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## Issue Paper

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The issue paper derives from the Background report compiled by Estonian authorities and interactions with stakeholders. It sketches the key themes on which the dialogue focuses. Some of the key issues to be covered include: making the case for reform; scenarios for aggregation; incentives to foster consolidation of utilities; technical – including legal – issues; tariff policy and methodology; independent economic regulation for WSS.

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### 3.1. Background and objectives

The Ministry of the Environment of Estonia jointly with other governmental authorities (the Ministry of Finance, the Minister of Public Administration), the European Commission – DG Reform, and the OECD are partnering to enhance the sustainability of water supply and sanitation services in Estonia. The Project will support the preparation of a roadmap for the consolidation of the water utility sector, a requisite for a sustainable and socially acceptable financing strategy and a broader water sector reform in Estonia. See the Detailed Project Description, for more information on background, scope and process.

The specific objectives of this Project are:

- to support the initiatives of national authorities to design their reforms according to their priorities, taking into account initial conditions and expected socio-economic impacts
- to support the efforts of national authorities to define and implement appropriate processes and methodologies by taking into account good practices of and lessons learned by other countries in addressing similar situations
- to assist the national authorities and water utilities in enhancing the efficiency and effectiveness of human-resource management, inter alia, by strengthening professional knowledge and skills and setting out clear responsibilities.

This issue paper presents a list of policy areas that requires further consideration to support reforms that effectively encourage consolidation of water utilities and put water supply and sanitation services in Estonia on a sustainable basis. The OECD Secretariat developed the issue paper building on i) a background report compiled on the state of play, ii) discussions at the kick-off meeting, and iii) interviews with select stakeholders in Estonia. Some features of the international experience with similar reforms have been reflected as well (e.g. on tariff reform); a more detailed review is on-going, which covers a broader range of issues.

Some of the key issues to be listed include:

- Making the case for reform
- Scenarios for the aggregation of water utilities in Estonia
- Incentives to foster consolidation of utilities
- Technical – including legal - issues to be tackled
- Tariff policy and methodology
- Independent economic regulation for WSS.

Propositions unfold, on key issues that deserve further analysis in the context of this project. The analyses are meant to document possible courses of action and options to facilitate consolidation of water utilities in Estonia. They define the proposed programme of work in the context of this project (in line with the Detailed Project Description). The outcome of the discussions has been reflected in this Issue paper.

The next steps of the project analysis will include:

- A review of international experience, with a particular focus on incentives, and on economic regulation
- Options to tackle legal issues, in particular at micro level (transfer of assets, accountability of local governments and water companies, etc.)
- Considerations for financial and non-financial incentives
- Modes of strengthening independent economic regulation (to set tariffs, benchmark performance of water companies, and assess expenditure programmes)
- A roadmap to manage the transition.

## 3.2. Issues to be covered in the project

### 3.2.1. Making the case for reform

Discussion on the reform of the water sector in Estonia has been going on for a couple of decades. A lot of research has focused that issue. Some experience has been gained, with several regional utilities already operating.

The long-term direction seems clear. Stakeholders seem to agree that the state of play is not sustainable and business as usual is not an option:

- Estonia has achieved a remarkable rate of construction of infrastructures for water and sanitation services, since its accession to the European Union, with multiple benefits for the population. These assets need to be properly operated and maintained. Failure to do so will need to a rapid decay and a need to rebuild existing assets, adding costs to the community.
- The fragmented industry has neither the technical nor financial capacity to operate and maintain existing assets. In 2018, 177 water companies were operating in Estonia. Some operate several services and the water service may be subsidised by revenues from other services. 44 local governments are serviced by more than one water company.
- The industry faces issues of compliance with the EU regulation. Five wastewater treatment plants (WWTP) of more than 2,000 pe (population equivalent) fail to comply with Urban Wastewater Treatment Directive (UWWTD) standard. Several WWTP of less than 2,000 pe (not covered by the UWWTD) do not meet required standards, potentially affecting compliance with the Water Framework Directive (WFD).
- Demographic trends will further exacerbate financial challenges for water services in the country. While the national population is projected to decline by 2.7% by 2045, population in four counties is projected to decline by 1/3, with negative consequences on the revenues for water services. This is an issue as a vast majority of the costs of operating water services are fixed.

In that context of high investment needs and projected decline of revenues, the prevailing financing model for water and sanitation services in Estonia is obsolete. The European Commission has indicated that financial support to the sector – which represents 85% of capital expenditures - will gradually be phased out. and the Estonian Ministry of finance confirmed that it will not be a substitute.

