

Discussion Highlights: Workshop on Cost Recovery

Thematic workshop on 31st May – 1st June 2022

These discussion highlights present the key messages and possible next steps mentioned during the thematic workshop.

The workshop was co-convened by the OECD and the European Commission's Directorate-General for Environment. It is part of a series aimed to facilitate the implementation of the economics of the Water Framework Directive in European Member States.

These discussion highlights may not reflect the opinion of the OECD, the European Commission or their Member States.

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Cost Recovery

Thematic workshop, 31 May – 1 June

Discussion highlights

The fourth thematic workshop of a series aimed to facilitate the implementation of the economics of the Water Framework Directive in European Member States gathered around 70 participants, including government representatives, water utilities, associations of water utilities and regulators, research institutions, NGOs and Directorate Generals (European Commission).

The workshop, co-convened by the OECD and the European Commission - DG ENV, focused on cost recovery. It aimed at:

- Exchanging experience and knowledge on water-pricing mechanisms designed to trigger efficient water uses and recover costs.
- Raising awareness of affordability issues related to cost recovery, and ways to address them.
- Identifying and disseminating good practices and emerging approaches related to efficient and innovative cost recovery mechanisms, to unlock untapped sources of revenues.
- Reflecting on cost recovery mechanisms for water management in the context of increasingly stringent environmental policies.

Speakers with diverse backgrounds shared their experiences related to cost recovery and the Water Framework Directive goals. Highlights of the discussions are provided below. The agenda, a background note and speakers' slides are available on the meeting webpage.

Key messages

Session 1: Water-pricing mechanisms

Adequate incentive pricing

- Ideally, water should pay for water and water charges or tariffs for water services should reflect all costs incurred in a single bill (price signal). In reality, tariffs do not reflect all costs (due to initial subsidies, low maintenance, opportunity cost difficult to recover, among others) and tariffs seek to achieve many and sometimes conflicting objectives (cost recovery, inclusive access, water savings...).
- Price elasticity of water uses depends on many factors (including the tariff structure, the initial price level, the time frame, the magnitude of change, the type of water use...). Water pricing should be embedded in a set of measures to achieve all its objectives, particularly water savings. Thus, water pricing is a complex tool to use as an incentive for saving water.
- While pricing can sometimes be an effective incentive to save water, reducing consumption can cause significant problems for operators. Thus, water utilities have no incentive to encourage water saving.

Addressing affordability

- Affordability problems are better addressed through targeted social measures, rather than social tariffs. First, affordability is not merely a water issue: it is essentially a poverty issue and needs to be addressed as such. Second, low tariffs usually benefit the well-off and not the poorest.

Moreover, designing effective social tariffs can be complicated; it may miss the target, especially in the absence of accurate data on household composition and revenues.

- Nonetheless, social measures are not always efficient and sometimes difficult to implement (difficulties to target and reach people, administrative costs of data access, difficult negotiations with social actors...). Furthermore, targeted social measures only apply if a robust social system is in place.
- If there is a consensus that targeted social measures are more appropriate than social tariffs, what prevents countries from recovering costs through water bills? Participants mentioned the lack of willingness to pay (which can be addressed thanks to accompanying measures, among others) and political considerations related to tariff setting (underlying the benefit of an independent economic regulator for WSS).

Depreciation methods

- Financial depreciation of existing assets is complex and methods vary across jurisdictions. The way depreciation is calculated affects tariffs and cost recovery rates. The issue is particularly topical for assets funded by EU grants.
- Each depreciation method has potential advantages and disadvantages, considering the financeability of required capital maintenance, incentives for efficient investment and allowing for affordable and equitable bills. It raises key question of how disadvantages can be lessened, with potential for consideration of hybrid options. Intergenerational equity matters.

Session 2: Efficient (innovative) cost-recovery mechanisms

- Apart from abstraction and pollution, charges on other pressures represent a very small percentage of the total funding for water management in the EU. These instruments have an untapped potential for raising additional funds for water management. A large variety of charges are implemented by countries, which would require efforts of harmonisation.
- Land value capture (LVC) is a policy approach that enables communities to recover and reinvest land value increases that result from public investment and government actions. LVC is attractive from a public finance point of view (from an efficiency and an equity perspective), but under-used in the water sector, with too little peer-learning across countries. LVC has a lot of potential for climate action, and could be applied in the water sector as water infrastructures can have a positive impact on land value. Participants mentioned examples of applications in Australia, South Korea and Morocco.

