



**EUROPEAN ASSOCIATION
OF PUBLIC WATER OPERATORS**

**THE ROLE OF WATER PRICING AS A KEY
ELEMENT OF SUSTAINABLE WATER
MANAGEMENT**

4 December 2014

*This report has been elaborated by the APE
Working Group 1 on Water Pricing and Asset
Management*

ABOUT AQUA PUBLICA EUROPEA

Aqua Publica Europea (APE) is the European Association of Public Water Operators. It brings together 100% publicly owned water and sanitation services, and their national and regional associations. Our mission is to promote public water-management at both European and international level.

Overall, APE members provide water and sanitation services to over 70 million Europeans, covering the rich and varied landscape of our continent - from the North Sea to the Mediterranean, and from capital cities to remote rural areas.

- APE is a platform, facilitating knowledge exchange and joint projects among members to improve performance.
- APE is a forum for public operators to meet and discuss water policy issues with the objective of contributing to international policy-making in the water sector.
- APE is a catalyst, supporting the development of the international water community by promoting a dialogue between public water operators, the business sector, the academic world, and public institutions.

EXECUTIVE SUMMARY

THE CHALLENGES AHEAD

The European Commission's Blueprint to Safeguard Europe's Water Resources highlights worrying trends regarding the increase of water stress phenomena in Europe. Technological and industrial development may lead to new and unforeseen risks with regard to water safety. What is more, in many contexts, investment capacity needs to rise in order to ensure adequate renewal of assets and to tackle emerging threats.

Water pricing is considered to be a key to signal to users the relative scarcity of water, to achieve a more balanced contribution to cost recovery of different societal uses, and to ensure the financial sustainability of water services.

However, the supposed correlation between increased water tariffs and decreased water consumption is questionable. Any increase in water tariffs is likely to affect low-income households proportionally more than well-off households, because of low-demand elasticity. This supposed correlation, combined with an enduring economic crisis, is creating water affordability problems in several European countries, as demonstrated by the significant public response to the European Citizens Initiative Right2Water.

In addition, due to the particular characteristics of water resources (i.e. the fact that water constitutes a natural monopoly and is essential for life), the financing of investments may create equity issues across generations. Finally, one should not forget that identifying the right set of instruments to tackle current and future challenges is complicated by the fact that management of water resources is strongly influenced by local conditions.

Against this background, public water operators are persuaded that effective governance and place-based approaches are needed —along with water pricing— to reconcile the objectives of the protection of water resources, affordability, and financial sustainability.

OUR PROPOSALS

Since water price cannot be determined through normal competitive market mechanisms, other indicators need to be employed to determine relative levels of water scarcity and depletion. Without considering the methodological problems of calculating resource and environmental costs, APE therefore looks forward to the publication of the new *Water Exploitation Index +* in order to gain a more accurate understanding of water stress levels in Europe.

More generally, we observe that domestic users are still disproportionately charged, compared with agriculture and industry. More effort is needed from all stakeholders to achieve more effective implementation of the 'polluter pays' principle. In this sense, the European Commission's efforts to achieve a better alignment of objectives between water and other policy domains (in particular agriculture) are welcome and need to be further strengthened.



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Nevertheless, potential conflicts arising from competing water needs cannot always be solved only through water pricing. Drawing on their direct experience, our members consider that place-based governance mechanisms based on stakeholders' engagement and transparency can also play a key role in successfully implementing consensual 'control at source' approaches and in identifying the most cost-effective solutions. The importance of these approaches needs to be better recognised.

Concerning water affordability, APE members are convinced that those issues are better tackled through socially targeted measures such as income support. In cases where income support mechanisms are not available, water solidarity mechanisms based on the water bill can represent a valid alternative. The EU could promote a wider debate on different approaches to ensuring the right to water, which would also help raise Member States' awareness of this issue.

In addition, water affordability issues may be tackled by ensuring that all economic resources generated from the water-management cycle are reinvested for the improvement of water quality, infrastructure, and services. Under no circumstances should water be a source of finance for other policies, be it through taxes or other means.

Furthermore, decisions regarding the enforcement of stricter quality standards should always be based on solid scientific evidence and a cost-benefit analysis, to avoid disproportionate intervention that would eventually lead to higher water prices. The same can be said for investment in new technologies; innovation is an important factor in tackling water challenges but should remain a means rather than an end.