There seems to be a broad consensus on the state of play. Opinions vary on the direction for change and the pace of the reform. While some call for a rapid change, others argue that the current situation can prevail for 4-5 years, before the financial dead-end becomes more apparent and the case for change more pressing. This eventual grace period is best used to agree on a vision for the water industry in Estonia, and ignite change.

This project ambitions to support both the development of the vision, and the agreement on the course of action. The roadmap for the consolidation of water companies in Estonia will entail:

- A scenario for consolidation. For the moment, discussions essentially consider one model of agglomeration, on a geographical basis, where well-functioning companies gradually absorb smaller, fragile ones. This model can be discussed, and some nuance could be added. For instance, not all functions may need to be operated at the same scale: water supply could be operated at a different scale than sanitation; investment planning and procurement could be managed at a different scale than consumer relations and billing. Some competences could be available in regional centres, to support smaller utilities. These options (and more) deserve some attention, as for their relevance and feasibility in the Estonian context.

- A course of action. It is generally agreed that reform in Estonia should be voluntary only. Still, some staging may be required. One option may be to strengthen the operation of larger utilities first, so that they become able to merge with smaller ones, when appropriate. Another option might be to consider a pilot region, to test a number of options and accompanying measures; lessons could be learned, that inspire other regions. A range of actions need to be taken in parallel, such as the adjustment of the tariff setting methodology (if required), setting up capacities to review and assess the opportunity of investments and expenditure programmes (going beyond the assessment of eligible costs), organising benchmarking capacities to set performance objectives and review performance of water companies. Some of these actions relate to strengthening economic regulation. The roadmap will need to sequence these measures to ensure a smooth and effective transition towards the agreed-upon vision for a sustainable water industry in Estonia.

### *Mobilising local authorities to support the reform*

Mobilising local authorities requires a clear case for the costs and benefits of the consolidation process. It also requires that a set of technical issues be tackled in pragmatic ways. Intense consultation is a must, with multiple opportunities for local governments to voice their concern – and support – and comment on the roadmap, the incentives being considered and the responses to their queries.

In case the roadmap foresees the possibility of a pilot water company or region, support needs to be provided for its establishment and initial operation. It may include the following accompanying measures:

- The creation of associations of municipalities to facilitate creation of regional utilities
- Support to contractual arrangements between such associations and the regional utilities. Performance-based management contracts could be promoted
- Water Operators Partnerships (WOP) consisting of reputable operators.

Partnerships with experienced operators would be critical to develop and strengthen the newly formed organisations. The consolidated utilities could provide specific support to rural localities that are not yet part of the association.

### **3.2.2. Technical – including legal – issues to be tackled**

Preliminary discussions have highlighted a series of technical issues, which can explain why the reform of water companies in Estonia falters. These issues can create concrete and tangible obstacles to reform, even where the direction for change is not questioned. Some of these issues are legal. The project will endeavour to explore solutions in the context of the existing legal and institutional framework. More radical options may require changing the existing framework, making the feasibility more speculative.

#### *Legislative and institutional issues*

Clarification of the legal and institutional frameworks is the key issue to be addressed for successful implementation of the consolidation reform.

Several issues derive from the absence of a relevant and replicable contractual and institutional model for regional companies. According to the national legislation, local authorities collectively will remain the decision makers regarding the strategy and management of a common regional operator. Although the legislation stipulates the right for local authorities to associate with the objective of improving the quality of services of common interest, the regulatory framework is not as explicit about the legal forms and patterns of such co-operation.

A detailed review of the legal framework should therefore be conducted, to ensure its consistency with the considered institutional model. The next chapter will consider it with a particular focus on three aspects:

- Governance arrangements: how are voting rights allocated among municipalities
- Conditions required for joining and withdrawing from the association.
- Regime of assets: who owns the assets created under the association? In case of disbanding of the association, how are these assets returned to their original owner, and what happens with the assets built under the association?

Key features of the incorporation act of a regional service provider could be prepared to clarify the legal status and address some of the pending issues listed above. The delegation contract would most likely be in the form of a concession contract (the operator is responsible for both operation and investment). It would need to address key questions that arise under such type of contract, such as:

- Who decides and finances investment?
- How are tariffs set and adjusted?
- How is the performance of the regional utility monitored?
- What happens in case of failure to meet its targets?