Session 3: How fit is cost recovery for the future?

- With the Zero Pollution Action Plan, the course of direction is clearly towards more stringency, driven by several environmental Directives. While it intends to minimise damage, increasing the level of stringency of environmental policy will increase costs of meeting environmental requirements for society. The magnitude of the additional cost will reflect efficiency of policy responses.
- The implications for customers of funding environmental improvements through water charges can differ significantly depending on industry structure. The costs per customer served of meeting environmental improvements can vary significantly depending on the supply circumstances. This is perhaps most obvious when the provision of services to sparsely populated areas is considered (e.g. Estonia and Lithuania), as there is a steep cost-curve associated with low-scale.
- More stringent environmental requirements may deliver benefits to a population that is much wider than that of the plant they may be applied to. Where regional averaging is applied, the distribution of costs (through charges) may align with the distribution of benefits. This is less so when the WSS

industry is fragmented and compliance costs are borne by small communities. Consolidation (at least of payments for environmental improvements) may be important to allow for a better alignment between the costs and benefits of meeting requirements.

Next steps

Participants indicated the following next steps as priority:

- Facilitating peer learning between Member states and information sharing (through dedicated workshops, platforms, publications...) on water saving incentive mechanisms and depreciation methods in relation to cost recovery, affordability and intergenerational equity.
- Sharing more information on the list of uses / pressures that could be targeted by charges on other pressures, the scope of such instruments, good practices and implementation guidance.
- Promoting peer learning between countries on LVC and its potential benefits in the water sector.
- Furthering the discussion on appropriate scales and levels of consolidation of WSS services with regards to cost recovery and the financing of increasingly stringent environmental policies.

Session 1: Water-pricing mechanisms

The approach to water-pricing should consider multiple roles/objectives:

1. Consistency with the recovery of efficiently incurred costs, including capital expenditure (CAPEX), to the extent that it remains to be recovered from customers.
2. The financeability of future investment requirements: providing a robust basis upon which utilities can fund investments viewed as appropriate and desirable.
3. Efficiency incentives: providing incentives to deliver appropriate performance levels, cost efficiently over time.
4. Allowing for affordable, acceptable and equitable bills: while this can clearly raise broader social and political considerations, it is important to recognise the various implications that different tariffs setting approaches have in relation to these matters.

These objectives are not always compatible with one another, making the choice and implementation of 'appropriate' water-pricing mechanisms challenging.

Adequate incentive pricing: what is an 'efficient' water-pricing mechanism (triggering efficient water uses)?

Price elasticity of water uses depends on many factors, including the tariff structure, the initial price level, the time frame, the magnitude of change, the type of water use, the presence of alternative resources, and users' income, among others. Therefore, for water charges or tariffs to drive demand, they should be embedded in a set of measures.

In France, water agencies collect a tax to preserve water resources, but it is too low to encourage water-saving behaviour. In the French collective irrigation systems, there is a very large diversity of tariffs, but three of them represent 2/3 of the tariffs: flat rate (26% of the cases, mainly for gravity irrigation systems), two-parts tariffs (35% of the cases, with a fixed part based on the irrigation surface and the rest based on the outflow or volume consumed), and (purely) proportional tariffs (5%, small structures). Two-part tariffs and proportional tariffs theoretically provide incentives for water savings as there is a relationship between the payment and the amount of water used. On the contrary, most of the new collective irrigation systems in France use flat rates and therefore do not have incentive water pricing (they generally invest in water metering only after 15 to 20 years of operation, after reimbursing their initial investment).

Participants shared the view that, while pricing can sometimes be effective to incentivise water savings, reducing consumption can lead to significant (financial) issues for operators. For instance, in Romania, prices increased for WSS in the early 2000s and in parallel consumption decreased significantly, which triggered significant issues for water utilities. Furthermore, participants pointed out that prices generally increase when consumers decrease their consumptions (due to high fixed costs). Thus, reducing consumption would not be in the interest of the operator and the consumer (because of rising costs). Participants also drew a parallel with energy utilities, which have incentives to promote energy savings. This difference could be explained by the fact that the price elasticity could be higher for the energy sector, because energy represents a larger share of the household budget.

