

IPEMed

INSTITUT DE PROSPECTIVE ECONOMIQUE DU MONDE MÉDITERRANÉEN
(Economic Prospective Institute for the Mediterranean World)

Workgroup Report

**« Water Supply and Sewage Treatment (Sanitation) in
the Mediterranean Bordering Towns and Countries »**

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Table of Contents

Introduction	5
I. Statement.....	15
I. 1. Different but converging goals between international organisations and national public authorities	15
I. 2. A wide range of instruments, but often yielding output bearing no relationship with the declared ambitions and goals	16
II. Issue Diagnosis.....	19
II. 1. What are the mobilizing goals?.....	19
II. 2. What stakeholders should be mobilized on these shared goals?	23
III. Three Key Issues for Success	27
III. 1. Improved governance and service public control.....	28
III. 2. Skills development (implementation and management skills).....	30
The crucial human resources should be gathered and mobilized where they can concentrate « a critical mass » sufficient to control the problems raised.	30
III.3. Service performance improvement through a determined commitment toward quality and economic efficiency approaches	31
IV. A central issue: a tariff policy reconciling service longevity, justice and solidarity	35
IV.1. Avoid the wrong good idea of a free service and a generalized under-tariff.....	35
IV. 2. Reciprocally, accept where necessary water supply tariff below total cost with respect to domestic users	37
IV. 3. On average cover at least service maintenance and operations costs (« small balance »)	39
IV. 4. Implement solidarity mechanisms through tariff modulation and targeted help	40
V. Dégager efficient financing means.....	44
VI. Choose the management mode and the operator on objective bases.....	48
VI. 1. Leave out too ideological a debate	48
VI. 2. Stating the plurality of existing solutions.....	49
VI. 3. Base choice on preliminary diagnoses or objective comparisons and assessment based on representative indicators for the different problems to solve ...	51
VI. 4. Opt for contractual relationships associated with inducement mechanisms (bonus-malus), including in the case of public management.....	52
VI. 5. Avoid to make public or private operator liable for public authority responsibility or failure	53
VI.6. Management mode and operator choice parameters	53
Conclusion.....	55
APPENDIX 1	
• I. Mediterranean Action Plan	58
• I.1. The Barcelona Convention and MAP Setting Up	58
• I.2. MAP Main Institutions Implementation.....	58
•	59
• II. The Mediterranean Environmental Technical Assistance Programme	60
• III. European Union Actions.....	60
• IV. Europe-MENA Urban Network	62
APPENDIX 2 : Case Studies	63
I. MOROCCO.....	63

I.1. Tangiers-Tetuan (AMENDIS).....	63
I.2. Casablanca (LYDEC).....	67
I.3. Casablanca INDH (National Human Development Initiative).....	68
I.4. Fez (RADEFF).....	70
II. TUNISIA.....	72
II.1. Drinking water supply (SONEDE).....	72
II.2. Sewage treatment (ONAS).....	73
III. ALGERIA.....	75
III.1. National situation.....	75
III.2. Water supply and sewage treatment in Algiers.....	78
IV. MIDDLE-EAST.....	81
IV.1. Tripoli (LEBANON).....	81
IV.2. Amman (JORDAN).....	82
IV.3. Alexandria (EGYPT).....	83
APPENDIX 3 : Evaluation Sheet.....	86
APPENDICE 4: Workgroup Composition.....	92
APPENDICE 5 : Officials heard.....	93

Introduction

The Mediterranean Sea and its shores represent a unique natural and historical heritage. Preserving this heritage emerged as a priority shared by the bordering countries and the Environment United Nations Program (PNUE) more than thirty years ago.

Our « common sea » is a quasi closed sea which receives, accumulates and concentrates all of the pollution produced by the bordering towns and countries, and by the maritime activities themselves.

Among the different issues retained in 2006, the Economic Prospective Institute for the Mediterranean World (IPEMed) wished to contribute to the struggle against pollution.

Since the findings show that 80% of pollution originate in land, priority should be given to the towns sewage treatment, especially the coastal towns. There is urgency in such an approach especially when both activities and populations tend to concentrate on the littoral. The prospective elements available today confirm that this trend will continue for the next decades.

The issue is not to carry on what multiple conventions, plans and programmes or investment funds tried to implement since the 1975 Barcelona Convention and the Mediterranean Action Plan (MAP) prepared under the aegis of the United Nations, the European Union and all the relevant countries.

The review of the commonly adopted measures and of the anti-pollution actions reveals the magnitude of the implemented programme of action and the gradual broadening of scope from environment preservation and development to a genuine Mediterranean Sustainable Development Strategy: preparation of Agendas 21 in Tunis in 1994, MAP review in Barcelona in 1995, and creation of the Mediterranean Sustainable Development Commission (MSDC) in Montpellier in 1996.

