

WATER POLICY IN GREECE: MANAGEMENT AND PRICING UNDER THE PROVISIONS OF THE EUROPEAN WATER FRAMEWORK DIRECTIVE 2000/60/EC

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Abstract: This paper is related to Greece's water policy as it was formulated after the incorporation of Water Framework Directive (WFD) 2000/60. We examined the status and evolution of constitutional provisions for the protection and management of water resources spanning from the first Greek Constitution of 1843 up to the current constitutional text of 1975 as formulated in 2008 with the incorporation of its third revision. In parallel, we investigated the Greek water pricing legal framework in accordance with Article 9 "Recovery of costs for water services" of the WFD. We compared the actual rates of water services as set by Municipal Water Supply Sewerage Companies (DEYAs) operating in 11 cities across Greece. The findings reveal that there are considerable problems and delays in the implementation of WFD. Regarding municipal water pricing policies, we concluded that DEYAs do not follow a unified and structured pricing scheme. Furthermore, several companies do not discriminate between data costs either per service (water supply, sewerage) or per use (water supply, irrigation, etc.). Finally, it is evident that none of them has yet adopted the relevant provisions set by the European directive for full cost recovery and water pricing reflecting financial, environmental and water resources costs.

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Introduction

The first formalities of principles and rules relating to water have appeared during the period of the Ionian philosophers, in the 6th century BC, in Asia Minor, where the personality of Thales of Miletus, who first admitted that the land floats in the water like a board and that water, is the original substance of everything (Cheller-Nestle, 1990). The law, of course, as a historical phenomenon, initially appears in the primitive forms of the rules, as an unwritten, sacred law, to gradually evolve, from basic private law, into the present-day concept of public law, as a set of rules, reasonably binding people's relationships. (Manassis, 1980). In this context, the first rules on the use and disposal of water were customarily formed, on the basis of ownership.

In Europe, water systems began to develop in the 17th and 18th centuries as services provided to specific "rich" social groups and as a firefighting aid service. During the 19th century, after the increase of drinking water consumption and the aggravation of public health problems, private water and sewerage companies began to be replaced in almost all European countries by municipal enterprises (Hall David et al., 2006). Gradually, the water and sanitation services became a monopoly (Pakos, 1992) since local authorities operated only one enterprise to produce at the lowest possible cost of the total quantity requested.

The purpose of this study is initially to examine the status and evolution of constitutional provisions for the protection and management of water resources in Greece. Study of the longitudinal evolution of the constitutional provisions on the implementation of Water Protection revealed that a relevant provision was adopted for the first time in the 1911 Constitution regarding Freshwater and Thermal Springs, and maintained, with minor modifications, into the 1975/1986/2001/2008 Constitution.

This paper is also related to the European Union (EU) water policy and in particular, the 2000/60 Water Framework Directive (WFD) which introduced the "Recovery of costs for water services" provided for in Article 9 of the WFD. This study is referring to the legal aspects of pricing water services in line with Article 9 of the WFD and presents the implementation policy and the legal framework on pricing water in Greece. Finally, this paper sheds light on the operation of water services and water providers of some Municipal Enterprises for Water Supply and Sewage all over Greece.

Methodology and Data

In the first stage, the research focused on the investigation of the constitutional Greek legal order and the framework it has set for the water resources protection and management. All Constitutional texts of the Greek legal order have been studied, so as to record and map the provisions of current Constitution

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on Water Resources Management. The investigation also considered the implementation policy and the legal framework on pricing water in Greece in line with Article 9 of the Water Framework Directive. The findings reveal that there are considerable problems and delays in its implementation and that the Greek legislation hasn't yet delivered the main objectives of costs recovery.

Finally, for studying the pricing policy in Greece, concerning households, we studied the operation of water services and water providers of some Municipal Enterprises for Water Supply and Sewage all over Greece (Source <http://edeya.gr/>, Hellenic Association of Municipal Enterprises for Water Supply and Sewerage) in such a way as to have an overall picture of each region of Greece.

Results and discussion

In Greece the needs of the inhabitants of the water were served by natural springs, wells and fountains, which were located in public places and water distribution was achieved by the construction of basic infrastructure such as the aqueducts (Lambrou, 2002). Water-related issues were governed by the old customary law at local level and by the imposition of various forms of taxation to cover water costs. These gaps in law helped to include specific provisions in the Constitution of 1911, which also concerned water resources.