Finally, affordability issues must be reconciled with investment needs. Our members generally consider that water tariffs should aim to recover both management and financial costs. Nevertheless, Member States should be free to finance some parts of the water cycle cost, especially as regards investment, through general taxation. Also, more effort is needed from national and local institutions to remove the institutional bottlenecks and uncertainties that hamper public water operators' access to long-term loans.

Public risk-sharing and counter-guarantee instruments to enhance investments in water infrastructure should be further developed. More generally, the investment-related challenges that lie ahead can only be tackled with active support from citizens and users; transparency in water pricing and in the deployment of financial resources play a crucial role in raising users' awareness and support for investment decisions.

To conclude, APE members are persuaded that water pricing can play an important role in tackling the multiple challenges that lie ahead if coupled with a sound governance system based on subsidiarity. EU Institutions should provide a consistent legislative framework, setting general objectives and providing guidelines. Member States need to accelerate the pace of implementation, retaining the necessary freedom to define the best way to achieve the general principles under EU law. National and regional governments and regulators should provide an adequate institutional framework to facilitate co-ordination among the various stakeholders who have an impact on the water cycle.

THE ROLE OF WATER PRICING AS A KEY ELEMENT OF SUSTAINABLE WATER MANAGEMENT

Foreword

Definition of water services : Following the conclusions of the European Court of Justice in the Affair C-525/12 from 11th September 2014, the water services considered in this document should be understood as defined in Article 2, 38 (c) of the Water Framework Directive (WFD) sensu stricto.

CHALLENGES PRESENTED BY THE EVIDENCE

The importance of accurate information on water scarcity

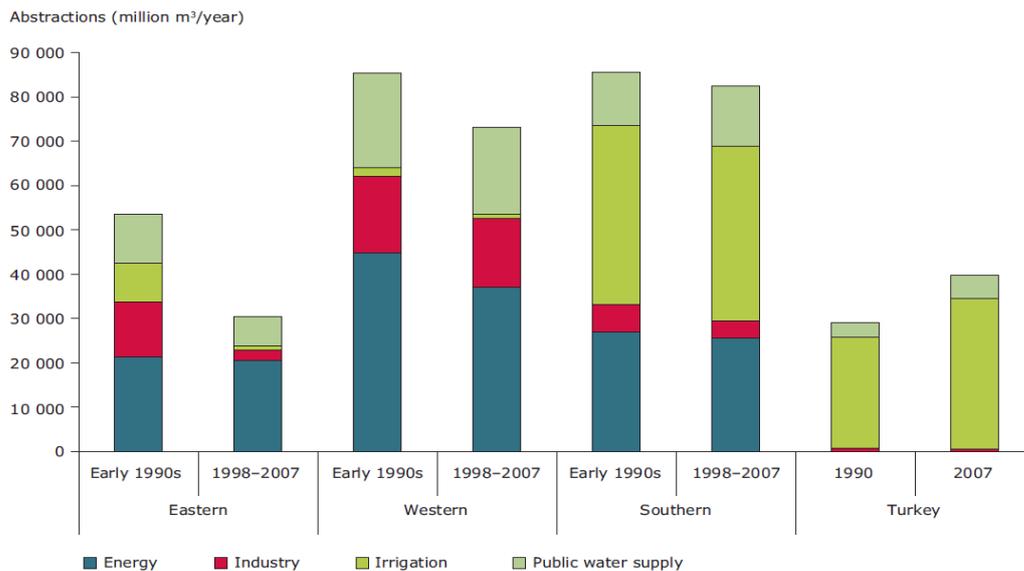
The European Commission's *Blueprint to Safeguard Europe's Water Resources* highlights worrying trends regarding an increase in water scarcity and stress in the coming decades. In this framework, water efficiency measures and, in particular, water pricing policies are indentified as the key tool to tackle these risks.

Whether pricing alone can solve potential conflicts on alternative water allocation needs is questionable, as we will see below. However, even without considering these limits, in order for the price of water to send the right signal to users, there must be robust information on the relative levels of water scarcity and stress for each river basin.

Unfortunately, the current indicators seem unable to give an accurate view of levels of water stress in Europe. Aqua Publica Europea (APE) expects the Water Exploitation Index + (WEI+) to give a better picture of the level of water stress in Europe.