Despite variations between countries the various causes which led to mitigated, but on the whole insufficient global output need to be questioned.

First, it appeared that the priority issue of the towns sewage treatment involved a re-examination in the context of water supply global management and sewage treatment service (from drinking water production

and supply to used waters collection and treatment), which integrates in the resource natural cycle and allowing a balance between its multiple uses (irrigation, industry, household consumption). The required management integrated to the water cycle in the relevant territories (generally river basins), approached elsewhere is not the scope of the herein report.

More generally speaking, the issue of water supply and sewage treatment cannot be addressed in isolation. Other dimensions should be included (national and regional development (town and country planning, economic development, social development especially anti-poverty or health care policies, concerns for solidarity and justice, good governance or the struggle against corruption), represent an impediment in the efficient study of such issues as the protection of the environment and the struggle against pollution.

Hence a sustainable development approach hinging around three dimensions is required.

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The issue of sustainable development consists of three dimensions: economic and social development, and environment protection and development. Sustainable development should not be confused with its environmental dimension. It is the matter of a transversal, integrated approach, involving a number of public policies which often are the scope of sector-based approaches and requiring sufficient coordination so as to overcome unavoidable tensions and contradictions.

A sustainable development policy involves good diagnoses and shared visions among the various stakeholders. Thus a common language is required in order to avoid misinterpretation and misunderstanding.

The economic dimension should be considered within a medium and long term vision in order to save non-renewable resources (fossil energies) or rare resources (water supply) as a guarantee for the « sustainability » of the choices made.

The social or « societal » dimension includes a miscellany of concerns such as human dignity (decent housing), solidarity, social cohesion, justice,

good governance, democracy, transparency and anti-corruption policy. Culture and education are clearly relevant here and contribute to the efficiency of other public policies. Health care and pandemics prevention, which are linked to water bad quality and to pollution are obviously essential in our approach.

The environmental dimension is of course highly significant, should the struggle against the greenhouse effect, or the issues of climatic change or bio-diversity, for instance, be called forth but it can only be noted that it should result from economic and social stakeholders' awareness, who are not naturally sensitive to such issues, particularly in the developing countries, where they face a great number of urgent priorities.

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IPEMed general delegate, Jean-Louis GUIGOU, set up a workgroup whose chair was trusted to Claude MARTINAND, the chairman of the Associate Management Institute (AMI/IGD), a think tank acknowledged in France

and internationally (Brussels Commission, World Bank, UNO), on the themes of governance and public services performance and universal access to basic/essential services. The work prepared by the institute and the African Municipal Development Programme (MDP) in 2006 is of great importance, and a broad consensus around them was reached at the Nairobi Africities 4 held in the autumn 2006.

Once the main issue of Mediterranean bordering towns and countries water supply and sewage treatment determined, the workgroup endeavoured to start with case studies so as to analyze the difficulties encountered and the success factors, and to prepare precise and operational recommendations, susceptible to lead more rapidly to tangible output, for a substantial contribution to the struggle against pollution in the Mediterranean.

In fact, it seems that the insufficient implementation of sustainable development principles represent the central difficulty to the issues to be addressed.

Only scarcely does urban and industrial sewage treatment represent a priority policy high on the Agenda. Moreover, in spite of the eminent responsibilities of environment ministers, such issues can only be solved by

ministerial departments in charge of local authorities, urban utilities, hydraulics or public works. Other ministries' economic, social and sanitary approaches appear as relevant entries before tackling water supply and above all sewage treatment.

Hence, the preliminary condition consists in identifying the most mobilizing goals and the key stakeholders to unite around these shared goals.

Financing or whether management should be public or private were not considered by the workgroup as the central issues. On one hand, the crucial role of tariff policy as a guarantee for service longevity, justice and solidarity was demonstrated. On the other hand, three key issues were identified as the way to success:

- governance and service public control improvement,
- skills development and implementation, and management skills,
- service performance continuous improvement (quality and economic efficiency).

The absolute requirement seems that as a minimum the networks operational and maintenance direct costs should be covered under the condition that social tariffs and aid to the most deprived are implemented.

When these issues are satisfactorily met, it becomes possible to finance investments through self-financing, budgetary allowance and international aid.

As far as the management mode is concerned, it is necessary to get out from ideological debates, to look into the various solutions available and while favouring contractual relationships associated with inducement mechanisms between the public authority and the operator, whether public or private.

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Goals, means and schedules not only need to be coherent but it is suggested to set up a permanent group in order to exchange experiments

and diffusion of good practices based on the existing organisations: (Mediterranean Action Plan, Water Supply Mediterranean Institute, and World Bank) with the support of the European Union.

