Meeting of the Parties to the Protocol on Water and Health to the Convention on the Protection and Use of Transboundary Watercourses and International Lakes

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Small-scale water supplies and sanitation

INFORMAL DOCUMENT 9

Costing and financing small-scale water services

– Draft annotated outline for comment by the Working Group on Water and Health –

Improving small-scale water supplies and sanitation is a priority area under the Protocol's 2017-2019 programme of work. Building capacities, sharing and promoting good practices and tools on sustainable financing of small-scale water supply and sanitation is one of the objectives of the programme area.

The lead Parties in collaboration with the WHO secretariat and with support of IRC, the Netherlands, initiated the development of a document addressing the key principles in the costing and sustainable financing of small-scale water supply and sanitation services. The document is targeted to national and sub-national policy makers and aims to raise awareness and provide guidance on defining strategies for the financing of the costs related to the provision of small-scale water supply and sanitation services.

The annotated outline provides an overview of the proposed structure, main contents and issues to be addressed in the document; in particular it describes the conceptual framework of financing of WASH service provision and its application in the context of small-scale water supply and sanitation systems.

The Working Group on Water and Health is requested to review the draft annotated outline and provide comments and feedback on the structure, scope and technical content of the document. Please submit comments and feedback to **Rickert Bettina** (Bettina.Rickert@uba.de) by **26 April 2019**.

Note: The draft document is for review by the Working Group on Water and Health only and not for wider distribution at this stage.

Costing and financing small-scale water services
Annotated outline

This annotated outline provides the structure of the envisaged document by indicating the suggested chapters and sections of the document. For each of the chapters, the main arguments and issues are indicated in the form of bullet points. Also, already relevant literature references are indicated. The indicative length of each section is provided as well.

Executive summary

Content to be written at the end.

1 Introduction

1.1 Background

- This will provide statistics (based on JMP and other studies) on the number of people in the pan-European region, as defined by WHO, that don't have access to basic or safely managed water and sanitation services.
- This will then provide statistics on what percentage of these live in rural areas. It will also provide statistics of the number of people who do have basic services and live in rural areas and the urban-rural divide,
- There is a dual challenge: 1) ensuring access for those who don't have that yet, many of whom are likely to be served through small systems; 2) ensuring good performance and sustainability of those who have access and are served through small systems
- Over the past years, countries that are party to the Protocol on Water and Health have regularly discussed the need for special emphasis on small-scale water and sanitation systems, as they pose a number of challenges. (ref to the policy note).
- There is no universal definition of a small-scale system, as elaborated in previous policy note. Legislation typically defines small-scale water supplies based on criteria such as the number of people served, the type of management, the quantity of water provided and whether the supply is piped or non-piped, centralized or decentralized, rural or urban. Similarly, small-scale sanitation systems may be classified by the quantity of wastewater treated, the number of service connections or the type of technology used. Here, we use to all those systems that by national legislation are defined as small systems.
- The evidence is clear that the financial benefits outweigh the investments in improvements to water and sanitation systems. It has been estimated for the pan-European region that an investment of US$ 1 in small-scale water supplies results in a mean return ranging from US$ 2 in higher-income countries to US$ 21 in lower-income countries. For the Caucasus and central Asia, for example, every US$ 1 spent on improving sanitation brings an average economic return of US$ 4.8 in the form of time savings, lower health costs and improved productivity. (Rickert et al., 2016)
- Even though investments in small water and sanitation services make economic sense, it does not necessarily provide a financial positive balance. The ones who pay the costs are not necessarily the ones who receive the benefit.
- A particular challenge that the countries seek to address is the financial one. Small systems – by definition – represent limited economies of scale, both in their initial development, but also in their operation and maintenance.
- Efforts to address access to small systems, and their sustainability need to start from a good understanding of the costs associated with service provision through small system, the ways in which these can be financed, and the specific challenges faced in that

- National and local authorities responsible for small-scale water and sanitation, such as the ones typically involved in actions under the Protocol on Water and Health, often lack specific expertise of the issues pertaining to the costing and financing of water and sanitation service provision. It may not even be their mandate to define these. But they need to be equipped with a sound understanding of the key concepts and key issues in this field, so as to be able to collaborate with the entities responsible for financing, such as finance departments, economic regulators, (development) banks and investors.