The need for a more balanced contribution to water protection efforts from all societal uses

The 2010 European Environmental Agency (EEA) report on *European Environment dedicated to water resources* indicates that in Western Europe, drinking water supply is only responsible for 25% of the total intake of water, 22% in Eastern Europe, and 16% in southern Europe. Moreover, this pressure has decreased despite the growth of both population and consumption standard levels during this period.



Source: EEA CSI 018 — Figure 2 Sectoral water use www.eea.europa.eu/data-and-maps/figures/water-abstractions-for-irrigation-manufacturing-industry-energy-cooling-and-public-water-supply-million-m3-year-in-early-1990s-and-the-period-1997-2005.

Looking at these figures, it is clear that water-saving issues cannot be effectively tackled by looking solely at the drinking water component. Industry, energy and especially agriculture must also increase their efforts. Given this framework, we must recognise that the application of the ‘polluter pays’ requirement is probably still unsatisfactory in most contexts.

Moreover, the internalisation of environmental and resource costs have been proving methodologically extremely difficult to realise. This is particularly true of the determination of resource cost, which is essentially an opportunity cost; indeed, it is easy to argue that the opportunity cost of providing water to people to satisfy their basic needs is, by its very nature, incommensurable.

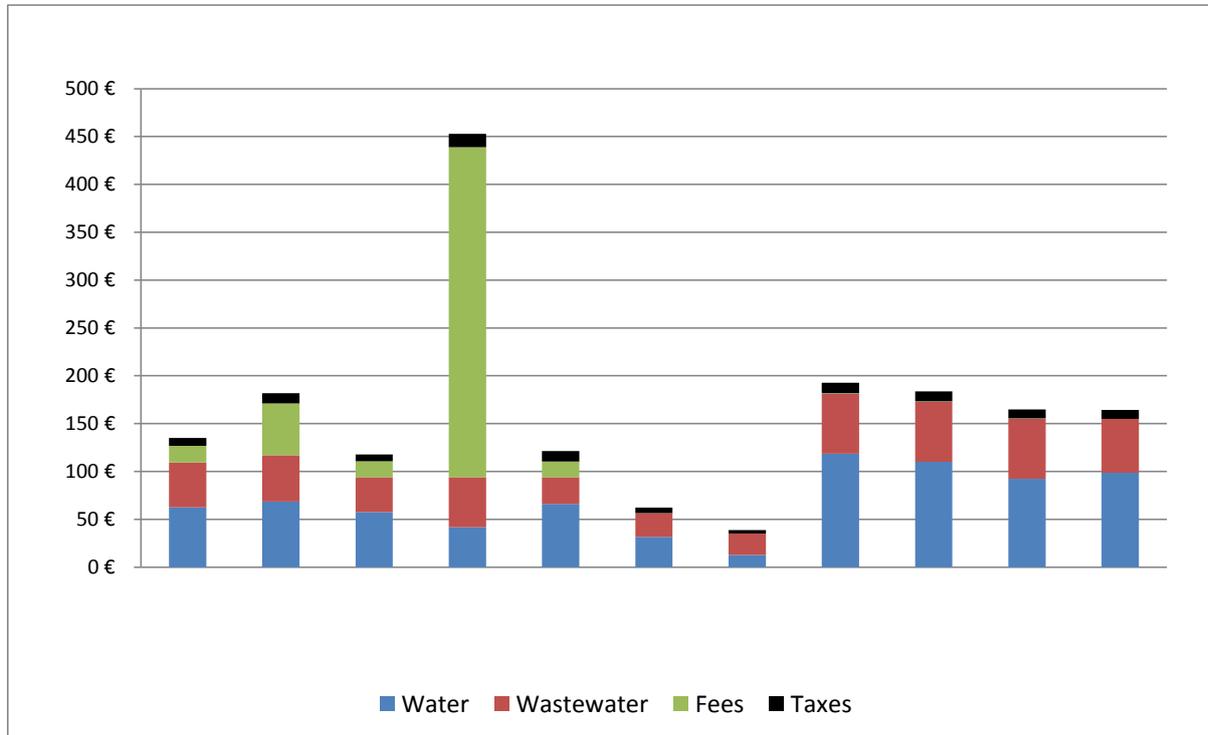
The influence of local contexts

The definition of a unique set of tools for the protection of water resources is complicated by the fact that management of water resources is strongly influenced by local conditions. This is true in general, and even more so with regard to water pricing and other economic instruments.