It is believed that through self- or mutual assessments (self-assessment guidelines are proposed), initiatives can be stimulated through comparative emulation (*benchmarking*) while support for countries achieving progress should be provided. A trigger should be engaged in the different countries and towns, so that these issues are taken seriously and considered as genuine political priorities.

Guidelines

(Project)

«Water Supply and Sewage Treatment in the Mediterranean Bordering Towns and Countries»

I. Statement

I. 1. Different but converging goals between international organisations and national public authorities

In 1975 the Mediterranean Action Plan (MAP), prepared by environment officials (the Environment United Nations Programme or PNUE, the European Commission and the bordering countries governments) was initially focused on the preservation of the natural heritage and on the struggle against sea pollution.

Since land pollution appeared as predominant (80 %), domestic and industrial **sewage treatment**, especially in towns, emerged as a priority.

Furthermore, anti-poverty policy and access to drinking water supply represent the most significant Millenium Development Goals (MDG)

adopted by UNO in 2000. The enlargement to sewage treatment took place during the 2002 Johannesburg Earth Summit.

Earlier, in 1985, as a continuation to the Rio Earth Summit the Barcelona Convention integrated the issue of sustainable development with the launching of various 21 Agenda and the setting up of a Mediterranean Sustainable Development Commission.

All these complementary goals cogently appear to everyone in a sustainable development perspective.

I. 2. A wide range of instruments, but often yielding output bearing no relationship with the declared ambitions and goals

Appendix 1 reviews all of the Barcelona mechanisms since 1975 together with the wide range of mechanisms and means implemented.

But, on both the Mediterranean and the global level, the UN appointment in 2005 (OMD+5) revealed the insufficiency of the output and the impossibility to attain, at this pace, the adopted goals, particularly in Africa.

As a matter of fact, as results are achieved, rapid urbanization in the coastal towns generates new needs, even more rapidly than the solutions themselves.

The towns which are often « hope magnets » attract new rural migrants, often lack the tools to organize their urban development and implement, in real time, the necessary urban facilities.

Nevertheless, it should be acknowledged that certain countries such as Tunisia have for a long time implemented serious and ambitious policies which revealed their efficiency. More recently, other countries such as Morocco and Algeria have undertaken research for innovating solutions. Should it be reminded here that the towns of Marseille, Nice and Toulon have at last and only very recently implemented anti-sea pollution policies?

Water supply and sewage treatment in Tunisia, the elements of a political project: an emerging middle class

Since independence, water supply and sewage treatment appeared as a factor contributing to the emergence of a lower middle class through a decent housing.

The adopted solutions led to setting up of national public organizations (SONEDE and ONAS), which eventually spread their coverage over the whole country.

The country, indeed small, thus managed to find efficient solutions. Gradually some of the missions are delegated to private operators.

II. Issue Diagnosis

Such output, although insufficient and varying according to the countries and towns, help bring out the mobilizing goals and the stakeholders to call up alongside the **obstacles that need lifting** through genuine sustainable development approaches, that is, integrated policies with respect to a large number of stakeholders, and therefore the need for a tight coordination.

II. 1. What are the mobilizing goals?

Even if it should be regretted, **anti-pollution objectives** are only scarcely considered as priorities in developing countries. Furthermore, environment ministers, responsible for negotiating the great conventions/covenants, are not always in the best position to implement them; other ministries (public works, hydraulics, interior) are more directly responsible for facilities and urban utilities, in respect of local authorities. These issues are not often taken over different Ministries, since they have to tackle a wide range of other priorities to which they are confronted with limited means.

Anti-poverty, public health and housing policies (a decent housing for the most deprived) are also the concerns of other agencies.

A better perception of the **social dimension** seems to emerge, but the solutions are not easy to imagine let alone implement.

Economic development is no doubt the most mobilizing item for governments, for economic policies lead to employment, income and resources creation, including income tax.

In fact, the solutions to the various problems are linked and by tackling them simultaneously through an integrated approach it is more likely to achieve progress.

For instance, **tourism** requires clean beaches and sea water in order to attract tour-operators and hence d'accueil/ hospitality investment, but also efficient sewage treatment plants. Tourism is obviously an important source of economic sustainable development, of foreign currency and employment in many of the countries concerned.

Here again, all of the relevant Ministries should be called up, particularly the Ministries of Interior, Economy and Finance.

Then sustainable development approaches can be implemented, and the stage of declarations of intent or incantations superseded.

Water supply and sewage treatment, the dimensions of a planning and development policy in North Morocco (Tangiers - Tetuan)

The advent of the new King Mohammed VI emphasized economic development in the North of Morocco, with respect to both industry and tourism.