These are the provisions of the second paragraph of Article 17, which refers to the right to property, which are as follows:

“Special Laws regulate the ownership and dispositions of mines, archaeological treasures and spa and running waters”.

Despite the important content of this paragraph for the country's wealth-producing sources, there is no element in this provision regarding its proposal to be included in the Constitution. The provisions of this paragraph exclude from the safeguards to ensure the right of ownership of the first paragraph of Art. 17 any specific sources of wealth by imposing the regulation of their ownership by "special laws". The great importance of the second paragraph of Article 17 is that, for the first time, by constitutional provision, it imposes a special ownership regime on spa and flowing waters (Pararas, 1982). Even how these are issues of special nature, for which the state has an increased interest due to their special value for the society, the economy and the cultural heritage of the country (Dagtoglou, 1984). Moreover, the reference to the regulation of these issues with "special laws" is very important for the management of the elements mentioned in art. 17 - and especially on the water ownership status - which is the subject of this study.

After the 1911 Constitution, all the Greek constitutions not only preserved their specific provisions but also added other elements as well. Specifically in the Constitution of 1927, Art. 19, para. 2 "Groundwater", in the Constitution of 1952, Art. 17, new par.: "Also by law are regulated the ownership of fish farming and management of lagoons and large lakes." In the Constitution of 1968/1973, art. 21, paragraphs 5 and 6 repeat the provisions of the Constitution of 1952, except for the third paragraph on fish farming, on the ground that "... exploitation of such property may also be conducted for other purposes." (Psarou, 1969).

In the Constitution of 1975 for the first time these provisions are removed from the provisions on property protection and are included in a new separate article, Article 18, which is one of the most extensive articles of the Greek Constitution. More specifically, paragraphs 1 and 2 of Art. 18, read as follows:

*“1. Special laws regulate the ownership and disposal of mines, caves, archaeological sites and treasures, spa, running and underground water and generally the underground wealth.
2. Laws are governing the ownership and exploitation and management of lagoons and large lakes, as well as the general disposal of the areas resulting from their drainage.” (The underlined provisions are the new ones added with the Constitution of 1975).*

New dimension to the provisions of paragraphs 1 and 2 of Art. 18 undoubtedly give the provisions of paragraph 1 of the new Article 24 of the Constitution for the Protection of the Environment (Papadimitriou 1994), as revised in 2001 and instituted the "ecological constitution" (Venizelos 2002), as it is the first time that a constitutional provision provides for general intervention by the State on the natural and cultural environment. The provisions of the first paragraph of Art. 24, which are directly related to the issue of water resources and the discussions in particular regarding the provisions of

paragraph 1, in the E' Review Chamber, are of great interest, since they mentioned among the environment elements which should be mentioned in the first paragraph of Art. 24 and the waters (Subcommittee of the Constitution 1975). Although the explicit reference to water protection in general has not been included in the new provision, this is clear from the relevant discussions in the Review Parliament. The revisions to the Constitutions of 1975, 2001 and 2008 did not also bring about changes to the Article 18 provision, which was restored to the agenda of the provisions under review in the new debate on the revision of the Constitution nowadays.

Law 3199/2003 on "Water Protection and Management – Harmonization with Directive 2000/60/EC of the European Parliament and the Council of 23rd October 2000" was the first attempt by the Greek legislator to transpose EU law into domestic law in the field of water management. The Law was - according to its Introductory Report - designed to establish a framework for the integrated protection and sustainable management of internal surface, transitional, coastal and groundwater. From the study of the legislative framework laid down by Law 3199/2003 and as supplemented by Presidential Decree 51/2007, we may observe that there are only general references to the Law on Cost Recovery and that Pricing - Costing will be determined later on after a decision issued by the National Commission Water. The Greek legislation (Law 3199/2003 and Presidential Decree 51/2007), did not adopt the provisions set by the European directive for the full recovery of costs and for the pricing of water. The total water cost recovery up to the adoption of legal framework in 2017 by Joint Ministerial Decision 135275 / 22.05.2017 was the sum of the prices listed below and it was conducted at four levels: Recovery from water sales, recovery from fixed consumer costs, recovery from the use of the sewerage network and finally recovery through the special fee of 80% for study construction and extension of the network (Research Team of Professor Phoebe Koundouri, Athens University of Economics and Business, 2008). Greece delayed transporting the provisions of Article 9 of the WFD for almost 7 years as the new legal framework (Joint Ministerial Decision no. 135275/22.05.2017) was adopted in 2017. The objective of the new Joint Ministerial Decision No. 135275 / 22.05.2017 on "Adoption of general rules for costing and pricing of water services, method and procedures for recovery of water services cost in its various uses" was the establishment of costing principles, pricing of water services and the determination of procedures, method and levels of cost recovery of water services in its various uses (Arnaud Reynaud 2016), and the systematic application of the provisions of Article 12 of Law 3199/2003 on cost recovery of water service and Article 8 of Presidential Decree 51/2007. In particular, this Decision seeks to:

- Incorporate the requirements of Directive 2000/60 / EC
- Cover all uses of water and all water service providers
- Recover the cost of water services flexibly and gradually as a tool to conserve water consumption
- Include environmental costs and resource costs (environmental tax) as a guarantee of sustainable use of water resources
- Refund the environmental charge received through the green fund
- Price the water on a staggered bill
- Treat water as a social good, with special care of socially vulnerable population groups
- Establish measures for continuous monitoring a gradual improvement of water services in social interest.

Only a few months after adoption of new institutional framework it would be premature to include some observations in the present study on whether or not to achieve the full cost recovery of water services on the basis of provisions of Directive 2000/60. However, the new Joint Ministerial Decision excludes from its scope of application any water services for the production of hydropower and it is not clear which is the meaning of "other bodies supplying water to the final users" in the article of Water Service Providers as these are provided for in Articles 3 (1) and 8 (3) of Joint Ministerial Decision. Greece's water price policy should be designed on the principles of economic efficiency, equity, affordability and environmental effectiveness (OECD (2003), and the provisions of Greek legal framework should be interpreted in conjunction with both Greek Constitutional provisions on the protection of water resources and the recent Decision by Council of State no. 1906/2014, which has judged that:

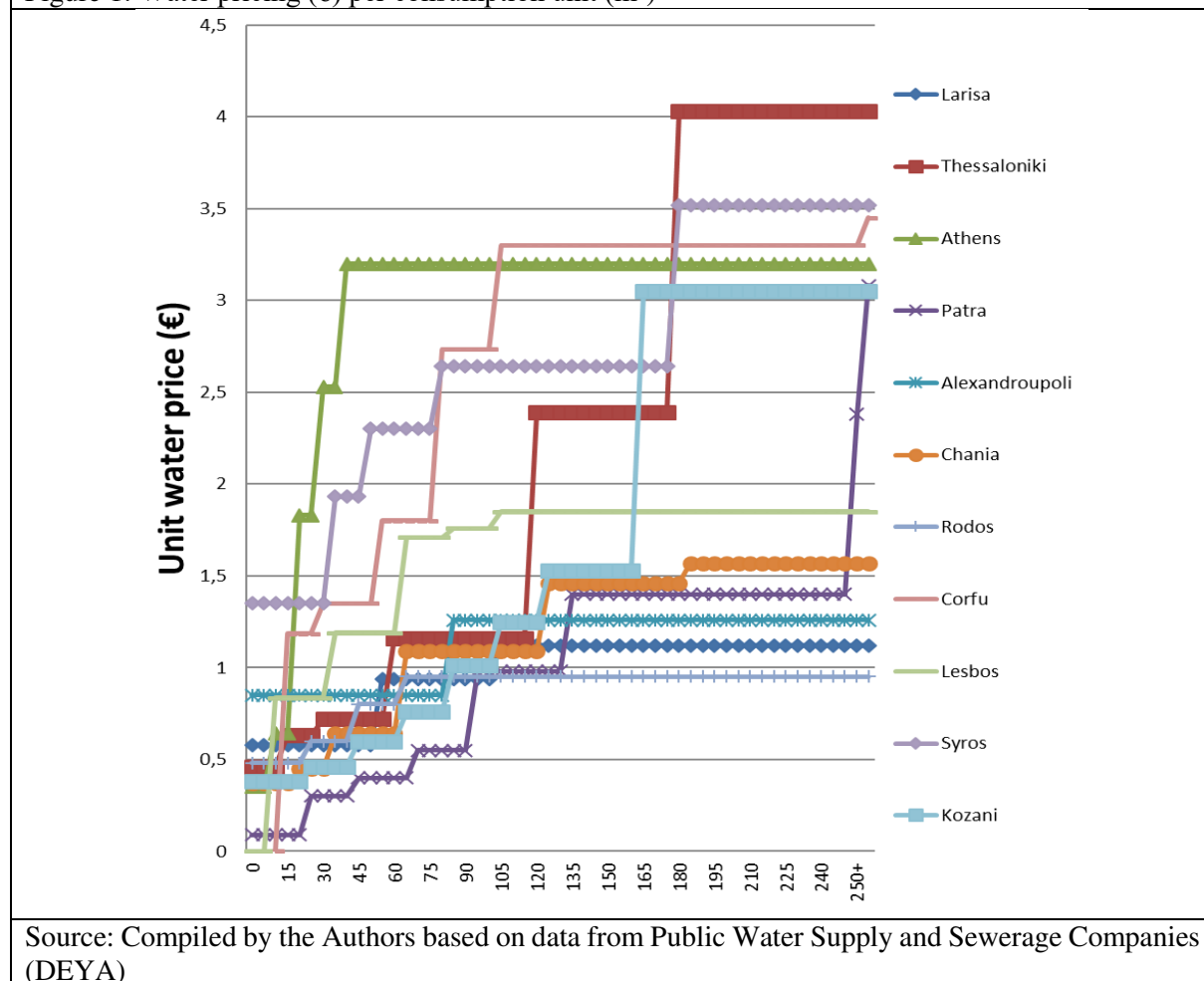
"...The provision of services of general interest, such as water supply and sewerage, is not an activity inseparable from the core of state power. In the contested act, EYDAP is privatized not only by type but also in essence, by virtue of its transformation into a private enterprise, following the secession of the