### *Accountability of local governments for local infrastructure*

Decentralised ownership for local infrastructure creates issues with accountability for service provision. In Estonia, the allocation of tasks and responsibilities across institutions is blurred, on some issues. Water companies and local governments are responsible for the provision of water services in cities and settlements; the Ministry of the Environment is responsible for sustainable access to WSS services in the state as a whole.

The situation raises a few questions:

- Are these responsibilities equally clear and understandable to each party?
- Do all of the parties agree to the performance of the functions and obligations assigned to them?
- How are some obligations and functions financed?
- Is the allocation of responsibilities and resources fair from the viewpoint of all parties?

There may be disputes and misunderstandings between the Ministry of the Environment, the local governments and water companies about who should be responsible if a policy goal is not achieved. For example:

- Who should guarantee the WSS access in areas of over 2,000 p.e. to the sewerage system?
- Who should pay the fine for non-compliance with the EU directives, should it occur? Can the national government (which will be held accountable by the European Commission) ask non-compliant authorities to foot the bill? On which legal and financial basis?

Questions also arise when major disruptions and problems occur in the provision of the water service in a densely populated settlement. For example, if a major problem occurs, and drinking water no longer complies with requirements, so that an advanced water treatment is to be put in place; or if treated wastewater does not comply with norms, and a solution requires major investments, and minor operational improvements cannot solve the problem. Who bears responsibility to the citizens and/or the Ministry of Environment – the local government or the water company?

### *Operational issues*

A range of operational issues need to be tackled, to overcome fair objections to the reform. Based on preliminary discussions, these include:

- How to deal with existing loans taken by a local government or water company, after agglomeration?
- In the case of multi-purpose companies, how to address implicit subsidies across services? Agglomeration of water services may shatter the delivery of other services in the community.
- What is the role of companies' Boards as regards investments and expenditure programmes?
- Should tariffs of the agglomerated company be harmonised, or can different tariffs exist?

#### **3.2.3. Incentives to foster consolidation of water companies**

Addressing the technical – including legal – issues listed above can go a long way to expedite agglomeration of water companies in Estonia. However, incentives will probably be required to ignite change.

Financial incentive is probably the most effective. One of the key drivers for consolidation could be easier access to funds. In that spirit, parts of government funds might be reserved for utilities willing to join the process. From that perspective, the Estonian Investment Centre – under the Ministry of Environment – may have a role to play: eligibility criteria and support on the ground may reflect alignment of project owners with the ambition of reform. Of note: in Romania, only regionalised operators are eligible for public funding for capital expenditure.

Financial incentive might be supplemented by preferred treatment for investment projects or expenditure programmes from well-performing consolidated water companies. Such preferred treatment could take the form of less cumbersome authorisation programmes, renewal of licence to operate or other administrative measures that can facilitate the operation of water companies.

Licensing for water operators is another tool that Estonian authorities may wish to mobilise to incentivise local governments and water companies to agglomerate. The renewal of licenses could be faster for efficient water companies. And utilities failing to meet performance targets could lose their licence. This would provide opportunities for more efficient operators to expand their service area. Transition to the incentive-based regulation of water tariffs can play a role of economic incentive to enhance efficiency of water operators.

#### **3.2.4. Tariff policy and methodology**

The methodology to set tariff is a foundational driver for change and condition for reform. There are issues with the current methodology, in particular as regards its capacity to reflect investment needs and to drive the performance of water companies.

##### *Tariff methodology and its application*

The tariff methodology is a key part of economic regulation. In simple terms, independent economic regulation of WSS aims to ensure that customers receive the appropriate water service for the right price. Appropriate here refers to the combination of various objectives: economic (robust allocation of water and discouraging wastage), environmental (conservation of the resource), social (addressing affordability concerns) and financial (ensuring utilities' capacity to finance the operation of the service, now and in the future).

The tariff methodology developed by Estonian Competition Authority (ECA) is based on its mandate under Public Water Supply and Sewerage Act (Water Law) in Estonia. According to the law, water tariffs must be cost based – including a reasonable rate of profit - and approved by the regulator<sup>1</sup>. According to the legislation in Estonia, the WSS tariffs:

- cover justified operating expenses
- reflect the need for additional investments in order to ensure the sustainability of the existing public water supply and sewerage systems – according to the public water supply and sewerage development plans approved by local governments (development plan)
- ensure justified profitability (Weighted Average Cost of Capital - WACC) of the capital invested by the water company
- support the development of the public water supply and sewerage (incl. storm water) system in specific development areas where over 50% of residential buildings, for which building permits were issued before 22 March 1999, are connected to the system (in accordance with development plan).