1.2 Objective and target audience

The objective of this working paper is to provide national and sub-national policy makers with guidance on defining strategies for the financing of the costs of service provision through small-scale water supply and sanitation systems.
This guidance will be based on:

- The provision of a framework of key concepts and terminology related to the costs and financing of water and sanitation services
- An understanding of the particular challenges related to financing small-scale water and sanitation services
- A broad framework of strategies for addressing these challenges.

This guidance is particularly targeted at those national and sub-national policy makers responsible for water and sanitation interventions, either specifically under the Protocol on Water and Health or more generally.

1.3 Structure of the document

This section would just describe the structure of the document

2 Conceptual framework: the life-cycle costs and sources of financing for WASH service provision

The scope of this chapter is to define a number of key terms related to the costs and financing or WASH services, and how these two can be brought together. This the framework that then will be examined in more detail in the subsequent chapter 3.

2.1 Life-cycle cost components

To ensure sustainable financing for small-scale services, it is necessary to consider the different types of cost that occur throughout the lifecycle of the service. **Life-cycle costs** are the costs of ensuring adequate services to a specific population in a determined geographical area. All costs from construction, and installation, to maintenance, repairs and eventual replacement are taken into account, including payment for borrowed money either at household or national level government level. In short: the costs that it takes to deliver a service and not only to build infrastructure. (Fonseca et al., 2011; Fonseca, 2015).
The different life-cycle cost categories are defined as follows:

- **Capital expenditure (CapEx)** – hardware and software: expenditure on fixed assets such as concrete structures, pumps, pipes and toilets – for both initial construction and system extension – and the accompanying "software" such as capacity-building or sanitation promotion. System upgrade is also considered capital expenditure.
- **Operating and minor maintenance expenditure (OpEx):** recurrent (regular, ongoing) expenditure on labour/staff, fuel, energy and materials needed for operation, safe management and routine maintenance to keep systems running.
- **Capital maintenance expenditure (CapManEx):** renewal, replacement and rehabilitation costs that go beyond routine maintenance.
- **Expenditure on direct support (ExpDS):** costs of ongoing support by the local government to operators and local stakeholders, and any associated license fees or charges – for example, the costs of surveillance and providing operators of small-scale water supply and sanitation systems with technical assistance and advice.
- **Expenditure on indirect support (ExIDS):** costs of higher-level support, such as government planning, policy-making and regulation and any associated license fees or charges.
- **Cost of capital (CoC):** costs of servicing capital, such as repayment of loans or payment of dividends and the costs of tying-up capital.

2.2 Life-cycle cost analysis

A life-cycle cost analysis is the method for quantifying the various costs mentioned above. Knowing the (approximate) size of these costs is necessary to finance sustainable, reliable and safe services it is vital that approximate costs are known and planned for from the start.
Doing a life-cycle cost analysis requires collecting, processing and analysing data from a number of sources, including the following:

- [insert here a list of bullet points on this]

However, in many cases, there are no readily available data to carry out such an analysis. Particularly data for small-scale systems are often **lacking or incomplete.** Reference costs may be known, particularly for the initial capital expenditure, but much less insight often exists into the other cost categories.
National policy-makers can commission dedicated studies in order to obtain this information. To give grounded financial data, the different costs could be tracked regularly, based, for example, on a sample of representative types of systems. Doing a life-cycle cost analysis implies the following.

2.3 Sources of finance

All these costs need to be covered and may require different sources of financing. The Organisation for Economic Co-operation and Development (OECD, 2009) divides these into three large groups:

- **taxes** (internal public finance), [add definition]
- **tariffs** (user fees and initial contributions) and [add definition]
- **transfers** (external development aid) [add definition]

Other sources often mentioned – such as micro-credit and other repayable finance – eventually fall into one of these three groups.