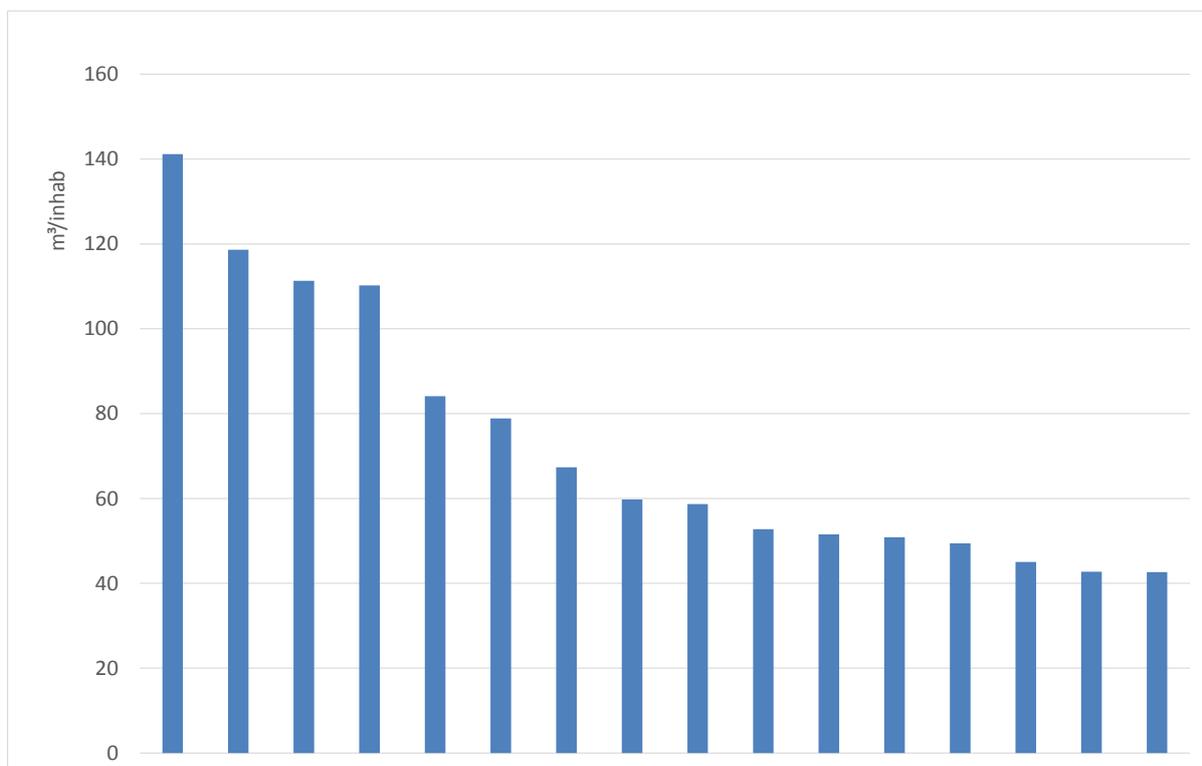
The charts below contain a comparison of water bills’ structure and other ‘contextual’ elements for different APE members. These charts clearly show how water pricing is ‘declined’ differently in different contexts and how the costs structure is influenced by a variety of contextual factors (e.g. water consumption, network density, age of infrastructures, etc.). What is more, governance structures - for instance, competencies in setting water prices and managing water-related revenues - also differ widely from one context to another, even within the same country.

On the one hand, this variability makes any comparison complicated, let alone harmonisation of pricing models. On the other hand, the expected incentivising role of water pricing for efficient resource allocation seems significantly conditioned by exogenous elements.

In other words, local conditions and aspects of governance play an important role in the functioning of water pricing. These aspects fall outside the scope of the Water Framework Directive (WFD), as the EEA report (2013) on full cost-recovery through water pricing points out.



Composition of a 40m³ bill (1 person) for different APE members.