### Box 3.1. Definitions in economic regulations of WSS

**Affordability:** Affordability is the capacity of a particular household group to cover all WSS-related expenses (including VAT, taxes and any additional charges). It is often expressed as a percentage of household income or expenditure.

**Eligible costs:** Those parts of overall costs incurred by an operator that the regulator deems needed to provide the regulated service.

**RAB:** The Regulatory Asset Base is set by those assets of the operator deemed necessary for providing the regulated service. A higher amount of RAB assets provides for a higher eligible depreciation expense, higher regulated return on assets and thus higher eligible costs.

**RIA:** The (ex ante) Regulatory Impact Assessment is a systematic process of identification and quantification of important benefits and costs likely to flow from the adoption of a proposed regulation under consideration.

**WACC:** The Weighted Average Cost of Capital is a calculation of the operator's cost of capital in which each category of capital is proportionately weighted. All long-term capital associated with the regulated service is included. A higher regulated WACC implies a higher cost of capital (of the RAB) and therefore a higher tariff.

Source: OECD (2015), "Regulatory Impact Analysis", in Government at a Glance 2015, OECD Publishing, Paris

The regulation assumes a single volumetric tariff that is the same for households and legal entities. Generally, this is in agreement with the Polluter Pays and Beneficiary Pays principles, as set in the Recommendation of the OECD Council on Water (source: <http://www.oecd.org/water/recommendation/#d.en.431326> ).

Other tariff formula could be considered, to better address the tensions between the various policy objectives. For instance, a two-part tariff structure is applied in Germany and the Netherlands. It would have a sizeable fixed component plus a single volumetric component. The two-part tariff structure does bring the revenue structure more in line with the cost structure of utilities, which have large fixed costs. However, in the absence of targeted social measures, this structure can have socially regressive effects. Some regulators allow limited fixed elements in the tariff structure, namely those related to customer services such as metering, billing and meter maintenance.

### *Social aspects*

Tariffs need adjustment if the affordability of service for segments of the population is at stake. An affordability check is not a part of the tariff setting procedure in Estonia. Here, the issue of affordability of the water tariff is solved at the level of the local government (e.g. income support etc.) by granting social support to specific people.

In practice, the water tariff is less than 2.5% of the income of a household member, which is why affordability is not considered as an issue yet<sup>2</sup>. However, it may have to be considered in the future, when the proper operation, maintenance and upgrade of the infrastructure has to be properly financed.

### *Ownership and depreciation*

Regulatory issues related to tariff formula are most influential. The current tariff regulation system in Estonia is characterised by the following:

- Reinvestment component is not part of the tariff formula for most water companies. The cost of replacing decaying assets is not properly reflected in the tariff-setting process, as assets built with EU fund (the vast majority of recent assets) are not included in the regulated asset base. Therefore, most utilities are unable to generate the revenues to renew and upgrade (where appropriate) existing infrastructures.
- Linear calculation of capital expenses according to the acquisition cost for fixed assets 30-40 or more years. The tariff setting method does not provide options to consider the indexed value of fixed assets instead of the replacement value.
- Despite the inclusion of depreciation costs, it is not possible to reflect in today's water tariff the depreciation costs of assets acquired by EU funds.

The main issue with the exclusion of granted assets from the base over which the return on assets and eligible depreciation expenses is calculated is that the method does not properly reflect the cost of maintaining and renewing existing assets. Accordingly, it prevents water tariffs from generating the revenues water companies need to finance a sustainable provision of water services, now and in the future. In the absence of subsidies, this financing model cannot be sustained, after the rapid extension of water infrastructures in Estonia.

One solution to this dilemma may be to allow for *infrastructure renewal charges*, such as in England and Wales, Scotland or Kosovo. Such charges consider as eligible expense the actual costs to maintain the asset base rather than the depreciation charge.