2.4 Tracking finance

Tracking of finance is the method of quantifying the different sources of finance for a geographic area over a certain time period. This can be done at national level, but also at subnational level, e.g. a district. It is not only important to understand the relative size of each of the sources of funding. It can enable the sector to address problems related to absorptive capacity and bottlenecks in the financial flow. Making financial information available also enhances the transparency of financial flows to the sector. This is a must because it decreases opportunities for corruption and illicit financial flows. Making the financial data available to citizens bridges the current financial accountability gap in the water and sanitation sector. In the WASH sector there are currently number methodologies for tracking finance:

- UN Water GLAAS. Since 2008, which provides biannually a global update on national finance streams in support of sanitation and drinking water in around 100 participating countries. Its section on financing "explores what processes (i.e. planning, budgeting, financial tracking and reporting) are in place to distribute financial resources to the WASH sector, how well allocated funds are absorbed, who finances WASH, the amount and sufficiency of funding, and the types of services funded.
- The UN-Water Global Analysis and Assessment of Sanitation and Drinking-Water TrackFin methodology for international comparisons (see WHO/UN-Water 2015). This methodology found its root in the fact that many countries were not able to report consolidated figures into the GLAAS reports. the TrackFin methodology was developed to help countries to systematically assess the amounts of money mobilized from the three sources of finance, and going into the various cost category.
- The WASH Accounts Production Tool (WAPT), that was developed to support countries to import and map expenditure data and to automate production of standard WASH accounts indicators and tables. The WAPT was launched in February 2018 and is available in English, French, Portuguese, and Russian
- mapping funding flows at national level (i.e. budget tracking and public expenditure tracking) (see Jaćimović and Fonseca, 2012 and Koziol and Tolmie, 2010 for more info)
- using the life-cycle costs approach to access expenditure, affordability, and service levels

In spite of the number of methodologies and tools that is available, there is a number of challenges faced in tracking financial flows. These include the following: [to be elaborated]

2.5 Bringing together life-cycle costs and sources of finance

The various life-cycle costs can be brought together with the various sources of finance into a financial balance, as show in Figure 1. This does require the quantitative analyses mentioned in sections 2.2. and 2.5.

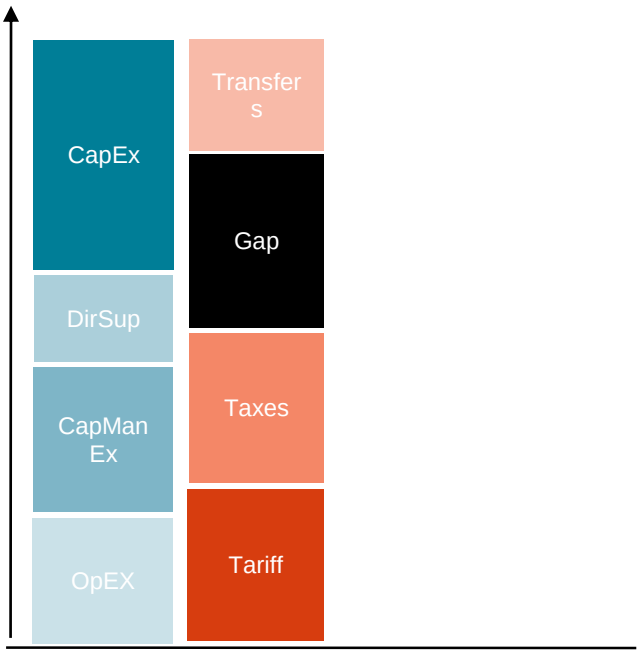

Figure 1: balance between the life-cycle costs and sources of finance

- The figure shows on the one side the sum of the main life-cycle costs, and the various sources of finance on the other.
- This balance needs to be done for a particular time period (e.g. a year, or a couple of years). In that way, the one-off capital costs can be combined with recurrent costs, such as operation and maintenance, or direct support.
- The balance also needs to be done for specific geographic areas. This can be an entire country, but often also a subnational basis, such as a district, or what is the relevant unit of planning finance.
- Often there is a gap in finance. If that gap relates to capital expenditure, it means in essence that less people can be provided with new services than what is needed to reach a target. If the gap is in one of the recurrent costs, it sooner or later translates into a reduction in the service level
- This financial balances allows then identifying strategies to reduce the financial gap by:
    -

1. *Reducing the costs*. This can come from efficiency gains, by getting the same level of service at a lower cost, e.g. through more streamlined procurement processes. In some cases, the costs can only be reduced by also lowering the level of service.
2. *Increasing one or more of the sources of financing.* There are different strategies that can be followed to increase each of the sources of finance.