Water consumption per inhabitant for some APE members

The limits of water pricing as a tool to reduce domestic consumption

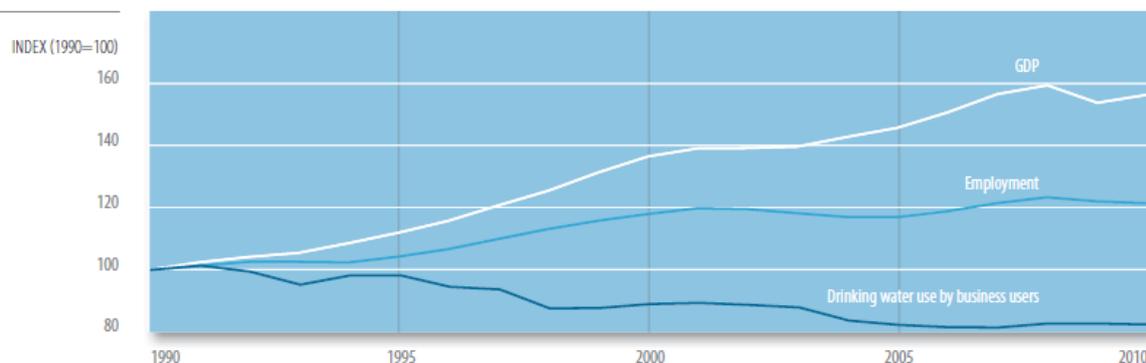
Water consumption per person in most European countries has fallen since the 1990sⁱ. Three main factors help explain this decrease:

- Tertiarianisation of economy
- Environmental awareness
- Dissemination of water-efficient devices

For example, the price of water does not satisfactorily explain the decrease in water consumption in countries such as The Netherlands, where total water consumption is falling despite a decrease in tariffs. In Germany, where the price of water is relatively stable, consumption is also decreasing quite quickly. In Paris, there has been a reduction of around 7% in the last six years, despite an 8% decrease in water price in 2008. The recent EEA (2013) report on *Full cost-recovery through water pricing*ⁱⁱ also serves as a reminder that the value of domestic price elasticity for water demand is quite low on average (between 0.1 and 0.4).

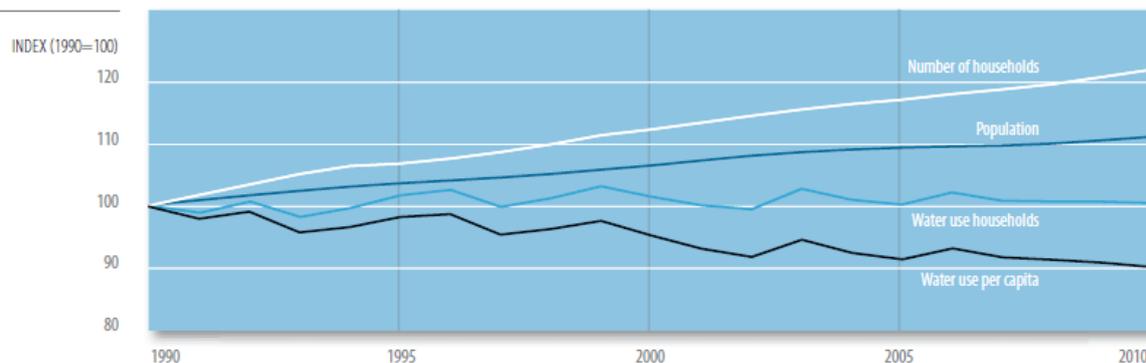
Furthermore, in large cities, in which the vast majority of the population live and work in apartment buildings, where buildings are provided with a single water meter the intended price signals of water tariffs are undoubtedly weak, if not completely ineffective.

Figure 1.13 Drinking water use by business users vs. economic developments



SOURCE: Statistics Netherlands

Figure 1.14 Drinking water use by households vs. growth of population



SOURCE: Statistics Netherlands



Source: Reflections on performance (benchmarking in the Dutch drinking water sector)

The apparent correlation between high tariffs and low consumption, illustrated for instance in the Centre for European Policy Studies (CEPS) reportⁱⁱⁱ, is not necessarily linked to price-elasticity of water demand, but could be caused by the high incidence of fixed costs, such as investment in capacity and maintenance, labour, etc., both in drinking water supply and in sanitation. Decreasing demand raises the average cost for supplying each cubic meter.

→ One could argue that the causal relation needs to be inverted: water consumption is not decreasing because of higher prices, but higher prices are necessary to fulfil the full-cost recovery principle in a context of declining water consumption.

What is more, as pointed out by the EEA (2013, p. 22) report, there could be a trade-off between the use of water pricing as incentive and cost-recovery. Indeed, higher prices may induce some users to find alternative sources, legal or illegal, and consequently “this not only affects the rate of cost recovery for the public (collective) water service investments, but it may also lead to a less efficient use of water resources”.