### **3.2.5. Independent economic regulation for water companies**

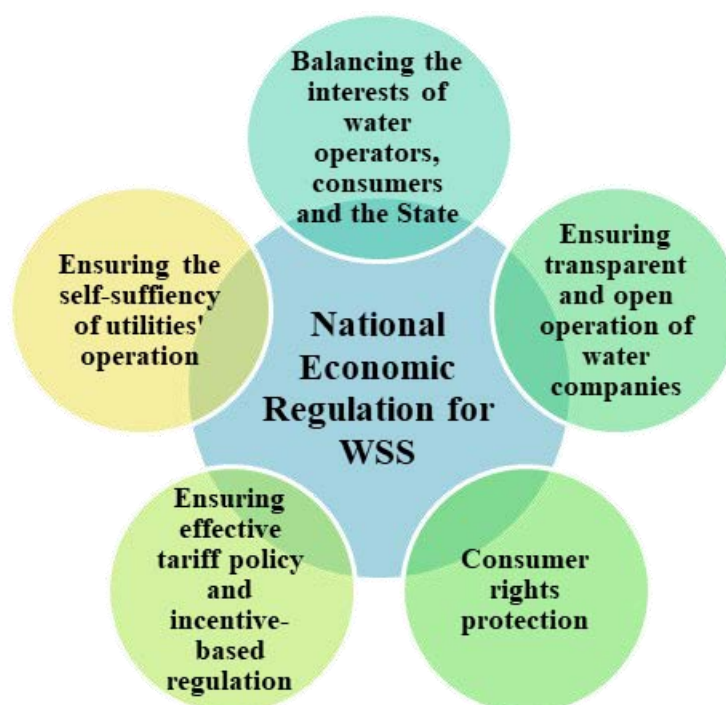
Independent economic regulation covers a range of functions as regards water supply and sanitation services. The previous section discussed issues related to tariff setting. This section focuses on two related sets of issues:

- Driving the performance of water companies
- Reviewing the opportunity of development plan and investment programmes. A related issue is driving the efficiency of expenditure programmes.

Note that independent economic regulation can be delivered via a range of institutional or organisational arrangements. The OECD has reviewed options in place several countries. That review will support tailored discussion on appropriate options to deliver the functions in Estonia.



Figure 3.1. The functions of economic regulation for WSS



Source: Authors elaboration

### *Driving water companies' performance*

Incentives to enhance the performance of water companies can be a key driver for change. Clear performance targets, supported by robust monitoring, adequate rewards (or sanctions) can drive performance, signal deficiencies and urge water companies to take action.

The tariff regulation demonstrates insufficient consideration for the performance of water companies. For instance, staff adjustment, and the reduction of non-revenue water to acceptable levels take several years. This is why in most countries, water companies' business plans are set for multiple years (5 years in England and Wales), in alignment with tariff revision periods and management contracts.

Two interrelated sets of issues deserve attention. The first one relates to the reference to be considered to set tariffs and define eligible costs. Currently, ECA considers local development plans (in practice, drafted by utilities and endorsed by municipalities) as reference documents for setting tariffs. In principle, the key document for the regulator is the operator's business plan, supplemented by its investment plan. The business plan must show and justify the performance improvement that can realistically be achieved, and the (capital and operational) costs associated with that level of performance.

The second set of issue relates to setting, monitoring, and rewarding performance. Estonia has limited experience with benchmarking the performance of water companies. Two distinct institutions monitor compliance: ECA, as the economic regulator (on water resources management and waste), the Health Board (on standards for drinking water). The Water Works Association set up features of a benchmarking programme, with limited results (it compiles partial, often outdated information, which accuracy remains unclear). A tailored set of criteria, aligned with policy objectives, and a systematic review of performance is the foundation of an incentive regime that can only enhance value for money and potentially drive change towards more effective and cost-efficient water industry in Estonia.

### *Investment planning*

In Estonia, economic regulation is based on costs, but it is not clear which institution – if any - checks whether the investment or expenditure programmes are opportune, or incentivises enhanced efficiency. In this situation, each local government has an implicit incentive to draft development plans in isolation, a missed opportunity to look for economies of scope or scale, for instance. This is an issue, in particular as water and sanitation services are capital intensive: risks of duplication are costly, in particular in the long term, when the need to maintain and renew existing assets is factored. The demographic trends mentioned can only increase such unnecessary costs.

Several options can be considered, to address this issue. A National Water Strategy, backed by a thorough and realistic financing strategy could be envisaged, to set the overall level of ambition and provide a reference to assess the opportunity of investment needs, and possibly encourage local governments to join forces. The objective of the proposed strategy would be, for each municipality, to:

- Identify long-term needs (based on population and economic development forecast) and source of water supply
- Identify investment needs for rehabilitation, replacement or extension of the water and sewerage facilities and their costs.
- Explore options for mutual investment and joint action with neighbouring communities. The proposed options could be prioritised when they align with the national water strategy and financial strategy.

This work would help to update and review the needs defined in local development plans, and conduct a proper consolidation of investment needs at the national level in cooperation with the ECA and Ministry of Finance.

### **3.3. SWOT-analysis for the WSS sector of Estonia**

One of the objectives of the Issues paper was to provide an assessment of the centralised WSS in Estonia. The assessment is focused on topics, which form a basis for the consolidation reform; namely, effective legal and regulatory framework, state's role in policy formation and implementation.

