and refers to its reply to (a) (i) above.

The correct implementation of the Directive on environmental assessment of projects (85/337/EEC, as amended) is relevant in this regard.

(a) (iii) The Commission refers to its reply to (a) (i) above.

(b) The Commission intends to ensure that the reinforced provisions for the 2007-2013 period are fully implemented and bring the desired results.

(b) (i) The JASPERS facility provides technical assistance to the new Member States when they are preparing to submit major projects to the Commission. The Commission also has a contract with outside sectoral experts who can be consulted on technical and socio-economic aspects of project applications. It considers that these steps will significantly improve the quality of applications prior to submission to the Commission.

(b) (ii) The cost recovery principle will become applicable by the end of 2010, according to Article 9 of the water framework Directive. The Commission considers that this will increase the efficient use of EU funds. It will scrutinise the implementation by Member States of this principle.