To conclude, there is no strong evidence in Europe that a higher tariff for drinking water would result in more water savings. Consequently, as the EEA (2013) report argues, “Using prices as a tool for water allocation only makes sense if two conditions are met: short run marginal costs are high and price elasticity of demand for water is high. Both these conditions are the exception rather than the rule in water markets”.

Growing concerns about water affordability

If, on the one hand, it is true that relatively lower water prices do not *per se* ensure greater equity, on the other hand any incremental increase in water price will affect low-income households proportionally more than well-off households. As we all know, water consumption needs cannot easily be compressed without significantly affecting the quality of biological and social life (which is reflected in the low elasticity of water demand). This is even more important in countries or regions with low levels of water use, as households cannot respond to rising prices by lowering their water consumption since it is already very low. What is more, since the beginning of the economic crisis in 2008, APE members have observed an increasing number of households facing water affordability problems.

As the recent EEA (2013) report also points out, there is a tension between social objectives and the need for cost recovery. Many argue that water affordability issues could be better addressed by targeted social measures to avoid potential distortions in water allocation. Even assuming this is theoretically correct, we must recognise that in many national contexts, water poverty issues are not adequately tackled by the existing welfare system, while affordability is not addressed by EU legislation. Affordability issues thus deserve greater attention, and more reflection is needed to find new approaches to enable a reconciliation of financial sustainability and affordability imperatives. We are therefore pleased to see that, in its response to the European Citizens' Initiative (ECI), the European Commission also focuses on water-poverty problems.

Renewing drinking water and sanitation networks: the financing iceberg

In most large European cities, water supply and sanitation networks were put in place at the end of the late 19th century. These pipes need to be renewed to prevent high levels of leakage and unforeseen service breakdowns. This presents a significant challenge. In some cities, work done in the 19th century must now be undertaken in an entirely different context, and with higher consumer expectations regarding environmental protection and service quality. This is the key challenge for the next year for water and waste-water operators and must be addressed.

In contrast to the situation in the 19th century, today's European public water services are mostly operated by a distinct legal entity, either partially or fully public owned. One of the main drivers for this consists in the de-budgetisation of water operations under SEC constraints. This has led most operators to adopt the accounting rules of classic commercial entities, with profit-and-loss (P&L) and balance sheet accounts. In so doing, the focus of tariff policies has globally been put on a P&L break-even. However, achieving this goal has not enabled operators to generate sufficient financial margins to self-support recurring infrastructure renewals or upgrades. These investments, also required to fulfil EU obligations regarding, for example lead eradication for drinking water, waste-water treatment, etc., are therefore partially financed through additional financial indebtedness. Over the past few years, the financial debt of the water operators has dramatically increased and will continue to do so over the medium term. Even when allowed by the European Investment Bank (EIB), this additional indebtedness generates increased financial charges, affecting both current and future generations.



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Furthermore, we observe that water is often used as a source of finance for other policies through various mechanisms, such as:

- diverse costs charged by authorities at municipal, regional, and national levels for different reasons, without (any) regard to the effective charge incurred by those authorities linked to the activities of water-cycle management. Examples include taxes for the occupation of the public domain, and charges for compulsory use of IT platforms dedicated to public or private operators who are active in the public domain, etc.).

- VAT, which is either not reimbursable for investments realised directly by public authorities (e.g. when municipalities or regions directly provide the service, without distinct legal entities), or must be paid on water bills by domestic end-users (business users can be reimbursed) when a legal entity, even fully public owned, is acting as water operator. At the European level, net VAT collected on water activities represents a considerable amount of resources; these are finally integrated in the national budgets and are rarely redirected toward water activities.

To conclude, the financing of water operations and assets renewal is a complex matter, entailing equity issues and trade-offs across different social (income) groups, and across generations. In the light of this, and as the European association of publicly owned water operators, we cannot refrain from noting that increasing water prices to boost operational margins to attract more private investment also has powerful redistributive effects. This does not seem a particularly sound approach even from a strict economic theory point of view, precisely because of the monopolistic nature of water provision. Since water price cannot be determined through a competitive dynamic, the rate of return for investments can be determined only to a limited extent by market mechanisms and competition. (How to fix an adequate and fair rate of return when even the risk is not clearly determined?) This is clearly problematic, even when we leave side the ethical questions raised by the opportunity to make profit on a public good that is essential for life.