The results of the SWOT-analysis are presented in the table below.

Table 3.1. SWOT-analysis for the WSS sector of Estonia

Internal factors		External factors	
Strengths	Weaknesses	opportunities	Threats
<p>Implemented a massive investment programme over the past two decades</p> <p>High level of compliance with the Drinking Water Directive (DWD)</p> <p>Until now, only slight rise in financial pressure on consumers even in case of significant tariff increase</p> <p>Experience of WSS companies to work with EC and IFIs funding requirements</p> <p>Proper public engagement to decision-making process, active sectoral Association</p>	<p>No incentive for operational efficiency</p> <p>Issues with the accountability of municipalities and water companies</p> <p>Lack of reinvestment component in tariff formula. Capital is not amortized adequately</p> <p>Lack of own funds and external financing for retrofits</p> <p>Low salary rates in water companies, high employee turnover rate, low motivation of the personnel (particularly in smaller municipalities)</p> <p>Lack of qualified human resources (including brain drain due to low salaries and migration of population)</p> <p>Insufficient deployment of energy efficiency equipment and technologies</p> <p>High rate of extra water used and lost in the networks</p> <p>Loss-making activity, unsatisfactory financial state of enterprises, poor liquidity</p> <p>Insufficient public information and outreach. This contributes to a negative image of the sectoral enterprises and the consolidation reform</p>	<p>Opportunities to reap the benefits of economies of scale and scope</p> <p>Further compliance with the EU water Directives</p> <p>Access to the EU funds to facilitate new investments</p> <p>Improvement of the legal and regulatory framework (incl. secondary legislation)</p> <p>Improved efficiency of the state regulation over the WSS companies' operation</p> <p>Improved state policy in WSS and relevant state regulation system</p> <p>Available potential to increase the role of domestic finance and IFIs' interest in financing WSS projects</p> <p>Introduction of new water and waste water treatment technologies</p> <p>Transition to the incentive-based regulation of water tariffs</p> <p>Introduction and operation of a sectoral Information and analytical system (incl. benchmarking and monitoring systems)</p>	<p>Lack support of the reform among sector stakeholders</p> <p>Unpredictable revenues, caused by COVID-19</p> <p>Need for strengthening the strategic vision of sector's development</p> <p>Risk of inefficiency of national sectoral development programmes due to disconnect with local development plans</p> <p>Lack of capacity of local authorities to develop sectoral programmes (e.g. as a result they are developed by utilities)</p> <p>Efficiency of state regulation needs strengthening</p> <p>Limited willingness to pay higher tariffs by the population</p>

## Annex 3.A. Benefits of regionalisation of WSS services: selected cases

### Chile – Benchmarking the performance of water utilities

Chile is well regarded both for its water sector performance and its well-designed social services. Water sector reform started in the 1970s, leading to regionalisation and gradual tariff increases.

A highlight of this process was establishment of an independent economic regulator *Superintendencia de Servicios Sanitarios* (SSIS). In addition, four principles of tariff setting were set: non-discrimination, cost recovery, economic efficiency and encouraging conservation. The small SSIS developed a model company against which the 14 utilities operating in Chile could be compared. When setting the tariffs, the future efficiency improvement measures of the utilities were factored in. Under SSIS, leakage levels and cost recovery improved. Still, investment remained too small. SSIS initially failed to have leverage on some of the larger inefficient utilities.

These issues were resolved by:

- granting SSIS more power and independence, including funding through a levy on water utilities
- attracting finance for infrastructure through equity sales, concession contracts and involving the private sector, raising USD 1 bln that was subsequently wholly invested in infrastructure.

Among its main activities, SSIS monitors performance of both the sector and concession contracts.

Chile has a lot to share as regards options to cope with lack of affordability of water tariffs. From a social perspective, having no access to water is more costly than access at cost recovery tariff levels. Social measures have concentrated on funding extension or financing the costs of increased access, half of which went to the poor.

All consumers are billed the same full rate for the metered amount of water consumed. Means- tested poor customers, however, can bring bills to the municipality. The municipality pays part of the bill, provided the beneficiary pays the other part. In this way, municipalities cover on average 6% of turnover of water utilities.