3. *Using repayable finance to bring forward the finance in time*. By borrowing money, for example for capital investments, the financial gap at a particular moment in time can be reduced. This will need to be repaid in future, either from taxes or tariffs. In other words, a current financial gap can be reduced by borrowing against anticipated increases in taxes and tariffs in the future.

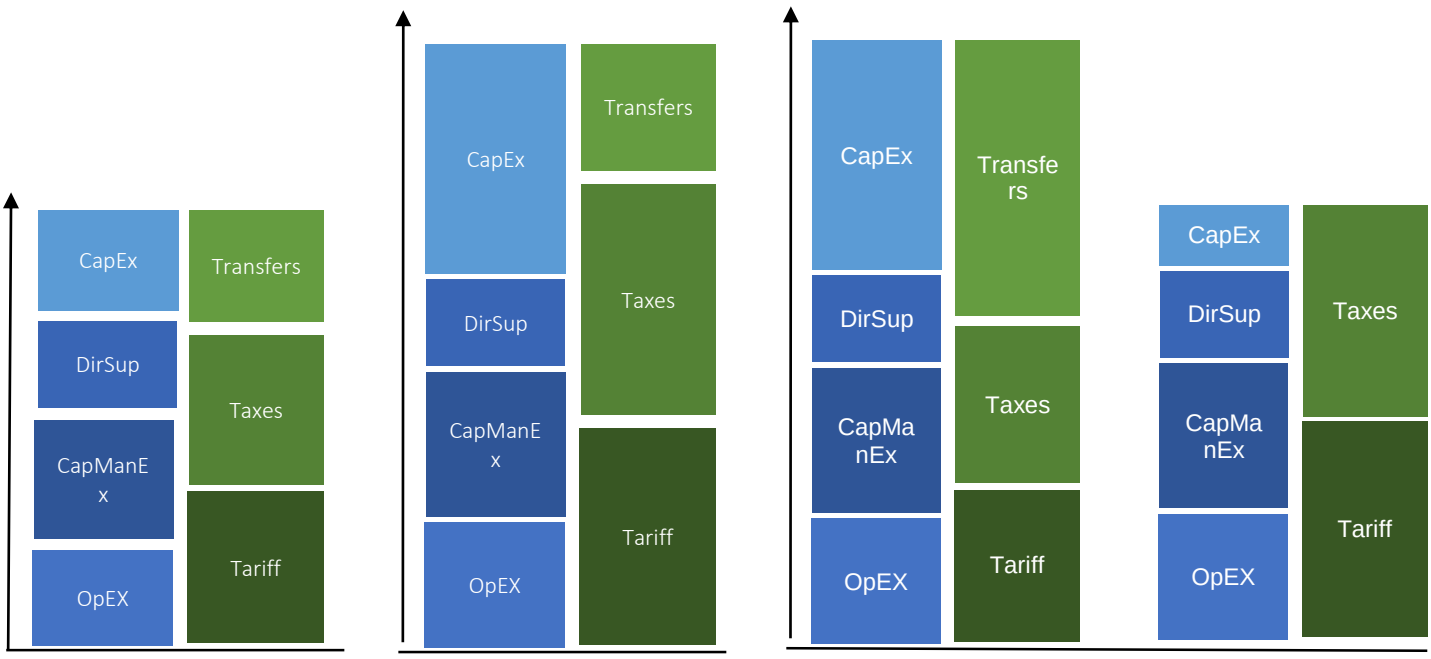

Figure 2: three strategies to reduce the financial gap: 1) reducing cross, 2) increasing finance and 3) borrowing against future increase

