

6th World Water Forum
Target & Solutions Group report

Intercontinental Mediterranean Process
Theme: Urban and Industrial Wastewater collection and treatment

Target & Solutions Group for Target 4.2

“By 2018, each Mediterranean country has defined a strategy of sustainable cost recovery (SCR) for sanitation services through the use of tariffs and fees, public subsidies and international financial assistance to ensure economical sustainability, equitable access for all and pollution control.”

Thematic: Tariffs, Taxes and Transfers (the “3Ts”)



Coordinators: EMWIS / SEMIDE & ONAS

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1. Introduction

The sixth World Water Forum focuses on four main processes: thematic, regional, political, root and citizenship. The Cross-Continental Mediterranean region is one of seven territories of the regional process. The Mediterranean Cross-Continental Process has identified four priority themes grouped into two components, as follows:

- Efficient water management, a priority issue deals with shortfalls and crisis prevention due to climate change

Priority 1: Non-conventional water resources

Priority 2: Demand Management

Priority 3: Governance

- Depolluting of a shared ecosystem

Priority 4: Collection and treatment of industrial and urban wastewater

The current report is an input to the Cross-continental Mediterranean Process of the 6th World Water Forum to be organized in Marseilles (France) on 12-17 March 2012. It corresponds to target 4.2 of the main priority on urban & industrial wastewater, which includes 2 target-objectives framed as follow:

4.1: “By 2020, every Mediterranean country has put into force a rule supervising the discharge of industrial waste in the collective sanitation systems, and by specifying the technical, financial and monitoring modalities. ”

4.2: “By 2020, each Mediterranean country has defined a strategy of sustainable cost recovery (SCR) for sanitation services through the use of tariffs and fees, public subsidies and international financial assistance to ensure economical sustainability, equitable access for all and pollution control.”

As part of the process of preparing this report, a mailing list was created to follow-up with national and regional stakeholders and collect existing and innovative solutions. An action plan has been developed and detailed later in this document.

The draft report was discussed during working sessions at the 1st Mediterranean Water forum in Marrakech (Morocco), 19-20 December 2011, with the presence of numerous actors involved in this report. Then, new inputs have been incorporated after the world water forum of Marseille. Hence, the current report reflects the progress been made since Marrakech, especially after the solutions of some partners have been presented in Marseille.

This group is coordinated by EMWIS (Jauad El Kharraz) and ONAS (Nejib Abid) with the support of Eric MINO (EMWIS) & Monica Scatasta (EIB). This report takes into account

reports provided by EIB, OECD and works undertaken by EMWIS on financing the water & sanitation sector for the preparation of the Mediterranean Strategy for Water (SMW) launched by the Union for the Mediterranean, which has set the theme of 'water financing' as one of its four priorities.

2. Background of the region and rationale of the target

2.1. Overview

Among the major obstacles to rapid implementation of projects that can contribute decisively to the objectives of improving the health situation and the Horizon 2020 program (depolluting the Mediterranean Sea), is the lack of financial resources to ensure a satisfactory functioning and make the necessary investments. This has often led to serious shortcomings in the control of pollution (municipal waste, urban sewage and industrial pollution) maintaining the idea that sanitation does not deserve the same priority as the drinking water supply services. Hence, sufficient and sustainable financing is a prerequisite of a functioning water sector, which ensures the sustainability of public water and sanitation services (WSS), which itself is necessary for human and economic development, social stability and peace.

The economic, social and environmental cost of the lack of sanitation is often much higher than the actual cost of developing and managing these services. In addition, the lack of sustainable financing for WSS has dire consequences for users, especially the poorest. Providing sustainable drinking water supply and sanitation services requires a sound financial basis and strategic financial planning to ensure that existing and future financial resources are commensurate with investment needs as well as the costs of operating and maintaining services.

Conventional public finance in sanitation in the past had generally focused on subsidies for household and public toilets, and grants for urban sewerage and solid waste systems. Traditionally the approach to providing access to sanitation had been supply driven and focused on financing the building of toilets, installing sewerage networks and constructing treatment facilities. Most global finance estimates to meet the sanitation MDGs by 2015 are calculated using this approach. According to the Global Water Partnership the required annual expenditure to meet the sanitation targets is USD 17 billion for basic sanitation and USD 70 billion for wastewater treatment, and the annual finance gaps are estimated to be USD 16 billion and USD 56 billion respectively. A review of emerging thinking and practice suggests that a shift in sanitation financing is required from financing 'subsidies and grants for sanitation facilities' to funding 'sanitation promotion and leveraging resources'. A key concern among decision makers is the growing evidence that supply driven approaches to build more toilets with household subsidies are not effective in terms of sustainability, partly because users actual needs are not taken into consideration. This leads to a situation where the sanitation facilities

are unwanted, inappropriate and unused. There are plenty of examples from different countries of unused facilities, toilets being used for storage in rural areas, households not connecting to sewerage systems and treatment plants that fail to treat sewage. This has led to a search for an appropriate sanitation promotion strategy that recognizes both the demand and supply sides within a marketing approach.

At the third World Water Forum in Kyoto in 2003, an international panel of leading specialists led by former IMF-chief, Michel Camdessus, had called for a doubling in financial flows to the sector. Although funding for water has increased, such a radical rise has not materialized. In its absence, increased focus needs to be placed on reducing costs through efficiency gains, adjusting future expectations to match funding and mobilizing additional sources through innovative financing.

The report "Water for All: An OECD Perspective on Pricing and Financing" that was launched at the 5th World Water Forum, called for the establishment of a new funding model for distribution services of water and sanitation in developing countries, based on **the "3T" tariffs, taxes and transfers**. At the 5th World Water Forum in Istanbul, the Ministers acknowledged that: **"exclusively economic approaches and tools cannot capture all social and environmental aspects in cost recovery. Financing strategies should be based on a best possible use and mix of tariffs for all forms of water services, taxes and transfers to cover needs related to infrastructure development and extension, operation and maintenance"**.

In the Mediterranean, the situation is very mixed, both in features of the pricing and in its implementation.

2.2. Description

The important issue is to consider the cost recovery scheme for the overall sanitation cycle in order to have a clear picture of all the costs and to match them with the necessary financial resources: tax payer money, tariffs and fees, and international financial aid (i.e. the 3 T according to the terminology of the OECD). This approach aims at answering the question "Who pays what?"

The importance of the 3Ts as a concept should not be overstated; it merely represents a classification to analyse financial flows. This then flows into a policy dialogue on how to reconcile the sanitation sector's financial needs with its revenue sources, cost reduction opportunities, and opportunities for tapping into commercial funding sources. Similarly, Strategic Financing Planning (SFP) is not in itself sufficient to implement water infrastructure; it must be accompanied by good WSS governance (participation, transparency, accountability, rule of law, effectiveness, equity, responsiveness, responsibility, etc.). This process needs to be coordinated across different ministries and other levels of government (local and regional authorities), and include appropriate consultation of civil society.

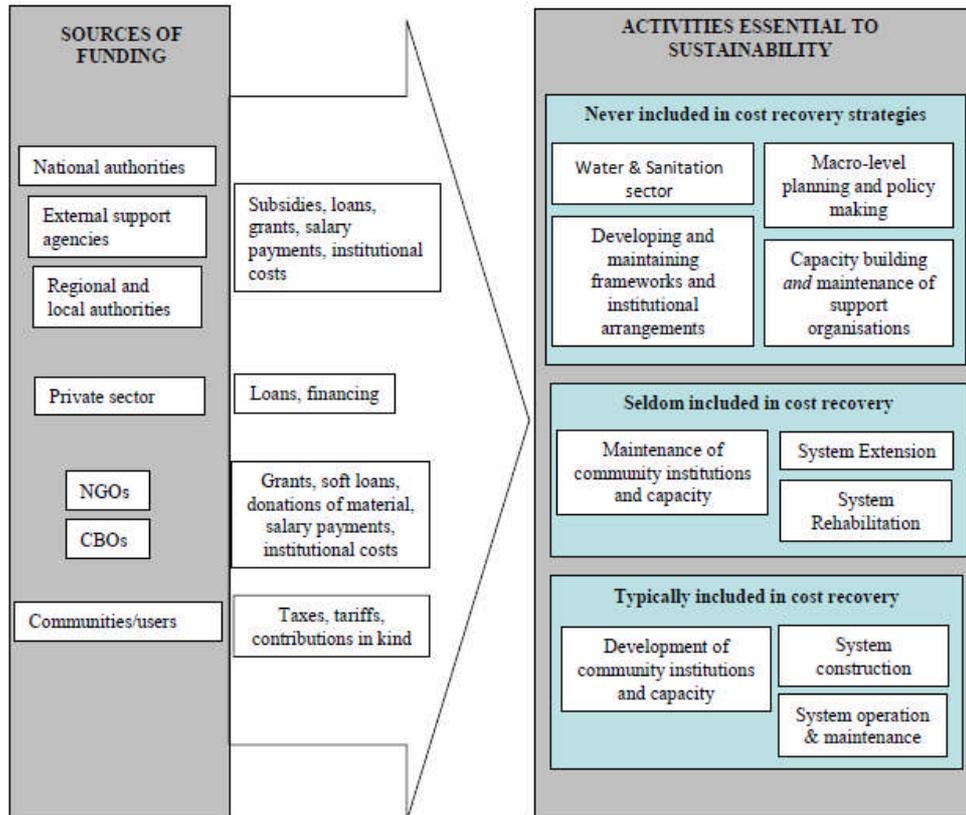
In a cost recovery scheme for the sanitation sector, the funding sources to be considered are:

- Tariffs, taxes and fees: the polluter-pays principle is usually applied in the form of:
 - o Tariffs related to the level of pollution discharges for industrial waste water or level of water consumption for households;
 - o Environmental taxes on certain products particularly pollutants (e.g. detergents)
 - o Revenues from the valorization of sub-products of sanitation (e.g. reuse of sludge, the production of energy, treated wastewater for irrigation or industry).
- State budget in the form of grants to operators or service users
- International mechanisms for development assistance in the form of loans or grants for projects or budget support operation.