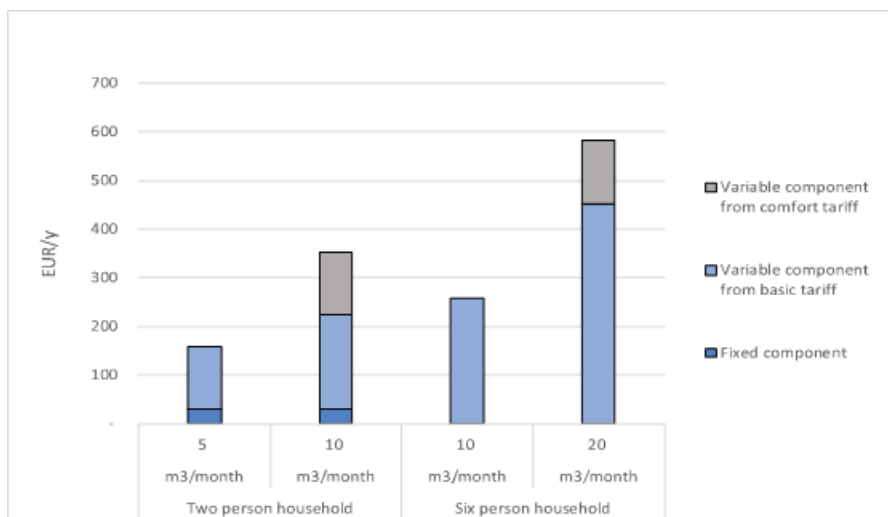
There can be little debate about the success of Chile in water sector reform. It is not clear, however, to what extent others can achieve the same results. Chile has a long tradition of effective administration and an acceptance of a contractual approach in public sector management. As a result, it has been able to provide targeted support to the poor and raise capital, mostly for wastewater treatment investment. The case of Chile illustrates that economic regulation needs periodic recalibration with policy targets, which is a task for the government at large.

### Flanders – on social water tariffs

The Flanders region of Belgium has a most advanced system of setting (social) water tariffs. First, there is only a small fixed fee for costs related to customers such as metering and billing. Overall, it is less than 10% of the bill. The volumetric part of the bill is charged either as “normal” or as “social”. The normal tariff structure is a straightforward Increasing Block Tariff (IBT), but based on the household size rather than on fixed brackets (blocks). In this way, larger households pay a similar price per cubic metre as small households, provided they are in the same tariff group and have a similar per capita consumption.

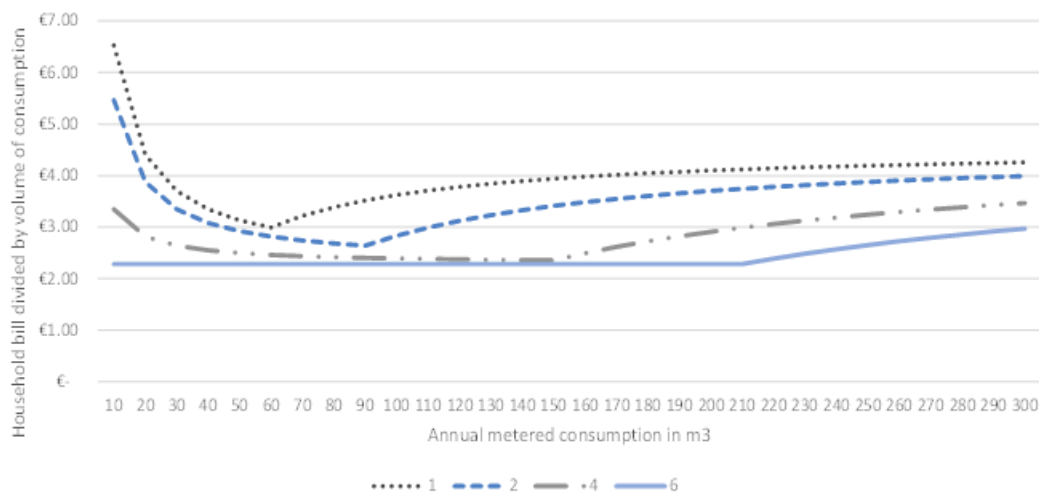
The social tariff is zero for the first 15 m<sup>3</sup> per person per year or 41 lcd (litre per person per day). Above that threshold, the social tariff is lower than the normal tariff. Figures below illustrate the concept. The built-in cross subsidy between smaller and larger units of consumption ensures the marginal price of water is the most expensive for rich and poor alike. In this way, there is an incentive to reduce consumption.

**Annex Figure 3.A.1. Composition of annual water costs for various household sizes and consumption levels, 2017**



Source: <https://www.farys.be/nl/watertarieven>

**Annex Figure 3.A.2. City of Ghent:2018 total household bill equivalent costs per m3 for different household sizes**



Source: <https://www.farys.be/nl/watertarieven>

The concept is appealing. It combines social, environmental and financial benefits.