These three groups of strategies are often interrelated, as the three sources of finances are not interchangeable. For efficient (and equitable) financial planning, the right mix of the sources of finance – particularly tariffs and taxes - is important. For example, it is common that taxes are channelled to utilities so that these can cover some of their OpEx and CapManEx needs, and keep tariffs low. In that way, the utility is not incentivized to perform more efficiently. Moreover, users who have access to water from such a utility are often wealthier than people who do not have access to water supplies at all. Taxes are then effectively used to 'subsidize' the recurrent costs of water provision to better-off segments of the population, at the expense of extending services to people who do not have such access at all, and who would be served through small-scale supplies. This practice also limits the possibilities of a utility to attract repayable finance.

3 Applying the framework to the context of small-scale water supply and sanitation systems

This section applies the framework presented in the previous section to the context of small-scale water supply and sanitation systems. This is done by reviewing for each of the cost categories:

- What the current most common sources of finance are.
- What potential finance gap there is for that cost category
- Potential strategies to either 1) reduce the costs, 2) increase or realign finance for that cost category or 3) bring finance forward through repayable finance.

3.1 Capital investments

3.1.1 Source of finance

- Capital investments are usually provided for through taxes. That is, out of the budgets of national or local governments, investments are paid in public water and sanitation infrastructure.
- A second source of funding, particularly in the EECCA region, are transfers from international donors.
- A third source is tariffs in the broader sense, where it refers to households making their own investment in on-site water and sanitation. This is also referred to as self-supply.

3.1.2 Finance gap

- There is little overall quantitative insight into the finance gap for capital investments in the region.
- Hutton and Varughese provide estimates for some of the countries
- However, those estimates do not indicate where the finance could come from.

3.1.3 Strategies

- Improve efficiency – i.e. reducing costs and improving efficiency in capital investments
- Increase public finance for WASH. Funds from taxes for small systems can increase when either a) the overall tax base of the country increases, or b) the share of taxes going to water and sanitation increases, or c) when it is shifted within the budget for WASH from larger systems to small-scale systems. The likelihood for overall increase in taxes is mixed in the region. More importantly, there is scope to make sure that public finance is used where it adds most value, and where other sources of finance are not available.
- Transfer: discuss trends in transfers for WASH and assess the likelihood these can increase
- Self-supply: little insight exists in most countries in the total amount invested by users themselves in their own water and sanitation services. But there are strategies to further encourage this [refer to literature on promoting self-supply
- Attracting private repayable finance and blended finance. I will write a couple of paragraphs on this, based on recent literature on this, discussing the limited likelihood for this for small-scale systems, given their low economies of scale, poor tariffs etc. More important is to ensure that private repayable finance is targeted to those providers that have populations that can pay it back, to free-up money from there.

3.2 Operation and minor maintenance and capital maintenance

3.2.1 Source of finance

In most countries, the sector frameworks indicate that operation and minor maintenance needs to be covered fully from tariffs. It is often not efficient for taxes to be used to contribute to those costs. this is even more so the case in the context of small-scale services, where taxes would otherwise have to go to a large number of small providers.

The same applies for capital maintenance. Service providers – through the tariffs they collect – can gather enough funds for large replacements. This principle is common in larger systems – which are typically utility-managed systems - but not in small-scale systems. In those cases, capital maintenance may need to be financed – often on an ad hoc basis – from taxes.

3.2.2 Finance gap

One of the difficulties to assess whether there is a finance gap is that this requires assessing OpEx and Capital Maintenance together in relation to tariffs.
I will discuss methods and tools to assess this gap:

- GLAAS questionnaire
- Databases and reports from the economic regulator
- Case studies of selected service

3.2.3 Strategies

The most obvious strategy for reducing the gap is by increasing revenue from tariffs. Revenue from tariffs can be increased by either raising the overall tariff, but often also by changing the structure (so that larger consumers or better-off households see their tariff rise) but also by increasing billing and collection efficiency. This is often a sensitive issue. Roles and responsibilities for tariff setting differ from country to country or even within a country. In some places, regulators provide detailed frameworks for how to calculate and established tariffs; in others, it is defined in contractual arrangements between the provider and local authorities. In others – particularly for small systems – there is no clear guidance on the content nor process fo tariff calculation and setting. in such cases, tariff definitions may be subject of political interference.