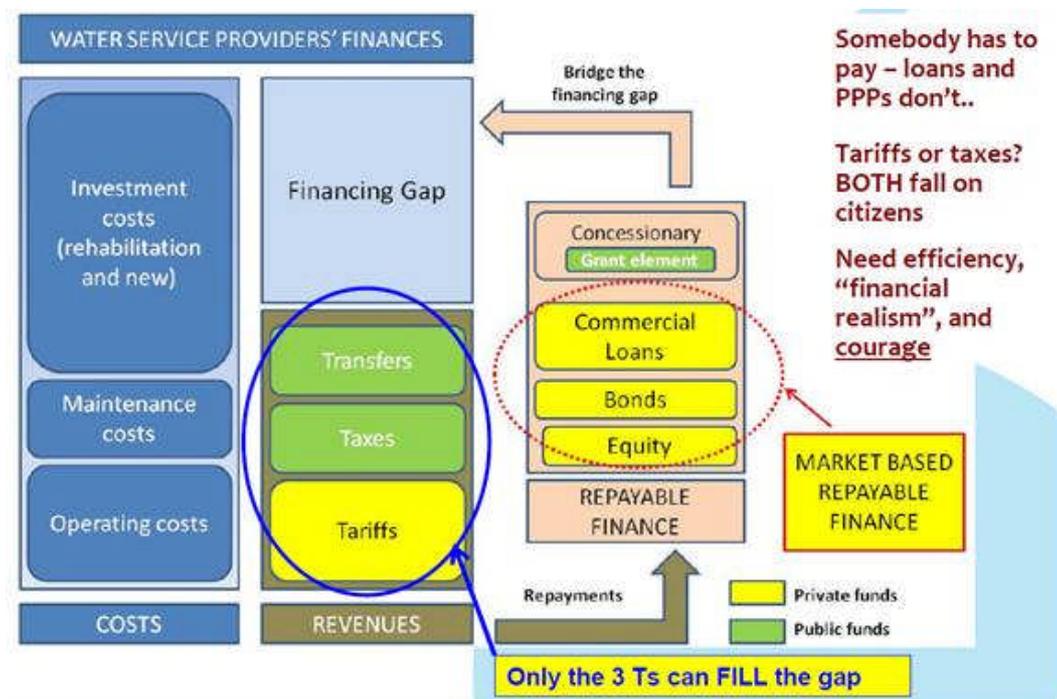
To implement a scheme of sustainable cost recovery, particular attention should be paid to:

- The evolution of the recovery scheme in time,
- The definition of fair and socially acceptable pricing with evaluation mechanisms,
- The role of different actors: different levels of public authorities, operators (efficiency of waste water treatment), users (industrial and domestic: reducing pollution discharge).

The crucial point is that unless all the costs related to providing and maintaining a service (technical, human resource, institutional) are identified and covered a system cannot be considered to be sustainable. The following figures show the source of funding for a sustainable cost recovery of water & sanitation services, and respond also to the question: who really pays and how we can all pay less for water & sanitation services.



Sustainability requires the matching of ALL costs related to providing a sustainable service, with ALL the available sources of funding

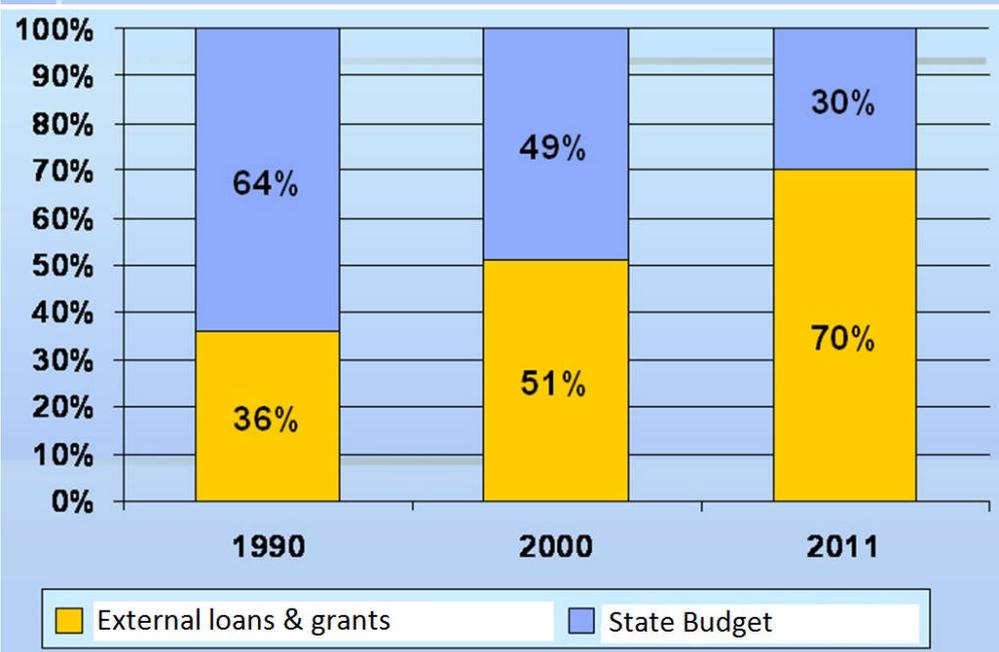
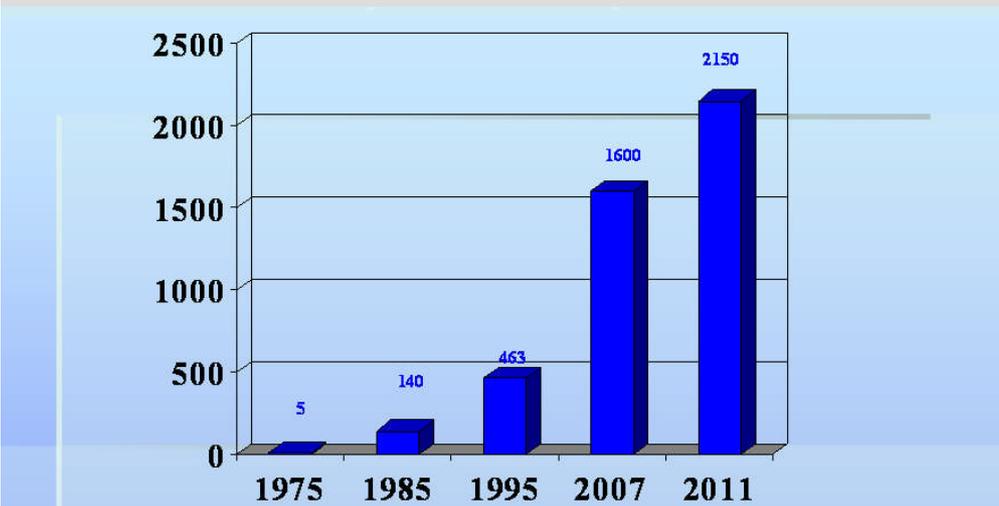


Box 1. Tunisian study case

In the case of Tunisia for instance, the National Office for Sanitation (ONAS) has established a strategy for cost recovery at medium and long term, based on the following axes:

- ❖ Upgrading of old infrastructure,
- ❖ Continuation of the national effort to spread sanitation services in urban areas for the benefit of all citizens
- ❖ More orientation towards the new remediation technologies and treatment processes up to date
- ❖ The preservation of financial balances to sustain the industry
- ❖ Strengthening the private sector

Cumulative investment for the development of the sector
(in Tunisian Dinars)



Evolution of Investment financing schema

On the other hand, sanitation sector in Tunisia also makes use of external

resources such as: Multilateral concessional loans (IBRD, ADB, IDB, EIB etc...) and Bilateral (AFD, KfW, JICA etc. ...), grants awarded as part of bilateral cooperation (France, Germany, Japan, Belgium, Switzerland, Luxembourg etc...), and International (FEMIP-FIV, GEF, IBRD, IDB, ADB etc...), as well as recycling debt (debt-swap).