Addressing affordability: what are the pros and cons of social measures vis-à-vis social tariffs?

Financial sustainability, environmental sustainability and affordability are three different imperatives that are difficult to reconcile only through water tariffs. Addressing affordability just through the 'expenditure /

income ratio' can be problematic. It can raise questions of affordability thresholds, notably in relation to other basic goods (affordability is not just a water issue). Thus, affordability problems are better addressed through targeted social measures, rather than social tariffs. Moreover, designing effective social tariffs can be complicated. Social tariffs may miss the target, especially without precise data on revenues of households. Nonetheless, when social measures are lacking, different approaches are possible: tariff design (social tariffs, increasing block tariffs – being phased out because missing the target, free block of water), payment support (Water Solidarity Funds, facilitated payments), and addressing consumption (awareness-raising).

Participants generally agreed that affordability issues should be addressed through social measures rather than social tariffs, otherwise it could jeopardize the sustainability of water utilities, but raised the point that social measures are not always efficient and sometimes difficult to implement. For instance, France is facing difficulties to support low income groups with social measures (difficult to target and reach people, administrative costs of data access, difficult negotiations with social actors...). Furthermore, targeted social measures only apply if a robust social system is in place, which is most often the case in Europe.

Depreciation methods: How depreciation might be 'flexed' in order to assist with financeability / cost recovery concerns?

The financial treatment of depreciation of existing assets is a complex issue that varies among water utilities within and between Member States. The way depreciation is calculated affects differently the tariffs and cost recovery rates, and can have particularly significant implications for assets funded by EU grants. Depreciation methods can be calculated from the perspective of spreading the payment of incurred costs (linear depreciation) or financing capital maintenance and renewal (with two main approaches: current cost depreciation and 'pay as you go').

In essence, different methods either reflect the costs incurred to build the assets (in the case of granted assets, that cost is null); or reflect the projected costs to renew existing assets (independently from the actual cost of building existing assets). The former put more pressure on regulated service providers for cost-efficiency, but may trigger a financing gap in the future. The latter generate more revenues for future investment, but relax pressure on operational efficiency and increase water bills, potentially exacerbating affordability issues. Hybrid methods would allow accelerated depreciation under certain conditions that reflect policy priorities.

In the case of Romania, water infrastructure was built mainly with the support of the EU. Royalties of regional operators should ideally reflect the value of the depreciation of public fixed assets, but this is actually the case for only 7 or 8 regional operators out of 44, due to invocation of affordability issues. Ensuring the sustainability of this infrastructure, and meeting the new EU standards, will require additional financial resources in the medium and long term. The idea is to better reflect depreciation in the water tariffs by widening the implementation and increasing royalties gradually. Affordability issues are to be addressed through different means: regionalization of the water services, cross-subsidies between large and small agglomerations, cost optimization, reduction of leakages, support for vulnerable persons, etc.

In Ireland, the water economic regulator sets the "allowed revenue" for Irish Water (the national public utility) for each revenue control period (around 5 years). This allowed revenue includes a component for operational expenditure, depreciation and for a return on capital ('rate of return/return on assets' as WACC). The depreciation approach is based on a straight line method founded on the expected economic life of the assets. This is allocated to domestic customers (77%) and to non-domestic (23%). Central Government covers a generous allowance for domestic customers from general taxation and only excess uses are charged.

In France, three indicators assess cost recovery levels, which differ in their inclusion (or not) of depreciation: i) revenues from users to O&M costs, ii) revenues from users to O&M costs and 20% of the

cost of depreciation, iii) revenues from users to O&M costs and 100% of the cost of depreciation. It raises questions of methodological consistency and triggers debates on opportunity cost of capital.

In Lithuania, EU granted assets are not taken into consideration in calculating depreciation and tariffs, which amounts to giving a preference to current rather than future customers. Without taking EU grant into consideration, the cost recovery rate is 100%.