This requires a framework of sound tariff-setting rules and mechanisms to be established at the national or subnational level promotes more efficient provision of water services. In some countries such frameworks are established by independent economic regulators. A tariff-setting framework needs to take into account the economic realities of small-scale systems, as well as affordability and social criteria.

Affordability of water and sanitation means that “people must be able to afford to pay for their water and sanitation services and associated hygiene”. The price to be paid must “not limit people’s capacity to buy other basic goods and services […] guaranteed by other human rights”. In order to strike the right balance between availability and affordability, pricing policies and affordability mechanisms play a fundamental role. Maintaining water tariffs artificially low would generate a vicious cycle of underfunded services, inadequate investment and aging infrastructures: the quality of services would decrease and future users will not be able to enjoy the same level of quality at a similar degree of affordability. Although decisions on such measures and the identification of beneficiaries remain the responsibility of public authorities, water operators can play an important role in developing appropriate models. (EurEau, 2016)

If no country-specific data are available, as a rule of thumb spending a maximum of 3–5% of household income on water and sanitation can be used as an indicator of affordability for planning purposes. Policy-makers have a number of different options to improve affordability and/or equity for users of small-scale systems: block tariffs, public subsidies from general taxation and cross-subsidies. In some countries, there is an explicit decision not to carry out income/wealth policies through public services. In such cases, all users would pay according to the same tariff structure. The government supports the poorer households through other instruments outside the water sector.

A second related strategy is to have a more explicit differentiation in the tariffs regulation between OpEx and CapManEx and clarity on the payment of CapManEx from taxes. That in turn means that the relevant authorities establish mechanisms to cover CapManEx.

- Earmarking and ringfencing of funds for CapManEx

A third strategy is to reduce the costs of OpEx and CapManEx, or to be more precise, to share those costs among a larger number of users. It is beneficial for small-scale systems to join forces with neighbouring municipalities and communities or with bigger utilities by forming cooperative partnership arrangements. In such arrangements, capacities and efficiency increase as a result of extended human, technical and financial resources. Costs can be shared, with increased flexibility in applying funds if several municipalities

contribute and agree jointly on priorities for their use. This is particularly relevant for capital maintenance. Rather than having to save for one-off expenses every 15 or 20 years, there is a more constant flow of funds.

3.3 Direct and indirect support costs

3.3.1 Source of finance

- Explain that this is usually taxes. though in practice some transfers go into this

3.3.2 Finance gap

- Provide data and estimates and tools for assessing this

3.3.3 Strategies

- Increasing taxes, particularly by ringfencing and earmarking
- Increasing efficiency by collaborating or sharing amongt larger number of service providers

3.4 Costs of capital

3.4.1 Source of finance

This is either taxes, when a government takes a loan and pays it back. Or tariffs, where the loan is passed on to the utility, and tariffs need to be used to pay it back

3.4.2 Finance gap

The issues is not so much a finance gap. But one in which small-scale service providers often find themselves in a 'financing availability gap', for funding roughly below USD 100,000. That Domestic entities such as Micro finance institutions (MFIs) or local commercial banks rarely provide this finance as they are unfamiliar with the WASH sector and perceive it to be high risk. As a result, service providers from small scale systems would have to pay prohibitively high interest rates.

3.4.3 Strategies

Public funding, either from domestic governments or international donors, could potentially be used to leverage additional financing for small-scale WASH providers. International donors can rarely support these providers, however, as there are very few channels to transfer donor financing to small-scale providers. Many donors (bilateral or multilateral) tend to finance WASH via central governments or utilities operating at the national level. Some donors also support sub-sovereign entities (such as utilities or local governments), either through grants or loans (generally with a national government guarantee, but also without in some cases) or in the context of support provided to national programmes. (Trémolet, 2012)ю

4 Conclusions

- Summary of the framework
- Summary of the main steps in applying the framework
- Need to bring the elements of the framework together into an overall finance strategy

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