The tax for sanitation in Tunisia is the main resource for ONAS, and was established since the creation of ONAS. Currently, it covers 60% of operating charges income including depreciation, and 90% excluding depreciation. The principles of this tariff are as follow:

- Domestic users: single rate for all categories of consumption
 - progressive rate per consumer
 - users consuming less than 20 m³/quarter (social block) widely supported
 - Users polluting activities: polluter / payer
- Standard wastes: billed at cost
 - Wastes exceeding standards: billed at cost plus a fee on the additional pollution
- Other economic activities:
 - billed at actual costs

On the other hand, the use of BOT contracts consists in involving the private partner in the financing, construction and operation of sanitation projects of significant size. As such ONAS prepared the tender documents necessary for the implementation of 2 STEPs in BOT total capacity of about 100,000 m³ / d.

The private sector allows: i) to optimize the roles between the private and public sectors; and ii) to provide citizens and others with high-quality services at bearable cost levels.

Use of by purifying sub-products (Treatment plants sludge):

- The anaerobic stabilization of treatment plants sludge of sizes of more than 100,000 people enables fermentation of its sludge and a production of Bio-methane-rich gas (65%).
- The valuation of Bio-gas cogeneration enables a power generation (35%) and heat energy (55%).The heat energy will be used for heating the digesters, and the electrical energy will supply partial (30%) stages of the treatment process.

3 Solutions:

Setting up a clear regulatory and institutional framework has become necessary to face the problems of financing sanitation sector services and all related responsibilities and means: depolluting, financing (transfers from different government levels or between sector, such as energy, water sectors), invoicing, control/police, etc. This was proposed by eWATER as a case study from the Community of Valencia (Spain). During the discussions that took place in Marseille at the occasion of the world water forum, some other alternatives have been mentioned such as: Providing incentives to reduce pollutant discharges (Output oriented grants or loans with economic added value for the beneficiary); Effective police and invoicing system; Reducing global cost of sanitation by implementing simple technologies easy to maintain; acceptable SCR schema (tariffs for operation & maintenance or taxes & transfers for investment); setting up fair tariff structure (affordability or ability to pay to be considered), and transparency in calculation and revision of tariff.

On the other hand, some other solutions emerged such as: generating new revenues (reuse waste water & sludge, energy production). For reuse, socio-economic studies are necessary to assess feasibility (Payment for ecosystem; Ecotax / environmental tax, etc.)

An example of such taxes has been proposed by the European Environmental Agency (EEA): European governments could simultaneously reduce income tax, increase innovation and cut pollution by introducing well-targeted environmental taxes and recycling the revenues back into the economy. This was one of the findings from a pair of reports (<http://www.eea.europa.eu/publications/environmental-tax-reform-in-europe> & <http://www.eea.europa.eu/publications/environmental-tax-reform-opportunities>) on environmental tax reform (ETR) published at early 2012 by the European Environment Agency (EEA). This Environmental tax reform is defined as 'reform of the national tax system where there is a shift of the burden of taxes, for example from labour to environmentally damaging activities, such as unsustainable resource use or pollution'. There are at least four possible types of effects of ETR. The first effect is to make various goods or activities more expensive, while the second effect comes from the direct or indirect distribution of this extra revenue. Thirdly, job creation and eco-innovation may be another result of this process. And lastly, effective ETR will also result in environmental benefits, for example by reducing pollution.

Environmental taxation also has an important role to play in spurring innovation, according to a broad range of studies. By increasing tax on pollution and other environmentally-damaging activities, governments can use the extra funds to provide incentives for innovation, such as developing renewable energy. For advanced economies like the EU, such schemes also create new technologies which can be exported globally.

In our context, such taxation can contribute to finance a part of sanitation services. The basis of this ecotax are products that have a direct influence on the operation of the sanitation network at 2 levels: (Level 1: The products that generate large volumes of water not included in the basis of the tax: mineral water, soft drinks; Level 2: The products that generate pollution in their reuse (detergent, bleach ...). A summary assessment of income that could come from this tax by allocating 2% to miscellaneous commodities maintenance of detergent, bath products and beauty products, mineral water, soft drink, will ensure additional revenue of approximately 10% of the sanitation fees.

To resume all the solutions and after taking into account the presentations of the session Med 4.2 that took place in the World Water Forum of Marseille, hereafter (Table 3.1) the main solutions identified to ensure the financial sustainability of quality sanitation services for all:

Table 3.1: Solutions proposed

Solution	Country	Type	Organisation
Legislative and financial framework for domestic and industrial sewerage systems in Valencian community (Spain) 1	Spain	Existing solution	eWATER
Implementation of a program of urban wastewater treatment: case of Morocco through the experience of ONEP 2	Morocco	Existing solution	ONEP
Sustainable cost recovery of sanitation services 3	Tunisia	Existing solution	ONAS
Small treatment plant for small communities 4	France	Existing solution	French Water Agency "Rhône Méditerranée & Corse"
The use of a new process based on an alternative source of energy to the Wastewater Treatment Plant (WWTP) 5	Israel	Emerging solution	Blue Plan Consultants: Eran Feitelson and Yuval Laster
Institutional and regulatory framework for a sustainable financing of sanitation services 6	France	Existing solution	The Metropole of Nice-French Riviera (NCA)
Sewage Infrastructure Development 7	Israel	Existing solution	The water Authority (The Sewerage Infrastructure Development Administration)

- ❖ 1 See annex 1 & <http://www.solutionsforwater.org/solutions/legislative-and-financial-framework-for-domestic-and-industrial-sewerage-systems-in-valencian-community-spain>
- 2 See annex 2 & <http://www.solutionsforwater.org/solutions/implementation-of-a-program-of-urban-wastewater-treatment-case-of-morocco-through-the-experience-of-onep>
- 3 See annex 3 & <http://www.solutionsforwater.org/solutions/sustainable-recovery-of-the-costs-of-sanitation-services>
- 4 See annex 4

5 See annex 5

6 See annex 6

7 See annex 7

4. Limits of the approach & areas to be further investigated

A demand-based approach requires implementing agencies to find out what potential users want and what resources they have to finance and manage installed systems and to design systems, financing mechanisms, and support structures that are best suited to their needs. Adoption of strategic sanitation principles has already been seen to deliver results. The examples of the use of strategic sanitation principles (learnt from some countries experiences) demonstrate that such an approach can generate better projects. These successes have helped to build capacity within implementing agencies as well as enhancing the ability of communities to make sustainable sanitation improvements.

Overall, little use has been made of repayable sources of finance such as bank loans and bonds, while the take up of private equity has been patchy and problematic. Nor has tariff revenue been seen as a potential source of investment finance. Against this background, any financing which lessens the relative weight of ODA and government subsidy is “innovative” even if it uses well-tried sources. In practice, much “innovative” finance consists of combining existing sources in non-traditional ways. In one survey financial innovation is identified with sub-sovereign, decentralised, demand-responsive actions:

“Innovation in financing seeks to maximise harmonisation and collaboration by funders, to support effective decentralisation of services and decision making and to help utilities to become commercially viable. Innovations seek ways to leverage local liquidity and to apply microfinance approaches to the sector. Innovations also help international donors to directly support devolved organisations and even in some cases local community organizations. At national level, the major task is to help Governments to shift financial resources to devolved bodies to match their new responsibilities and to finance effective structures and practices that are demand responsive.”

The split between the three basic sources of revenues differs between countries. Tariff revenue is still well short of covering O&M in many places. Governments have various channels through which subsidies are made to different branches of the water & sanitation sector. ODA is an important source in many poorer countries, and the trend of donor commitments is at last turning upwards. National and – especially – international NGOs are major funders and large private foundations are now major players. Different countries vary in their choices between the 3Ts – tariffs, taxation and transfers (including ODA). At one extreme, poor countries tend to draw heavily on transfers from ODA and local and international philanthropy to cover capital costs and much of recurrent costs too. At the other extreme, some developed countries with mature water systems raise all or most of their revenues from water & sanitation services users through tariffs, earmarked taxes and other charges.

In the Mediterranean region, there are many success stories that deserve to be highlighted. Hence, the regional observatory on sustainable cost recovery for water &

sanitation services proposed by the TSG responds to the aforementioned limits of the 3Ts approach. Such regional observatory will involve public and private utilities, local authorities, national institutions, consumers and international donors, with the aim to contribute to a better knowledge of current situation, to raise awareness for decision makers and citizens, and also to foster the exchange of experiences between and within the Mediterranean countries.

5. Commitments:

Based on the work carried out by the TSG before and during the 6th World Water Forum, the following commitments were expressed:

At local and national levels the following commitments were expressed:

- ❖ Full cost recovery will be achieved within 5 years (2017) in Israel for water and sanitation services – commitment by (Desalination Department, Israel Water Authority)
- ❖ Minimizing tariffs increases thanks to better efficiency and inter-sector financing for the next 10 years in Nice Metropole area - – commitment by (Métropole Nice Côte d'Azur)

At the Mediterranean level, the following commitment was declared by EMWIS: launching a water & sanitation services cost recovery observatory This commitment was proposed in the preliminary target report, and confirmed by the Moroccan Minister of Energy, Mines, Water & Environment: Fouad Douiri, in Marseille during the session: Increasing Water Use Efficiency in the Arab Countries. The aims are to improve knowledge of current situation, raise awareness for decision makers and citizens, and exchange of experiences. The implementation will be carried out with public and private utilities, local authorities, national institutions, consumers and international donors.