The *following* next steps were identified during the workshop:

- Facilitating peer learning between Member states and information sharing (through dedicated workshops, platforms, publications...) on water saving incentive mechanisms
- Share experience with depreciation methods in relation to cost recovery, affordability and intergenerational equity, in a range of policy contexts.

Resources shared by participants

- Aqua Publica Europea (2016), *Water Affordability Public Operators' views and approaches on tackling water poverty*, https://www.aquapublica.eu/sites/default/files/document/file/ape_water_affordability_final_0.pdf
- EurEau (2017), *The Economic Challenge of Reduced Water Consumption* <https://www.eureau.org/documents/economics-and-legal-affairs/position-papers-2/138-consumption-reduction-january2017/file>
- EurEau (2016), *Making the human right to water and sanitation a reality in Europe - The role of affordability mechanisms*, <https://www.eureau.org/documents/drinking-water/position-papers/99-making-the-right-to-water-and-sanitation-reality-europe-september2016/file>
- Hoque, S. and R. Hope (2019), *Examining the Economics of Affordability Through Water Diaries in Coastal Bangladesh*, <https://doi.org/10.1142/S2382624X19500115>

Session 2: Efficient (innovative) cost-recovery mechanisms

Widening the implementation of water charges and unlocking untapped (private) sources of finance through innovating funding arrangements (including Payments for Ecosystem Services, Extended Producer Responsibility, or fiscal policies based on the Beneficiary Pays principle, such as land value capture mechanisms) can improve cost recovery for water services.

Charges on other pressures on water (beyond abstraction and pollution): should they be further exploited and how?

Charges on other significant pressures on water, beyond abstraction and pollution, mainly target hydromorphological pressures, including inland waterway transport, sediment extraction and obstacles in river bodies. Hydromorphological pressures are the main reasons for failing to reach good status for water bodies. Yet, charges on other pressures represent a very small percentage of the total funding for water management in the EU. They include a large diversity of instruments: water metering fee (Malta, Austria), flow continuity disruption (Bulgaria, France), alluvial sediment extraction (Portugal, Slovenia, Sweden), storm damage tax (Denmark), hydropower production (Spain, Slovakia, Slovenia), contribution to mountain communities, water restitution fee, fee for the management of protected areas (Italia), navigation, hydraulic fee, flood protection tax (France), water system management (Netherlands), heart recovery, aquaculture, fishing in commercial ponds, operation of ports, operation of bathing areas (Slovenia). Slovenia is the country targeting the most significant water uses, with a variety of charges in place. Such instruments have an untapped potential for raising additional funds for water management.

Participants discussed the reasons why charges on other pressures were not more widely used, with potential explanations related to transaction costs and difficulty to monitor and implement them. Participants also underlined the ambiguity of the definitions of water users, uses, services and beneficiaries, under the WFD, with a broad scope of possible interpretations. This ambiguity can reflect lack of political agreement but also the actual difficulties in implementing and defining concepts. Participants finally questioned the relevance of earmarking in this context, emphasizing that it can have benefits but also potentially affect the efficiency of public expenditures.

How to unlock untapped sources of revenues to achieve cost recovery? Focus on Land value capture

Land value capture (LVC) is a policy approach that enables communities to recover and reinvest land value increases that result from public investment and government actions. The beneficiaries of public investments that valorise their land or property should return part of their benefit to the public. LVC is an instrument attractive from a public finance point of view, as it is potentially efficient and equitable. It is however under-used to finance water, with too little peer-learning across countries.

Five main LVC instruments can be distinguished: infrastructure levy, developers obligation, charges for development rights, land adjustments and strategic land management. Some instruments are used more than others, with variation among regions of the world (e.g. infrastructure levy less used in low-income countries). The implementation of LVC is challenging, politically and administratively, with obstacles such as resistance from property owners, lack of administrative capacity, low quality of cadastre or land registry, inadequate legal framework or charges too high for owners / developers. On the contrary, there are enabling factors for LVC, including alignment to economic development and planning, political support, enabling framework (law, policy), technical capacity, and institutional mechanisms. LVC has a lot of potential for climate action, and could be applied in the water sector as water infrastructures can have a

positive impact on land value. Participants mentioned examples of applications in Australia, South Korea and Morocco.