Greek State from the majority of the company's share capital, in violation of Articles 5 and 21 (3) of the Constitution.»

The main water and sewerage operators in Greece are the Public Water Supply and Sewerage Companies (DEYA) that have been established throughout the Greek Territory. There are 127 Municipal Enterprises for Water Supply and Sewage all over Greece (Source <http://edeya.gr/> HELLENIC ASSOCIATION OF MUNICIPAL ENTERPRISES FOR WATER SUPPLY AND SEWERAGE). In this study, and for practical reasons, some Municipal Enterprises for Water Supply and Sewage of particular cities were selected for studying the pricing policy they are pursuing, but in such a way as to have an overall picture of each region of Greece. More specifically, from the region of Eastern Macedonia the Municipal Enterprise for Water Supply and Sewage of the city of Alexandroupolis was chosen, the city of Thessaloniki was selected from Central Macedonia, Kozani was selected from Western Macedonia, Corfu from the Ionian Sea; Syros, Lesbos, and Rhodes from the Aegean Sea, and Athens, Chania and Patras were selected from the other geographic places.

It is worth noting that pricing and prices given, are exclusively concerning households, not public or private enterprises. Every Municipal Enterprise for Water Supply and Sewage in each area follows its own financial and pricing policy and we may often observe that in large cities they follow different prices for charging in different municipalities or settlements, even if they fall under the same Municipal Enterprise for Water Supply and Sewage. Moreover, this study did not include discounting policies that Municipal Enterprises for Water Supply and Sewage may set out for vulnerable and sensitive social groups, people with disabilities, households with many children, most deprived persons or people within the limits of extreme economic deprivation.

Figure 1: Water pricing (€) per consumption unit (m^3)



The figures used in Figure 1 were drawn from the Municipal Enterprises for Water Supply and Sewage each time of the relevant city and concern water prices depending on the quantity consumed. The

currency unit is the euro (€) and the water metric unit is in cubic meters (m³). In Chart x2 we may observe that in the small quantities of water consumption (from 0 to 45 m³) the highest price of water per unit of consumption is Syros (1.35 € / m³), while Patras has the lowest (0.09 € / m³). At the average consumption levels (from 60 to 160 m³), Corfu (3.3 € / m³), Athens (3.2 € / m³), Syros (2.64 € / m³) and Thessaloniki (2.39 € / m³) have got the highest prices. At high consumption (from 160 to 250 m³ and above), Thessaloniki (4.03 € / m³) is the first to come, followed by Syros (3.52 € / m³) and finally the cycle is closed with the highest prices by Corfu (3.3 € / m³) and Athens (3.2 € / m³). By studying all the charges in every city, we could conclude that the most economically friendly cities for the consumer in terms of water pricing are Patras, Larissa and Rhodes. On the contrary, the most aggravating are Athens, Thessaloniki, which is reasonable, since they are the capital and co-capital of Greece respectively, as well as Corfu and Syros.