6. Target action plan

6.1 Links to other objectives-targets of the 6th WWF

a) Thematic process:

- [Condition of Success CS2 "Financing Water for All"](#) target 4 on the entry into national policies of water sustainable cost recovery through tariffs, taxes and international transfers.

- Target 4 of [Priority Action 1.3 "Improve the health and hygiene through water and sanitation,"](#) in relation with the publication of the total expenditure on water and sanitation,
- Priority Action 1.2 "Improve access to integrated sanitation for all"

b) African regional process:

- Priority 5 "Develop and implement innovative financial mechanisms, including taxes, tariffs and transfers in all countries"
- Priority 1 "Develop and implement plans for sanitation and water"

c) Europe regional process:

- Priority 7 "Improving European services of drinking water and sanitation" (EU7)

Therefore, it was necessary to coordinate and manage the synergy developed with the CS2 and EU7 all along the preparation process and during the sessions of the world water forum in Marseille. Sanitation raises a different set of financing issues. Effective demand and willingness to-pay tends to be less than for water. In peri-urban and rural situations the largest part of funding often comes from householders themselves alongside their inputs in kind. Where networked systems are required for collection (sewerage) and wastewater treatment, the major outlays required are normally met by municipalities or water authorities, with payment recovered from surcharges on water tariffs. Compared to water supply, the safe disposal of human waste and household wastewater has a larger proportion of external social benefits, which often justify public subsidies.

The approach followed in this report is that there is an important distinction between basic revenues, on the one hand, and repayable funding sources, on the other. The revenues provide an assured cash flow which can be used to attract (leverage) funding which will be repaid from these future revenues. If basic revenues are inadequate, and likely to remain so, then loans, bonds and equity are not feasible, and cannot substitute for this basic deficiency.

6.2 The Target action plan

	<u>IMPLEMENTATION OF THE TARGET</u> Expected results & Indicators of Success	<u>PRACTICAL STEPS</u> Activities to be done/	<u>RESPONSIBLE PARTIES</u>	
			Lead institution	Main partners
Milestone 1: Get the worldwide picture of the sanitation sector financing				
August 2011	<ul style="list-style-type: none"> - Get the picture of the sanitation sector financing policies: <ol style="list-style-type: none"> 1. Mediterranean countries (Morocco, Tunisia, ..) 2. OECD, EIB, World Bank reports - Identification of potential new partners (in addition of the current list) 	<ul style="list-style-type: none"> - Among the TSG, exchange of information about sanitation financing: existing or not existing, mandates, activities,... - Submit Target Action Plan 	EMWIS/ONAS	TSG
September 2011	<ul style="list-style-type: none"> - To precise the target deadline and Sanitation cost recovery approaches from different countries - Draft Target finalized by the TSG 	<ul style="list-style-type: none"> - Inventory of potential solutions - Rough evaluation of the 3Ts approach - Use existing regional and global networks to implement the inventory (OECD, EIB, World Bank..) 	EMWIS/ONAS	TSG members Existing regional and global networks to implement the inventory

	<u>IMPLEMENTATION OF THE TARGET</u> Expected results & Indicators of Success	<u>PRACTICAL STEPS</u> Activities to be done/	<u>RESPONSIBLE PARTIES</u>	
			Lead institution	Main partners
September 2011	<ul style="list-style-type: none"> - Main documentation about the target - Creation of a framework to identify the potential solutions from Countries experiences 	<ul style="list-style-type: none"> - Inventory of useful documentation 	EMWIS/ONAS	TSG

	<u>IMPLEMENTATION OF THE TARGET</u> Expected results / Indicators of Success	<u>PRACTICAL STEPS</u> Activities to be done/	<u>RESPONSIBLE PARTIES</u>	
			Lead institution	Main partners
October 2011	<ul style="list-style-type: none"> - Case studies for identification of concretes or innovative solutions collected - Collection of existing and innovative solutions in the Med countries 	<ul style="list-style-type: none"> - Framework for collecting the case studies prepared in July, and organization of the work, distribution of tasks - Collect case studies thanks to networks, relationships, documents 	EMWIS/ONAS	TSG members EMWIS National Focal Points
December 2011	Identification of current patterns of cost recovery (some) Mediterranean	- Identifying current patterns among the solutions collected	EMWIS/ONAS	TSG members EMWIS National Focal Points

	<u>IMPLEMENTATION OF THE TARGET</u> Expected results / Indicators of Success	<u>PRACTICAL STEPS</u> Activities to be done/	<u>RESPONSIBLE PARTIES</u>	
			Lead institution	Main partners
WWF 6	- Target session	<ul style="list-style-type: none"> - Presentation and debate of solutions - Presentation and discussion on the action program draft - First commitments from donors to support the action program - After the Forum, dissemination of the outcomes (guidelines? book?) 	EMWIS/ONAS	TSG members Sanitation Operators Donors EIB, AFD, OECD, World Bank
January 2012	<ul style="list-style-type: none"> - Finalization of the action program - Financial support is identified 	<ul style="list-style-type: none"> - Case by case, identification of weakness of existing sanitation financing approaches (using the framework designed in end 2011) and based on the solutions coming from WWF 6 - Communication on the action program 	EMWIS/ONAS	TSG members Sanitation Operators Donors EIB, AFD, OECD, World Bank

	<u>IMPLEMENTATION OF THE TARGET</u> Expected results / Indicators of Success	<u>PRACTICAL STEPS</u> Activities to be done/	<u>RESPONSIBLE PARTIES</u>	
			Lead institution	Main partners
February 2012	- Additional potential solutions requested	- Contacting other countries representatives for providing potential solutions (eg: Egypt, Spain)	EMWIS/ONAS	Alexandria Water Company/ eWATER, Spain/ ONEP/ Nice Côte d'Azur Metropole/ Water & Sewage Authority, Israel/
March 2012	- Agreement on the concepts of the approach to cost recovery scheme development	- Adoption by the participants of the concepts approach prepared previously on the cost recovery scheme development	EMWIS/ONAS	TSG members Sanitation Operators Donors EIB, AFD, OECD, World Bank
2015 (WWF7)	Implementation of the action program Identify gaps and shortcomings and seek ways forward Establish monitoring mechanism	- Following up	EMWIS/ONAS	TSG members Sanitation Operators Donors EIB, AFD, OECD, World Bank

	<u>IMPLEMENTATION OF THE TARGET</u> Expected results / Indicators of Success	<u>PRACTICAL STEPS</u> Activities to be done/	<u>RESPONSIBLE PARTIES</u>	
			Lead institution	Main partners
2018 (WWF8)	Follow-up on target's implementation, identify gaps and shortcomings and seek ways forward Follow up on the monitoring mechanism Report progress during WWF 8	- Following up	EMWIS/ONAS	TSG members Sanitation Operators Donors EIB, AFD, OECD, World Bank...
2020	Report on target's status – carry out assessment of implementation process and identify mechanisms for further implementation	- Following up	EMWIS/ONAS	TSG members Sanitation Operators Donors EIB, AFD, OECD, World Bank...

7. Recommendations for follow-up

The three basic sources of revenue for water and sanitation services are tariffs, taxation, and transfers, including ODA (the 3Ts). The 3Ts and the three repayable sources have long been, and are likely to remain, the foundations of water financing. A general undertaking by the government (central or municipal) to underwrite the deficits incurred by WSS providers: This could amount to an open-ended commitment or, preferably, an explicit programme (e.g. a 5-year performance contract or the contracts-plans common in francophone countries) agreed between the government and service provider, containing mutual undertakings and commitments to increase tariff revenues. Subsidies for capital expenditure: Government support for investment in the form of grants, long term subsidized loans or sovereign guarantees is widespread. It is implicit in the common pricing yardstick that providers should initially aim to cover O&M costs, and then move towards full recovery of capital charges as affordability rises.

Moreover, we should identify innovative financing mechanisms that can help provide water and sanitation services for “hard-to-reach” low-income consumers, in rural, peri-urban and urban areas. Providing sustainable services to those consumers will require estimating costs based on a lifecycle-cost approach and financing services on a sustainable basis, as opposed to the unfortunately too-common approach of “feast and famine” which consists of giving infrastructure away for free, without considering how the operations and maintenance costs will be financed. In many African countries for instance, the financing of water infrastructure has traditionally come mainly from donor grants and concessional loans.