Flanders illustrates an advanced social system carried out through the tariff. The regulator exercises a strong influence on social policy, stipulating the thresholds for the IBT and the relative tariff differential. There are two blocs (below and above 30 m<sup>3</sup> per household member per year). The tariff in the first bloc

shall be half that of the second one. The regulator also stipulates the size and conditions of the social tariffs, presently at one-fifth of the normal fixed and variable tariff elements.

The dual block tariff, however, puts an administrative burden on the utilities. To charge appropriately, utilities have to maintain records on inhabitants per household. Expenditure for WSS is in the order of 1-2% of household income i.e. quite affordable by international standards. It is difficult to assess how well the system maintains affordability for the poor. The per capita delineation of the tariff blocs addresses the most pressing argument against IBTs. But little is known on how well the blocs and tariffs perform in maintaining affordability in relation to, for instance, single volumetric tariffs. Brackets are not adjusted in light of updated, more recent poverty statistics.

This type of redistribution can only take place within the service area. Small consumers and social cases are subsidised by other customers within the service area. Three factors are necessary for this type of social measure to function optimally:

- The average tariffs should be similar among the service areas in the region
- The distribution of income within the service areas should be similar.
- Per capita income across the service areas should be similar.

Deviations on these conditions bring regional distortions to distribution of benefits that are difficult to quantify. Assuming the conditions have been sufficiently met in Flanders, one can still ask whether the social benefit of increased affordability of services outweighs the costs of the increased administrative burden for utilities.

## The Netherlands – achieving economies of scale and scope

In the mid-1970s, the Netherlands considered that its municipal water works lacked *economies of scale and scope* to deliver efficient services in the future. The 1975 Water Law kicked-started a regionalisation process that resulted in the ten current suppliers of drinking water. They are incorporated public entities that are 100% owned by municipalities and provinces.

Wastewater collection has remained a municipal responsibility. It is financed through a special municipal tax. Responsibility for wastewater treatment and water management rests with the democratically elected water boards. Water boards are legal entities, the first one of which was established in 1255. The 23 water boards operate on a regional scale.

Historically, the rationale behind regionalisation has been the need for efficient operations. Regionalisation, however, has supported affordability for the less densely populated areas

If all agglomerations up to 1 000 population equivalent (PE) charged based on cost recovery, then tariff rates in rural areas would need to be three times higher than those in large urban conglomerations. Income of rural households is typically smaller. Regionalisation of operations and harmonisation of tariffs across each expanded service helped share this burden. High-income/low WSS unit cost consumers cross-subsidise the lower-income/high WSS costs rural population through the harmonised tariff.

Municipalities collect the following:

- The wastewater collection charge to cover municipal sewerage costs. The charge can be based on drinking water consumed, property value or the number of inhabitants.
- The wastewater treatment charges and pollution charges on behalf of the water boards. The charge is not based on metered water consumption, but on three categories: single person households, two person households and households with three or more persons.

- The water system charges on buildings and land, also on behalf of the water boards, for water resource management. It is charged on the main occupant of the house or apartment (or land), as a fraction of property value (or as fee per habitant).

These charges mostly provide a fixed component to the WSS- related expenditure and may be seen as regressive.

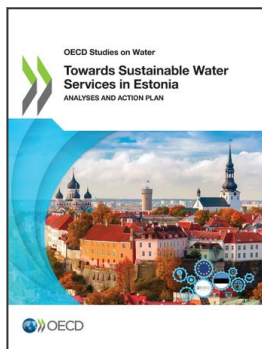
Municipalities in the Netherlands provide for a WSS-related social measure through a partial or full exemption of (exclusively) their poorer citizens. Exemption of only fixed elements of the WSS-related bills leaves intact the incentives to save drinking water.

The Dutch system of WSS provision is complex and appears fragmented. Because of the long tradition and a strong culture of co-ordination among authorities, it does provide for a high level of service and reliability. The regionalisation of services has enabled an automatic cross-subsidy mechanism that would otherwise have been impossible to set up. In addition, a decentralised targeted WSS-related social assistance is in place through the exemption of fixed charges on poor citizens.

## Notes

<sup>1</sup> Note that tariffs for services below 2,000 pe are set by local governments.

<sup>2</sup> A threshold of 3-4% is internationally used as a reference, although its source is unclear and it comes with a number of caveats.



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