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APE PROPOSALS FOR MAKING WATER PRICING A TOOL FOR SUSTAINABLE DEVELOPMENT

The importance of coupling water pricing with good governance

We observe that there is a trend in Europe for an improved and intensified application of the full-cost recovery principle. This should be encouraged, as full-cost recovery represents a crucial condition both to safeguard water resources and to ensure an equitable distribution of the costs this safeguard entails. Given this framework, we think that appropriate water pricing and incentives are important measures that signal to different categories of users issues of water depletion, and to promote an efficient use of the resource. In these circumstances, the EU Commission, national governments and regulators should increase their efforts to ensure full implementation of the 'polluter pays' principle, as water pricing for industries, including energy and agriculture, are often disconnected from the reality of the cost generated by water usage.

However, as we have seen above, the internalisation of environmental and resource costs may prove to be methodologically difficult, and there may be a trade-off between economic incentives and cost recovery. Moreover, the local context exercises a strong influence on management of water resources. APE's members believe that Member States and local authorities should retain their autonomy to decide the best way forward, and the best combination of instruments to achieve the cost-recovery objective.

We also believe that, precisely because water is not a commercial product like others, water pricing alone cannot solve all the potential conflicts related to allocation of water resources to meet different needs. Aspects of governance also play a crucial role and deserve greater attention.

On the one hand, the effectiveness of economic instruments is very much dependent on the consistency of the institutional set-up, especially at local level, and on coherence with other policy areas.

On the other hand, upstream and control-at-source approaches, based on effective stakeholder engagement and transparency, are essential to identify and then implement the most cost-effective solutions to water pollution and depletion problems. Over the last years, these approaches have been successfully implemented in many different contexts, including several initiatives carried out by APE members; some comparative and 'lessons learnt' work could be initiated in this domain as another way to promote diffusion of these approaches.

Water should only pay water

Considering the immanent link between water and life, the major challenges that lie ahead, affordability issues, and the significant investment needs that characterise the water domain, APE members strongly urge reinvestment of all revenues generated from the water-management cycle to improve water quality, infrastructures, and services.

As a corollary, APE members strongly believe that water should in no way become a source of funding for other policies. We thus invite the EU Commission to suggest or encourage Member States to adopt a 0% VAT rate on water services to end-users, and promote this measure as an appropriate instrument to achieve EU objectives of the WFD and related regulations.



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Also, as water services are mainly provided under a monopoly and, consequently, price and margins are not determined by competitive market dynamics, it should not be permitted that profits exceeding an adequate level of return (however this is defined) are paid out to shareholders.

Easing access to loans for investment in the water infrastructures

APE is in favour of the full-cost recovery principle, including operating and investment costs. The 3Ts (Transfers, Taxes, Tariffs) approach should be the operational tool to realise this principle.

In this framework, APE members are persuaded that European Regions should have the ability to use Structural Funds to finance investment in water infrastructure. not only in less developed areas but also across all Europe. Also, Member States should be left free to finance some parts of the water cycle cost, especially investment in infrastructure, through general taxation. Universal access to water and sanitation services is an essential condition for human and economic development. So, if on the one hand there is the need to internalise better negative externalities, on the other hand positive externalities should also be taken into account as regards investment decisions. It can therefore be economically sound, and should be considered a legitimate political option, to allow access to finance for investment in the water sector at a preferential interest rate.

More generally, even when financial charges are completely recovered through water pricing, all too often APE water operators encounter difficulties in accessing loans from the banking system due to institutional uncertainties or inconsistency. We call on all political institutions at every relevant level (European, national and local) to increase their efforts to ensure that institutional conditions are put in place that are conducive to public water operators accessing long-term loans. In this framework, public risk-sharing and counter-guarantee instruments to enhance investments in water infrastructures should then be further developed.

APE members recognise the important contribution already made by the EIB and are persuaded that its role will continue to be crucial in the future. Specific ~~and~~ water-target product could be further developed and refined in the future.

Finally, we are persuaded that the investment-related challenges that lie ahead can only be tackled with the active support of citizens and users. Transparency in water pricing and the employment of financial resources play a crucial role in raising users' awareness, consequently increasing ownership of decisions and building a consensus around investment choice.

In this framework, several APE members have been successfully experimenting with a participatory governance approach to involve users' associations and civil society organisations in price-related decision-making processes. These approaches deserve greater attention and support from institutions.

Making the right to water becoming a reality

Since the beginning of the financial crisis, APE's members have witnessed an increasing number of households facing difficulties in paying their water bill.