Two sets of actions are required in adopting strategic sanitation: formulation of a demand based policy, and development of an institutional framework to provide the incentive structure to induce the key players in the sector to implement the policy. The sectoral and project-level institutional framework should be in place before attempting to implement the demand-based approach. It should be adaptable and able to respond to new developments and lessons from experience

The water & sanitation community should keep the unfolding international financial situation under constant review (e.g. through the formation of a standing group or virtual network convening regularly) to consider its implications for water & sanitation infrastructure, and propose mitigating measures that could limit its harmful impacts:

- Governments should be encouraged to extend and deepen their financial commitments to water & sanitation, specifically to make medium term (3-5 year) budgetary commitments, in return for performance contracts with water service providers
- Likewise, bilateral donors should be encouraged to (continue) aligning their ODA (official development assistance) to national needs and institutional processes, to provide the reassurance of reliability and continuity necessary for their national partners to plan and implement their sanitation investment programmes and to leverage repayable funding (OECD, AMCOW, EUWI, etc)
- Promote the concept of sustainable financing through the development of national water and sanitation Financing Strategies (EUWI, OECD, WSP)
- Review the status of, and demand for, the various kinds of innovative financing mechanisms, involving public and private sector providers, NGOs, governments, and

other relevant stakeholders. (AfDB, AFW, EIB, World Bank, donor agencies, banks & insurance companies, facilities)

Policy makers are called to define a clear SCR strategy; indeed, they directly control 2 of the 3 Ts:

- ❖ Tariff policy: define tariff level, structure and adjustment mechanisms; check affordability for the poor; consider new solutions (e.g., payment for ecosystem services vs. polluter-pays principle)
- ❖ Taxes: Reliable budget funding (consider performance-based funding)
- ❖ Improve effectiveness in the allocation and use of grants

It is recommended also to create innovative financing mechanisms based on the “1% water and sanitation solidarity levy” introduced for example in France via the Oudin-Santini law adopted in 2005, so that financing for water users in the South can come directly from water users in the North.

The main recommendation of the current work is to create a Mediterranean observatory for comprehensive follow-up, from Mediterranean countries perspective, on the cost recovery policies of sanitation services and the financing mechanisms of the sanitation sector. The functions of this observatory would include documentation, integrated data management, and knowledge dissemination with a view to supporting the agents of regional follow-up to projects, programs, and policies. Since the observatory involves a training, research, and decision-making support dimension, we recommend that the responsibility for this observatory rest with a consortium of decision-makers, regional development agencies, and academics. The purpose will include to communicate (Put information at everyone’s disposal “to bring to attention”; Valuation of the good practices “notion of promotion”); to decide on the orientation of public policies, to follow-up the impact of sanitation pricing, and to carry out the necessary evaluation.

Such observatory on sanitation services will offer national & regional online access to public data on the organization, management and performance of services. These elements are used to evaluate the economic, technical, social and environmental quality of services on an objective, recognized basis, shared by all stakeholders in the sanitation sector. In the long term, the observatory will thus go beyond simple reasoning in terms of the price of sanitation services and cover all the technical and financial issues related to services. Using the observatory's data will help in clarifying the sustainable assets management issues facing services.

In addition, this observatory will be created in response to an urgent need for information and analysis for the discussion of the mechanism for a sustainable cost recovery of the sanitation services. The Observatory will propose identified actions for the improvement of exchange of information and good practices between the Mediterranean countries. The Observatory as a tool is expected to help the Mediterranean countries to obtain a consensus in formulation of policies, financing,

planning, and programming implementation mobilization of resources, monitoring and pursuit of the activities of the observatory in a coordinated way. The Observatory will be the first initiative to improve the collection, handling, analysis and use of the information on financing mechanisms of the sanitation sector in the formulation of more effective sectoral policies in the Mediterranean. It will be designed like a useful instrument to policy makers, planners and civil society for the development of a sustainable cost recovery.

8. Conclusions

Some reflections are offered on the impact on sanitation financing of the current international financial crisis. A select number of practical suggestions are made for taking forward the issues suggested in this report.

There are no “best practices” for cost recovery, or management structures that can be replicated to ensure that the system will function optimally during 30 years. Rather, projects and programmes with successful financing and cost recovery strategies tend to share common principles which have been found to contribute to sustainable systems.

While there is some agreement within the water & sanitation sector that consumers have to pay for water & sanitation, methods and tools for ensuring access to improved services by the poor remain highly debatable while many of the above mentioned knowledge gaps still remain to be properly addressed. Tackling these problems and translating validated principles and procedures into guidelines and capacity development tools needs an urgent and concerted effort.

Certain peculiarities of the water & sanitation sector dictate its heavy reliance on public financial support, directly and indirectly:

- Because of the risks it poses, water & sanitation is the least attractive infrastructure sector for commercial finance or equity.
- There is a fundamental difference between basic revenues (from tariffs, public budgetary allocations, ODA and other solidarity transfers) and repayable funding (loans, bonds & equity). The two types are not substitutes, except in the short term.
- Sustainable financing entails securing the basic revenue flows from the various sources, and using these to leverage repayable funding according to what is necessary and feasible. Various facilities can be drawn on to bridge the two types of finance.
- Commercial debt (loans or bonds) is a feasible part of a financing package, if it can be supported by future revenues
- A long term, low interest loan in local currency available to sub-sovereign entities is a good match for the financing needs of most kinds of water & sanitation infrastructure. IFI lending is well suited for infrastructure, though it is normally denominated in foreign currency.
- In addition, private involvement (PSP) in its various possible forms, including equity, is also desirable, though this depends on a realistic division of risks between the various parties, and may need external risk mitigation.

- The link between the basic revenue stream and the repayable funding sources is provided by a range of risk-sharing and other leveraging facilities. These can mitigate political, regulatory, credit and sub-sovereign risks. They can also improve the overall structure and terms of a financial offer to fit the specific project.
- The current international financial climate creates great uncertainty for all kinds of commercial and private funding, and even public budgets are not immune from the problems. In these circumstances sanitation service providers will need to reinforce their basic revenues, and take all feasible internal “housekeeping” measures to improve their financial viability without seeking recourse to external finance.

Challenges of financing sanitation infrastructure remain enormous. The Sanitation sector has to be handled in a unique manner. Hence, it is recommended to look for a Cocktail funding corresponding to the nature of investment.

Full Cost Recovery Tariffs still remain difficult to reach for developing countries and even for some developed countries, while social Mission Investments should be financed by Grants; viable investments may opt for Loans.

It is essential to underscore the need for improvement in utility efficiency and adoption of good commercial practices as a prerequisite to ensuring sustainable financing from both public and market purse.

During the world water forum session related to our target, the following take away messages were delivered:

- ✚ Effective right to sanitation requires SCR
- ✚ Achieving Sustainable Cost Recovery is a shared responsibility
- ✚ Better knowledge on the use of the 3T in Mediterranean countries is necessary
- ✚ Tariffs strategies are necessary
- ✚ Affordability must be assessed locally especially for vulnerable groups.
- ✚ New sources of revenue needs further analysis
- ✚ Financial sustainability is largely a political choice (Rules, responsibilities for tariff-setting tariff and updating)

Finally, there is a need to exchange good practices and efficient solutions between the Mediterranean countries, and apply those solutions that work well. However, the commitment of all the national stakeholders (including all the involved ministries, such: ministries of finance, ministries of industry, ministries of water, ministries of environment, private operators, etc) is necessary to make a solution works, and especially to achieve a sustainable cost recovery (SCR) for sanitation services.

9- Annexes

Annex 1: Legislative and financial framework for domestic and industrial sewerage systems in Valencian community (Spain)

Since 1993, the Valencian Regional Government enjoys a financing tool, which at that time was the first in Spain and inspired many other similar ways to finance sanitation water services in Spain. This Canon is really an environmental tax because it pursuits the improvement and the conservation status of the Environment of the Valencian Community. For spilling control, the Public Entity for Waste Water Sanitation of the Regional Government of Valencia designs spilling plans for those towns with an important industrial sector. Once the Plan is done and permanent and momentary sample taking apparatus are installed, the control is carried out by the City Council, reporting to the Public Entity.

CONTRIBUTOR(S) :

Jose María BENLLIURE, Ignacio ORTS, Enrique CIFRES

Brief description

Since 1993, the Valencian Regional Government enjoys a financing tool, which at that time was the first in Spain and inspired many other similar ways to finance sanitation water services in Spain. It was approved by the Valencian Parliament by Law 2 / 1992 of March 26. Nowadays covers the financing needs to address investment, operation & maintenance of wastewaters in the region, even allowing improving reuse economical conditions for treated effluents.

This Canon is really an environmental tax because it pursuits the improvement and the conservation status of the Environment of the Valencian Community. For spilling control, the Public Entity for Waste Water Sanitation of the Regional Government of Valencia designs spilling plans for those towns with an important industrial sector. Once the Plan is done and permanent and momentary sample taking apparatus are installed, the control is carried out by the City Council, reporting to the Public Entity.

As well, a sewage tax is demanded and collected by the Public Entity for Waste Water Sanitation of the Regional Government of Valencia. This tax is based on waste water production through water consumption of any means.

The set up of the Sewage Tax, which adds up both service and consumption set up, is determined through the fix annual duties of the Budget Law of the Regional Government.