Table 1 shows the sewerage fees, monthly fixed charges and the various charges that each area has set out. It is clear from the chart x2 and from the table x3 that each region follows its own pricing policy. With regard to the city sanitation fee and the comparison between the two cities, we may notice that in Kozani (85% of the total value of the water) exists the highest one, while Patras and Corfu got the cheapest (30% of total water value). As far as the various charges are concerned, we cannot draw conclusions, for the reason that there are many different policies. Finally, we notice that Syros has the highest monthly fee, while there are cities such as Corfu, Chania and Larissa, which have not imposed any monthly fixed fee.

Table 1

CITY	DRAINAGE CHARGES	VARIOUS CHARGES	MONTHLY FIXED COST
LARISA	0.1 €/m ³	0,30 €/m ³	-
THESSALONIKI	80% Total Water Value	0.07 €/m ³	2
ATHENS	75% Total Water Value		1
PATRA	30% Total Water Value	0,20 €/m ³	6
ALEXANDROUPOLI	55% Total Water Value	1	0,21€/m ³ first 90m ³
CHANIA	75% Total Water Value	18.9	-
RODOS	-	-	2.6
CORFU	30% Total Water Value	1.5	-
LESBOS	40% Total Water Value	-	5.5
SYROS	20% Total Water Value +20% Mixed Charge Surface	30% Total Water Value	10
KOZANI	85% Total Water Value	80% Total Water Value	4.75

Source: Compiled by the Authors based on data from Public Water Supply and Sewerage Companies (DEYA)

Conclusion

Much progress has been made in water protection in Europe, but after almost 30 years of European water legislation, the demand for further action is expressed, in order to conserve adequate supplies of a resource for which demand is continuously increasing. Nowadays, based on the principles of sustainable water development and management, the practice followed by the states is to formulate policies for demand management rather than water resources supply. Demand management can be achieved through a series of actions relating to the minimization of transport losses, water reuse, and efficient use of water resources (Bithas K. Stoforos Ch., 2006).

In Greece even if there was a constitution provision since 1911, there wasn't any integrated water protection policy, and there was a significant delay in transportation and implementation of Eu water policy and the goals and standards in the recovery of costs for water services. According to the "World of Compliance" typology, Greece belongs partly to the world of "transportation neglect," as it has major deficiencies in the transposition in the water pricing sector. The implementation of measures on cost recovery and water pricing based on a common approach across RBDs is urgent in Greece, in order to fulfil the Article 9 requirements and to achieve economic sustainability. The findings of the study also revealed that water services and water providers do not operate in a homogeneous manner in a national context, and in some cases Municipal Enterprises for Water Supply and Sewage follow a unified and organized pricing system, others do not discriminate neither between costs or service (water, sewerage), nor use (water supply, irrigation, etc.) and when the Municipality does not have an enterprise but is operating water supply services itself, many elements of the financial cost are not calculated or these are

confused with other services it provides. Moreover, environmental costs are not included in the final invoices, as they should according to the latest Water Framework Directive of the European Union.

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- I. Larissa <http://www.deyal.gr/plirofories/timi-nerou.html>
- II. Thessaloniki <http://www.eyath.gr/swift.jsp?CMCCode=060202>
- III. Athens <https://www.eydap.gr/CustomerSupport/normalrates/> (Download file)
- IV. Patras <https://www.deyap.gr/customer-service/pricing-policy2015>
- V. Alexandroupolis <http://www.deyaalex.gr/oikonomika-menou/timologia-telh-menou.html>
- VI. Crete
 - Agios Nikolaos <http://www.deyaan.gr/timologiaki-politiki.html>
 - Heraklion does not have
 - Chania http://www.deyax.org.gr/index.php?option=com_content&view=article&id=206&Itemid=533
- VII. Rhodes <http://www.deyar.gr/pagebuilder.asp?pageID=44>
- VIII. Ioannina does not have <http://www.deyai.gr/>
- IX. Corfu <https://www.deyaker.gr/%CE%B1%CE%BD%CE%B1%CE%BA%CE%BF%CE%B9%CE%BD%CF%8E%CF%83%EC%B5%CE%B9%CF%82%CF%84%CE%B9%CE%BC%CE%BF%CE%BB%CF%8C%CE%B3%CE%B9%CE%B1.html>
- X. Syros <http://www.deyae.gr/permalink/3012.html>
- XI. Lesvos <https://www.deyamyth.gr/timologiaki-politiki>
- XII. Sparta does not have it
- XIII. Kozani http://www.deyakozanis.gr/?page_id=10