Participants indicated as priority the following next steps:

- Exploring challenges and opportunities for a wider implementation of charges on other pressures, beyond abstraction and pollution.
- Exploring opportunities and challenges of implementing LVC in the water sector. Promoting peer learning between countries on LVC and its potential for water finance.

Resources shared by participants

- Champanier, K., N. Mazar and D. Ariely (2007), *Zero as a Special Price: The True Value of Free Products*, Marketing Science, <https://people.duke.edu/~dandan/webfiles/PapersPI/Zero%20as%20a%20Special%20Price.pdf>.

Session 3: How fit is cost recovery for the future?

Which implications of the zero pollution strategy on cost recovery for water management? Can (or should) increasingly stringent environmental policies be financed through water bills or water-related charges?

While Member States keep struggling to recover some of the costs of their programme of measures, it is clear that costs are likely to increase in the future, driven by the need to address the increasing investment backlog and such drivers as the need to adapt to a changing climate and more stringent environmental and health regulations supported by social expectations. It is not clear how these constraints can be reconciled in practice. What is the appropriate level of stringency for environmental policies? How much can water policy instruments support future costs? The point is not to question cost recovery as such, but to explore whether it remains practical in the emerging context in Europe.

Recovering the costs of programmes of measures through water bills or water-specific economic policy instruments could be questioned in terms of equity. Equity issues may have been masked when past investments benefitted from transfers from the international community. They may emerge more explicitly as communities face the burden of renewing granted assets or funding more stringent environmental and health policies in the future. This may tilt the discussion towards political and practical limits of raising tariffs (or water-related charges) and considering more substantial financial contributions from communities who generated the issues to be addressed through programmes of measures.

In Spain, subsidies for water management are justified for several reasons: fostering cross-subsidies across users and territories, compensating small and medium communities for the high costs related to the absence of economies of scale and encouraging / rewarding environmental benefits (similarly to Payments for Ecosystem services) which go above meeting legal environmental obligations.

With the Zero Pollution Action Plan, the level of environmental ambition at the EU level will increase. Indeed, the course of direction is clearly towards more stringency, driven by several directives including the Urban Waste Water Treatment Directive (UWWTD), the Drinking Water Directive, the Bathing Water Directive and Environmental Quality Standards. This new ambition is pushing towards a wider implementation of the Polluter-Pays Principle. Increasing the level of stringency of environmental policy will increase costs of meeting environmental requirements for society, but it will also avoid larger damage to society. Indeed, the objective of the Zero Pollution Action Plan is ultimately to reduce costs for society. Furthermore, as the efficiency of provision of WSS should have increased over time, the unit cost may have decreased. Thus, the cost of reaching environmental requirements should not increase that much.

The implications for customers of funding environmental improvements through water charges can differ significantly depending on WSS industry structure. The costs per customer can vary significantly depending on circumstances. This is perhaps most obvious in the case of provision of services to sparsely populated areas (e.g. Estonia and Lithuania)

More stringent environmental requirements may deliver benefits to a population that is much wider than water users (those who pay water bills). Where regional averaging is applied, the distribution of costs (through charges) may align closely with the distribution of benefits. This is less the case when the WSS industry is fragmented and smaller groups of users have to pay bills for broader policies on water quality. Under more fragmented structures, applying an approach that appears cost-reflective may result in customers of some companies facing a disproportionately high cost/benefit ratio. Industry and charging structures are important to consider when the impacts of funding more stringent environmental requirements through water charges are being assessed. Consolidation (at least of payments for environmental improvements) may be important to allow for a better alignment between the costs and benefits of meeting requirements. Flexibility in the delivery of environmental improvements can be

particularly important where the efficient plant size is likely to be small. Economies of scale in relation to tertiary treatment provision may make consideration of alternatives ways of improving outcomes (including e.g. those based on enhanced catchment management) particularly important to consider.

Participants indicated the following next steps:

- Further discuss appropriate scales and levels of consolidation with regards to cost recovery and the financing of increasingly stringent environmental policies.

Resources shared by participants

- European Court of Auditors (2021), *The Polluter Pays Principle: Inconsistent application across EU environmental*,
https://www.eca.europa.eu/Lists/ECADocuments/SR21_12/SR_polluter_pays_principle_EN.pdf.