River Basin Authorities are in charge of the monitoring of all the water discharges to the Public Water Domain. These organisms perform a thorough supervision of all the discharges, by taking samples of the outlet flow from the treatment facilities, which are then analyzed. These controls are the same for either public or private water treatment plants.

Also some Municipalities, those with large industrial estates, supervise the quality of the water discharges to their sewage systems, but on a more sporadic basis.

Each water treatment plant is designed taken into account the total incoming flow that will receive. If the treatment plant receives a very contaminating incoming flow during a long period, the Regional Sewage Entity (which is the organism in charge of the

operation of the water treatment plant) undertakes an investigation to find the source of the polluting discharge. Once the polluting enterprise is identified, sanctions are applied to it and measures aimed at avoiding future contaminating discharges are put in practice. It is usual that the factory is then required to construct its own water treatment plant.

Location: The solution is implemented in the whole territory of the Valencian Community. It is located in the eastern side of the Iberian Peninsula, by the Mediterranean Sea.

Actors:

The project was initiated by the Counselor on Public Works of the Valencian Regional Government and approved by law by the Parliament. The stakeholders, really, are all the Valencian citizens due to the fact that the law is applied to every domestic or industrial water users. However it must be said that, as well as the Regional Government, also the main Municipalities and Utilities were involved.

Problem to solve

How can be assured the financing funds for a sustainable operation of wastewater treatment, the replacement investments and the promotion for wastewater treated waters reuse?

Added-value and cost effectiveness:

The main output is that has been proven how the public system for water treatment can be assured approaching to the principle "polluter pays" and preserving environmental conditions of water masses which have to receive treated wastewaters.

Monitoring:

The solution is 100% implemented and some problem during the first stages of implementation were corrected and the system improved. The main indicators of success could be the rate of foreseen incomes and the balance between incomes and needs.

Only updating the applied taxes must be expected.

Implementation and replication potential

Other regional governments in Spain took into account this initiative has been inspired in order to implement similar solutions. Other administrations around the Mediterranean that have to face the financing problem of the wastewater system operation could be interested. This solution can be taken only in the context where the responsible administration has the legislative competence to impose taxes.

Key lessons learnt

The main lesson learnt is the financing the wastewater treatment and the protection of ecosystems are completely coupled and only a direct taxes, involving all the sectors, domestic & industrial, and all the citizens assure the future operation of the facilities.

Existing commitments

The regional government created an Agency, EPSAR (Public Entity on Sanitation and Wastewater), committed to manage the incomes and to take care of the conservation and operation of the wastewater treatment system. <http://www.epsar.gva.es/>

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Supporting material :
<http://www.epsar.gva.es/sanejament>; <http://www.epsar.gva.es/>; www.intercontrol.es

Annex 2: Implementation of a program of urban wastewater treatment: case of Morocco through the experience of ONEP (Morocco)

According to the Recommendations of the Inter-ministerial Committee for Water in February 2005, a national sanitation program PNA was prepared on a national scale. The objectives of this program are as follows for 2020:

- Completion of an overall rate of connection to the sewer system by 80% in urban areas;
- Achieving a rate of urban wastewater treatment in at least 60%.

CONTRIBUTOR(S):

Hajiba Bourziza, ONEP

Brief description

According to the Recommendations of the Inter-ministerial Committee for Water in February 2005, a national sanitation program PNA was prepared on a national scale. The objectives of this program are as follows for 2020:

- Completion of an overall rate of connection to the sewer system by 80% in urban areas;
- Achieving a rate of urban wastewater treatment in at least 60%.

Location

The solution was implemented in Morocco: It covers 260 towns and cities with a total population of over 10 million in 2005.

Actors

ONEP, and local authorities

State of progress

To overcome the delay in the sanitation sector, the proposed program includes:

Investments to rehabilitate and expand wastewater systems, connecting users and strengthen the system of storm water drainage;

Investment in primary, secondary and tertiary municipal wastewater;

Acquisition of operating equipment.

It covers 260 towns and cities with a total population of over 10 million in 2005. It does not include facilities that are managed by private concessionaires. The total investment for this program is about 43 billion dirhams.

Added-value and cost effectiveness

Mobilizing funding from international donors and the public contribution by the following process was chosen to cover the financing of this important program, as follows:

- The general budget of the state involves part of the funding with up to 400 million dirhams / year from 2006, representing 30 to 50% of project funding. Similarly other financial arrangements involving public donors may also be considered for some projects: Department of the Environment, the Ministry of Interior, the Special Fund for the Habit and the Hassan II Fund for Economic and Social Development ; taxes on positioning concessions career in the Public Domain Hydraulics and production of drinking water

- Managers of the service sanitation as ONEP and Autonomous Authorities resort to loans from domestic banks or international donors for additional funding.
- Operating expenses should be covered users through tariffs will rise by an average of 2 dirhams in 2005 to about 3.5 dirhams in 2020.

These rate increases will ensure the financing of part of the investment program and loan repayment.

The sale of treated wastewater for reuse should also be covering some of the costs of treatment but there is currently no formal procedure to execute to implement the sale.

Implementation and replication potential

Meanwhile the various parties (producers of treated wastewater and re-users) have resorted to bilateral contracts, for example:

- The reuse of treated wastewater for irrigation of golf courses (as in Marrakesh, and Benslimane ...)
- Reuse of wastewater for landscape irrigation and agricultural (if Tiznit and Agadir ...)
- Reuse of treated wastewater for industrial needs (washing phosphate Houribga).

Key contact institution

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Supporting material

www.onep.ma

Annex 3: Sustainable cost recovery of sanitation services (Tunisia)

The sanitation sector is one sector budget-both at the level of investment needed for development and renewal of drainage structures at the level of exploitation of works in service which will affect the financial balance of the sector. To preserve this balance there is place to develop tools and mechanisms that allow i) to plan profitable investments and ii) to cover the costs of sustainable services provided.

Brief description

The sanitation sector is one sector budget-both at the level of investment needed for development and renewal of drainage structures at the level of exploitation of works in service which will affect the financial balance of the sector. To preserve this balance there is place to develop tools and mechanisms that allow i) to plan profitable investments and ii) to cover the costs of sustainable services provided.

In terms of investment planning, i) referral to appropriate technologies that use of ecological and energy efficient, and effective, ii) the mobilization of concessional credits multinational low interest rates and long duration of depreciation, donations and interest rate subsidies granted under the bilateral and international cooperation (FEMIP, GEF etc ...), iii) to take advantage of opportunities offered by Develop Mechanisms (CDM) established in under the Kyoto Protocol, iv) to use any state funding

Level of cost recovery services, i) the establishment of a sanitation fee that will cover operating costs and generate cash flow sufficient to renew books., This charge should charge the services to the real cost to users engaged in economic activities (industrial users, tourist uses administrative users, various services etc ...) and gradually get closer to domestic users, ii) cost optimization services without compromising quality of services provided and this through the optimal use of operating resources, control energy consumption in considering the provisions of non-energy systems or the development of self-generation of energy or where possible, Private sector participation in the management of wastewater in a spirit of win – win partnership, iii). use of by products of the activity “purification” through the sale of treated wastewater quality standards reuse and recovery of biogas from the fermentation of sludge treatment plants ...

Location

Tunisia: The solution could be performed by public institutions responsible for managing sanitation utilities and drinking water.

Actors

The National Office of Sanitation (ONAS): Public institution responsible for the management of public sanitation sector in Tunisia.

The main actors involved in the implementation of the solution to ONAS are i) the Ministry of Environment as an Umbrella for ONAS ii) the Ministry of Finance, which oversees the preservation of financial balances of ONAS and authorized to sign orders fixing rates of royalty, iii) the Ministry of Industry concerned by the application of the polluter _payer, iv) the Ministry of Social Affairs concerned with the level of tariffs for low-income subscribers , v) the Ministry of Investment and International Cooperation responsible for mobilizing loans and grants for investment), vi) the National Company of Distribution Utility (SONEDE) charged by ONAS for the collection of fees sanitation whose base is the volume of water consumed.

The solution is followed by the government through the Program Agreement signed between the government and ONAS.

State of progress

Currently about 85% of revenues come from fees ONAS sanitation remaining 15% comes from state subsidies in against some of the services rendered by it for the benefit of local communities. The rates of fees are set by a ministerial decree signed by the Minister of the Environment and the Minister of Finance. Ministerial Orders issued in July 2010 and modified in September 2011 have canceled the agreement between the ancient texts (promulgated in 1974 and amended several times until 2003) and replaced by new provisions that take into account the principle billing services to the real cost to users exercisers economic activities. The principles of the new pricing are:

i) a progressive tariff per consumer for home users. Customers who consume less than 20 m³ per quarter are widely supported,

ii) the polluter pays principle is applied to users pollutants. Discharges standards are billed at cost by cons releases that exceed the standards are billed at cost plus a fee on the additional pollution.