Water affordability is becoming a growing political concern in many European countries, as demonstrated by new and specific political interventions in this domain such as the Brottes law in

France, and by an increasing number of initiatives from citizens' organisations - not least the European Citizen Initiative, *Right2Water*). In this framework, the Commission's response to the ECI acknowledging that there is an affordability issue in Europe is all the more welcome. As we have pointed out, the absence of any reference to water-affordability issues represented was one of the weakest elements of the EC's *Blueprint*.

It is often argued that water poverty problems need to be tackled by the general social security system, in order to avoid any potential distortive effect on water allocation. Assuming that this is correct, we must also recognise that not all Member States have targeted measures in place to tackle water affordability problems. Access to water represents a crucial problem that demands an immediate response.

APE members are committed to promoting all possible measures to ensure a minimum amount of water to people in need. We are persuaded that water solidarity mechanisms based on the water bill can also represent a valid alternative to social security measures, where these do not exist, without creating any significant distortion¹.

Here are some examples of the measures some APE members have put in place to ensure the right to water for all.

In France:

The water component of the 'Housing Support' scheme: housing support is a welfare measure that financially supports families facing economic difficulties. In 2012, 44,000 families were supported, with an estimated average of 70€ per family helped to meet water charges.

The Solidarity Fund for Housing²: this is another measures addressing households in severe need and unable to pay their bills. The water operators provided 500,000 € to the fund; around 6,000 households have benefited with an estimated contribution per household of 80€.

In Paris, there is a series of complementary measures: a network of public fountains, limited recourse to cut off from water provision even for squatted houses, and the installation of water-saving devices in social housing. In 2012, Eau de Paris doubled its contribution to their solidarity fund.

In Belgium:

Another interesting example is the Walloon Region of Belgium.

A small fraction of the water bill paid by each household (precisely 1.25 cent per cubic meter) finances a solidarity fund. People who face economic difficulties can ask for a reimbursement of part of the water bill via the communal welfare system; the reimbursement is paid out of this water solidarity fund.

¹ Solidarity mechanism do not include, from our point of view, a proportional tariffing based on the amount of water consumed where the first cubic meters are free. In fact, not charging the first cubic meters consumed is not an equity measure, since high-revenue households would also benefit. The inefficacy of this system was demonstrated by the Flemish experience of 15 m³/inhabitant for free since the 1990s. This process has led to increased administrative costs and the original target of helping the poorest has not been met. In any case, the effectiveness of this measure – like all economic instruments – depends very much on local contexts and how information systems are structured.



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The fund has 2 million euros and 7,000 households were supported in 2012. In the same year, for the first time the water solidarity fund in Wallonia was not enough to cover all requests for assistance. The Walloon Government has therefore decided to double this contribution.

In Italy:

A solidarity fund has been set up by regional authorities and the water operator in the Apulia region. Families with income that falls under a certain threshold can ask for partial reimbursement of their water bill. This fund was originally created for energy bills and extended this year to water, precisely for the growing number of unpaid bills.

Other examples:

In Seville, regional water operators are proposing a mechanism to ensure a minimum essential amount of water. This will be funded through revenues generated by management of the water cycle, without financial transfer from the region or other public budget sources.

IN CONCLUSION

To conclude, while full-cost recovery is and should remain a guiding principle, it is unlikely that water pricing alone can reconcile the “conflicting objectives of cost recovery, 'adequate' incentives and affordability”, as the EEA report points out. Good governance, transparency, and a conducive institutional framework for investment also represent key conditions for tackling the challenges ahead.

ⁱ See for examples :

ATT, BDEW, DBVW, DVGW, DWA and VKU (2012), Profile of the German water sector 2011, WVGW.

Poquet G. et Maresca B. (2006), la consommation d'eau baisse dans les grandes villes européennes, CREDOC Consommation et Modes de vie n°192 – avril 2006.

Souriau J. (2011), Les principaux déterminants de la consommation d'eau à Paris : un état des lieux, CIRED, Eau de Paris, Eau&3E.

Vewin (2012), Dutch Drinking Water Statistics 2012: The water cycle from source to tap.

ⁱⁱ EEA (2013), Assessment of cost recovery through water pricing, EEA Technical Report No16/2013

ⁱⁱⁱ CEPS (2012), Which economic model for a water-efficient Europe? CEPS, Bruxelles.