Regarding investment programs underway or planned, they are within the scope of an action plan aimed at developing the sector in the medium and long term that takes into consideration the following aspects:

i) the continuation of the national effort to spread sanitation services in urban areas by increasing the rate of connection to public sewer by 85% in urban areas in 2011 to 89% in 2016

ii) the development of treatment capacity to treat all wastewater collected The number of treatment plants increased from 111 to 130 stations in 2016;

iii) the production of treated wastewater quality meets the standards and requirements for reuse required. The volume of treated wastewater increased from 240 million m3 in 2011 to 280,000,000 in 2016;

iv) orientation more towards new remediation technologies and processes Treatment days (up to date) using techniques effective, efficient, energy and ecology;

For cost control sanitation and optimization, the following actions are taken and this without compromising the quality of services provided:

i) the optimal use of operating wastewater facilities

ii) The control of energy consumption through the use of more energy efficient systems and development of the self energy production or where possible;

iii) the rationalization of human resource management by implementing a recruitment plan and skills development linked to the development of the Office programs and private sector participation, capacity building through programs sharp and focused training directed to specific areas of activity and policy of the office, export and skills development to foreign markets through "ONAS International", etc.

iv) Modernization of methods of management and technical management and integration of ICTs in all activities of ONAS;

v) Private sector participation in the management of sanitation facilities in the aim of optimizing the allocation of roles between public and private sector to provide citizens and all classes of customers with quality service and to bearable cost levels.

Problem to solve

This solution meets the soucil that relates to the development and generalization of sanitation services to all without affecting i) the sustainability of the sector and ii) the equilibrium financial institution who is in charge.

The proposed solution is in line with objective 4.2 of Priority 4 on the theme "decontaminating a shared ecosystem." Indeed through said solution scheme of cost recovery for sanitation services is made:

i) Charges paid by users of sanitation connected to actual public sewerage: cost for users to economic activities,

ii) Grants coming from the state in part of the contributory taxes & Investments for the use of concessional external financing will reduce debt service and consequently the cost of wastewater service tends to decline.

Added-value and cost effectiveness

The main results of the solution are:

- i) improved cost recovery rate of the service provided through the application of the new fee schedule that charges services to real costs,
- ii) the extension of wastewater services that has covered the neighborhoods and suburban areas of large cities
- iii) the satisfaction of new demands for sanitation service which continues to grow,
- iv) the commitment of several programs of rehabilitation and upgrading works sanitation became dilapidated and under-dimension

Monitoring

To follow the evolution of the solution there to be laid there on the logical framework.

Implementation and replication potential

The public institutions responsible for the sanitation sector and community drinking water in the expansion phase will be most affected by this solution. During this phase the application is very important that will permit to better appreciate the willingness to pay of users, the key indicator to shut down the level of tariffs.

Key contact institution

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Supporting material

<http://www.onas.nat.tn>

Annex 4: Small treatment plant for small communities (France)

One of the potential solutions proposed by the French Water Agency "Rhône Méditerranée & Corse" based on the experience of the department of Hérault, which has shown that many very small communities (less than 200 inhabitants) had no collective sanitation as purification techniques proposed are too expensive and technically complex to be funded and operated by the communities. Hereafter, a brief description of this solution:

To solve out this situation, a study was initiated to explore the possibilities of creating simplified networks or development of existing technologies to make them less costly, easier to use while remaining reliable and efficient enough to ensure good quality of water supply. These techniques have been validated by the technical and financial partners of the communities that perform sanitation services.

Ten test sites have been appraised; solutions are implemented on a number of these sites. Information of all the mayors of the Hérault and with technical operators will be undertaken. The reflection of this solution consists in a specific expertise of the various elements that make up a small treatment plant, analyze exactly what the processes involved at each stage of treatment and define the function of each device in the treatment process. The study allowed also distinguishing the role of each item or equipment of the treatment plant, optimize and reorganize these elements to retain only those necessary to achieve the performance necessary treatment to protect aquatic environments. The study also helped to define the method of expertise to be followed in determining each stage of a project: optimization of the capacity, location, technical conditions of release.

The facilities of such solution can be reproduced in any socio-economic contexts. Their simplicity makes that they can be applied mainly to small communities for which they were designed. There are also plans to combine multiple streams to form a more

complete set up. This provision increases the performance and thus to extrapolate to larger communities the results of this approach.

The critical success of "transfer" is to consider carefully all the recommendations of the solution and especially the basic elements which do not deviate to avoid degrading the performance and apply them to local conditions using the method of defining and developing the project validated through this study: capacity optimization: number of connected and per capita ratios, optimal location in the local context, selection and adaptation of the most appropriate technique, spatial ultimate rejection the natural environment. The transfer of knowledge and expertise are required, they must apply faithfully the recommendations.

Annex 5: The use of a new process based on an alternative source of energy to the Wastewater Treatment Plant (WWTP) – (Israel)

One of the emerging solutions is inspired from Israel. It consists in the use of a new process based on an alternative source of energy to the Wastewater Treatment Plant (WWTP), which can reduce the energy consumption and the overall operation costs of the plant, and subsequently the cost of sanitation services. (Source: Eran Feitelson and Yuval Laster, Plan Bleu, 2011, National report of Treated Wastewater Reuse and Desalination in Israel):

Methane gas is a by-product of the anaerobic sludge treatment stage in WWTPs. When a co-generation installation is added to the treatment process the biogas can be used as an alternative source of energy to the WWTP. Adding such a process can reduce the energy consumption and the overall operation costs of the plant. There is also a benefit in burning the methane and emitting CO₂ instead, as methane is known to have 21 times more of an impact on the Greenhouse Effect than CO₂.

The vast majority of the technology used for treating effluents in Israel is activated sludge. The mean energy demand of this process is approximately 0.75 kWh per m³ of effluents. The mean electricity production potential from burning the methane emitted is estimated at 0.44kWh per m³ of effluents, almost 60% of the energy demand of the treatment process (Pareto, 2006).

More than 360 Mm³/y of effluents are treated in activated sludge facilities. The potential for electricity production from burning all the methane emitted can reach 158.4 GWh/y, which only amounts to 0.3% of the total electricity demand in Israel in 2010. This potential is currently far from being exploited. According to the Public Utility Authority – Electricity (PUA), the only WWTP to produce electricity from burning methane is the Sorek WWTP. This plant treats 30 Mm³ of effluents per year. The co-generation unit installed in this facility has a capacity of 1.8 MW, enabling the production of 6.4 GWh/y. Based on a contract with the Israel Electric Corporation (IEC) the Sorek WWTP sells 3.1 GW/y to the national grid and uses the rest of the electricity produced for its own operation.

Selling the electricity produced to the national grid from burning methane is most economical during peak electricity demand hours when the electricity tariff is highest. Pareto (2006) estimated that the total reduction in energy costs in the WWTP process is €0.03/m³. This estimation was based on a 65% utilization of the available methane and on the electricity price of €0.1/kWh, the annual average peak price.

Annex 6: Institutional and regulatory framework for a sound sanitation policy (France)

The community of Nice- French Riviera (France) presented during the world water forum session an interesting case study, explaining the budgetary forecasts based on a sanitation policy:

- 1 - From natural environment quality objectives to treatment objectives
- 2 – Facilities diagnosis, state of the art and development hypothesis
- 3 – Investment identification and prioritization
- 4 – Budgetary forecast: investment needs determine an adapted price
- 5 – Local representatives responsibility: vote for pricing and investment programme, with an objective on natural environment quality result
- 6 – Technical services apply this policy, reporting to representatives and users (annual reports)

This case study resumed the condition of success of such approach in:

-  Institutional and regulatory framework
-  A strong and effective public authority: high-level technical skills
-  Political will: high quality of our natural environment → adapted sanitation pricing
-  A coherent territory for water management / clear and adapted local governance

Annex 7: Sewage Infrastructure Development in Israel

The public sewerage system in Israel is operated by the local authorities. Israel produces approximately 450 million cubic meters/year of raw sewage. Most of the wastewater is used for various applications, such as reuse in agriculture, Industry and public gardens. Israel invests approximately USD 120 million/year in development and rehabilitation of sewerage infrastructure. The budget is allocated according to governmental resolutions. The Sewerage Infrastructure Development Administration accompanies ~500 projects currently in progress.

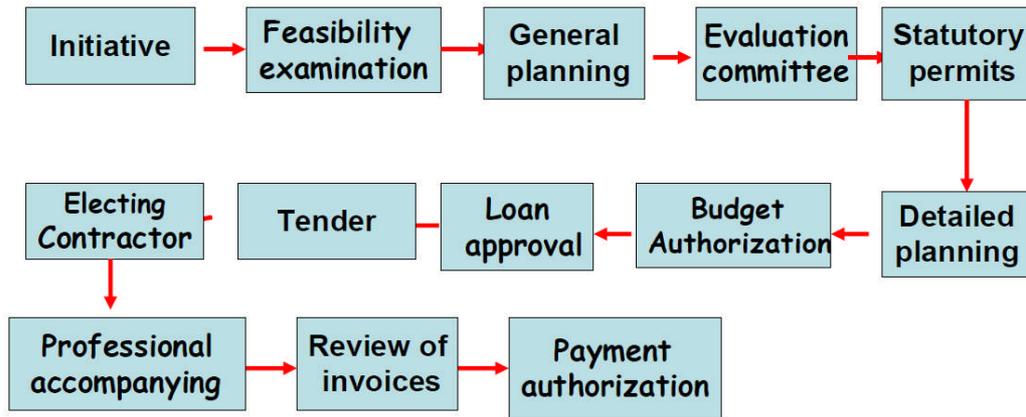
Statutory Issues

- Statutory Zoning Plan: determines and facilitates the location of the sewage treatment plants (STP'S)
- Strict statutory requirement for the implementation of formal tenders.
- Statutes granting authority regarding various issues of sewage treatment have spread authority among various Ministries:

Municipalities Law (Sewage): Interior Ministry and MNI (for STP's).

- Municipal statute: required for installation (finance) and operation of sewerage system.
- Public Health Ordinance: The Ministry of Health.
- Water Law (Pollution): The Ministry of Environmental Protection, The Water Authority (concurrent).

Typical path for project execution



Simultaneous activities

- The local authorities update the Sewerage by-law
- Checking the ability of repaying the loans by the Ministry of the Interior

Budget Principles

- The budgetary regulations are divided among sub-regulations according to governmental resolutions.
- The budget is allocated to the local authorities as loans and grants, subject to the above mentioned governmental resolutions
- Loans terms & conditions:
Interest Rate- 5%- linked to CPI
Term repayment - 20 years
Local authorities ensure the return by adopting sewage fees, based on water consumption.

Project Approval

- Each project is examined by a professional committee.
- Rationale for project approval:
 - Matches the master plan of the local authority.
 - Exhibits technological and economic feasibility.
 - Complies with regional approach to sewerage plans.
 - Meets budget constraints.

Criteria & standards:

The Sewerage Infrastructure Development Administration within the Water Authority, and the Ministry of Finance, consolidated criteria for approving the projects, which take into account technical, social, and economic aspects.

Uses for Treated the Wastewater:

- The treated wastewater can be targeted for several applications:
 - Agricultural irrigation
 - Industrial use

- Public gardens irrigation
- Stream augmentation

Each plan examined by the professional committee, must take into consideration the reuse aspects of the treated wastewater.

Estimated Investments:

- Costs range between thousands to millions US Dollars.
- The project costs fluctuate according to the type of plant, and depend on several variables such as: project size, fluctuation of construction materials in the domestic/global market, topography, location, etc.

Choice of Technology:

- The technology is chosen by the design engineer, and coordinated with the assigned engineering accompanier
- In accordance with a recent governmental resolution, 3 millions US Dollars, will be allocated to assist the development of new technologies in order to improve urban sewage treatment.

The Upgrade of STP's:

- 220 millions US Dollars are expected to be invested in upgrading the STP'S throughout the implementation of the government resolution dated August 9, 2005.
- Estimate time for completion: ~ 10 years
- The improvement of the effluents' quality will extend the range of their use.

Sludge Management:

The Sewerage Infrastructure Development Administration has been implementing the new regulations, issued in 2007, concerning sludge treatment to class A, and the total prohibition of sludge dumping into the sea.

Annex 8: Session outline at the World Water Forum, 14 March 2012, Marseille (France)

Session Outline Form

Part 1:

<p>Reference number</p>	<p>Med 4.2</p> <p>In coordination with the Condition of Success 2 Financing Water for all, target 3: <i>By 2015, xx countries per region have inscribed in their water policies the achievement of sustainable cost recovery through a combination of Tax-based subsidies, Tariffs and Transfers from abroad (e.g. ODA, remittances) that is financially sustainable, reliable, and socially equitable.</i></p>
<p>Target(s)/PFA/CS/ Region</p>	<p>Target Objective Med 4.2</p> <p>4.2: By 2020, each Mediterranean country has defined a strategy of sustainable cost recovery (SCR) for sanitation services through the use of tariffs and fees, public subsidies and international financial assistance to ensure economical sustainability, equitable access for all and pollution control.</p>
<p>Session title</p>	<p>Financing the collection and treatment of industrial and urban wastewater in the Mediterranean</p>
<p>Session teaser/description <i>(150 words, please kindly use media-friendly language)</i></p>	<p>The objective of this session is to analyze and discuss the best mechanisms for financing urban and industrial sanitation services. One of the important mechanisms consists in considering the cost recovery scheme for the overall sanitation cycle in order to have a clear picture of all the costs and to match them with the necessary financial resources: tax payer money, tariffs and fees, and international financial aid (Transfer) i.e. the 3 Ts according to the terminology of the OECD. This approach aims at answering the question "Who pays what?" On the other hand, it will be also the occasion to discuss some emerging solutions such as: generating new revenues (reuse waste water & sludge, energy production) and payment for ecosystem (Eco-tax / environmental tax).</p> <p>After case studies presentations, the session will focus on debates to identify the best existing or emerging solutions for sustainable financing of the sanitation sector.</p>
<p>Duration</p>	<p>2-hours – Wednesday 14 March - 8:30 / 10:30</p>

Contact details of the Coordinator(s) convening the session	Dr. Jauad EL KHARRAZ (EMWIS/SEMIDE); jauad.el-kharraz@semide.org Eng. Nejib ABID (ONAS); dop@onas.nat.tn Place: PEu1 Europa 1 Palais de l'Europe		
Objectives and outputs	<u>General objectives of the session</u> <ul style="list-style-type: none"> - Improve the understanding of financing the sector of sanitation services - Learn from good practices and success stories - Adopt an agreed approach to be applied in voluntary countries <u>Expected outputs</u> <ul style="list-style-type: none"> - finalise target action plan for 2012 – 2020 		
Format/Logistics request <i>(please note that room settings that are not standard cinema seating reduce the overall number of seats available in the room)</i>	<u>Estimated number of seats needed</u> <input checked="" type="checkbox"/> X Less than 400 About 50 to 60 seats	<u>Preferred room set-up</u> <i>(not guaranteed by the IFC)</i> <input type="checkbox"/> Oval/Square seating <input type="checkbox"/> Roundtable seating <input checked="" type="checkbox"/> X Standard cinema seating With 6 persons in the panel	<u>All rooms will be equipped with:</u> - a computer - a video projector - a screen - 2 microphones - simultaneous translation in French and English
Extra requirements for innovative sessions (professional facilitation, additional technical requirements, etc)			

Part 2:

Session plan detailing its schedule	Time	Descriptions of items/presentations	Speakers
	5'	General session introduction	Walter Mazzitti (EMWIS)
	- 10 mn	Setting the scene: Methodological framework on sustainable cost recovery mechanism (definitions/ glossary, sustainability criteria for operators, fair pricing policy, etc.)	Monica Scatasta (EIB)
	10 mn	Tunisian example (including valuation of derivatives)	Nejib ABID (ONAS)
	10 mn	Implementation of a program of urban wastewater treatment: case of Morocco through the experience of ONEP.	Adil Hasnaoui Mardassi (ONEP)
	- 10 mn	Cross-financing between sectors to maintain affordable tariffs: the case of a local authority: Nice Cote d'Azur Metropole	Hervé Paul, in charge of sanitation (NCA)
	- 35 mn	<p>Panel 1</p> <p>Chair: Walter MAZZITTI (EMWIS)</p> <p>Panel: Nejib ABID (ONAS), Adil Hasnaoui Mardassi (ONEP), Hervé PAUL (Nice Côte d'Azur)</p> <p>Question 1: Which financing means and responsibilities to set up a clear regulatory & institutional framework? (depolluting, financing, invoicing, control/police, transfers from different government levels or between sectors such water or energy sectors.</p> <p>Question 2: How can we provide incentives to reduce pollutant discharges?</p> <p>Question 3: How can we reduce the high cost of sanitation?</p>	

	- 30 mn	<p>Panel 2</p> <p>Chair: Walter MAZZITTI (EMWIS)</p> <p>Panel: Nadia ABDOU (Alexandria Water Company-ACWA), Enrique CIFRES (eWATER), Abraham TENNE (Director of Desalination Department, Israel Water Authority)</p> <p>Question 4: Is it possible to adopt a standard or a unique schema for a sustainable cost recovery (SCR) in the developing countries?</p> <p>Question 5: Which role of transparency and affordability concepts to set up a fair tariff structure?</p> <p>Question 6: What emerging solutions could you propose or recommend (among others: energy production, Payment for the ecosystem, eco-tax or environmental tax, etc.)? how can we assess its feasibility? Could it be applied in developing countries, and to which extent?</p>	
	- 10 mn	Conclusions & Closing	<p>Speaker: Jauad EL KHARRAZ & Eric MINO</p>
Targeted audience in view of commitments	Sanitations operators, International organisations (EIB, WB, etc), Governmental institutions (ONAS, ONEP, etc), Private sector		

Annex 9: List of members of MED 4.2 Task Working Group

Med Target 4.2

Coordinators : EMWIS & ONAS

Coordinator: EMWIS - Jauad El Kharraz (jauad.el-kharraz@semide.org)

Co-coordinator: ONAS Tunisie - Abid Nejib (dop@onas.nat.tn)

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