In such a context, the control of drinking water supply and sewage treatment, in order to avoid polluting agents rejected into the sea appeared as a priority.

Associated management covenants were concluded, after competition, with a French-Moroccan company, AMENDIS, operating within balanced relations public (public authorities) – private (associate company).

The INDH programme described below and benefiting from various public funds and donations enables the most modest households simultaneous access to drinking water supply and sewage treatment.

Moreover, **unregulated housing**, where the most deprived live, can only be improved by dint of a stabilization and consolidation approach when the **estate issue** is « regularised » (regulated) and when **water supply, liquid and solid treatment and power supply** services are implemented, in parallel. Thereafter a virtuous process of job creation (artisans, small industrial workshops), wealth creation, and emergence of a genuine classe moyenne can be initiated. Tunisia, since independence, and, more recently, Morocco, with the National Initiative Human Development (INDH) reveal the relevance and efficiency of these global approaches linking the three dimensions: economic, social and environmental sustainable development.

Water supply and sewage treatment, a component of the National Human Development Initiative in Morocco (INDH)

Within the National Human Development Initiative, a drinking water supply and sewage treatment programme was launched in the poorest districts in Morocco.

It represents a contribution to the goals to be attained by the national policy which consists in the improvement of the population living conditions, insalubrious housing, often unregulated, according to a global development plan including maintaining the population and estate regularization.

Thus a new impetus can be given to local development, generating employment, resources, income and housing improvement.

In Casablanca, LYDEC is a company dealing with social engineering (50 employees) required for water supply, sewage treatment and power supply for 137 000 households living in insalubrious unregulated housing.

Since 2006, i.e. since the operations inception, 16 000 households (47 000 people) have already been prises en charges.

II. 2. What stakeholders should be mobilized on these shared goals?

In order to achieve success all of the public and private stakeholders and the different «stakeholders» within civil society should be involved or associated.

- a) **The States, of course,** are concerned by the definition of public policies and implementation of the means to attain the priority goals defined on the international and national level.

Still it is required that all of the relevant Ministries be mobilised under the authority of the Chief of Government or even the Head of State.

b) **Local authorities** should also be involved and empowered, and at least, consulted and associated, should the de-centralisation and de-concentration process be regarded as premature.

Drinking water supply and sewage treatment indeed represent local issues requiring responses meeting the local context, history and the territories geography.

Responsibility devolution at the local level, within a framework of de-concentration or de-centralisation, is the concern of the appreciation of the States, in a position to determine the pace of human and financial resources transfers to the local authorities can be associated to the increase of skills and responsibility.

Eventually, the vicious circle, which consists in objecting to the delegation of responsibility to local authorities because of their insufficient skills and means should be broken.

c) **Users**, consumers, citizens, associations, even certain communities, should also be informed, consulted, associated to decision-making and, under certain conditions, to service management.

This is indeed the best way to bring about good responses to the populations' priority expectations, and induce users' responsible behaviour, service efficiency sources (resource saving, treatment network good operation). Furthermore, good governance can benefit from users' and citizens' involvement.

Industrial and economic users should also be informed, consulted and associated to the decision-making process, in the context of implementation of « polluter-payer » mechanisms, for instance.

d) Existing service operators or likely to intervene, whether public or private, should be consulted, involved in diagnoses, and development approaches envisaged. Their personnel can bring their fine knowledge of the networks, and benefit from training schemes so as to improve service quality and performance.

Therefore, **all of the stakeholders** should be involved one way or the other and on adequate levels according to the rules and to national or local traditions. The best approach consists in mobilizing all of the stakeholders, in a cooperation spirit, in order to mount a direct challenge and thus attain the output together.

III. Three Key Issues for Success

An integrated approach to sustainable development, strongly hinging around its three dimensions, is the unique approach which can meet the challenges identified by the workgroup, high on the political Agenda. This involves strong and sustainable **coordination mechanisms** of the various public policies involved.

Still all the assets should be available for success, and it seems that three issues should be **simultaneously** addressed in priority:

- **Improved governance and service public control,**
- **Relevant authorities' and operators' skills development (implementation and management skills)**
- **Global service performance improvement (quality and productivity).**

Furthermore, **tariff policy** appears in the end as a central issue and it will be discussed later; **financing** and **choice of the management mode and operator** can only be satisfactorily addressed, once the key issues are correctly addressed and when an adequate tariff policy is adopted.

III. 1. Improved governance and service public control

What is paramount here is clarifying the **who (who is in charge of what)**, the **what (what missions need to be implemented** such or such persons and **the how (what kind of relationships, preferably contractual, should be established between the main stakeholders).**

The regulatory framework should be determined at the national level: the overall goals to be attained, the standards to be met, and the necessary means to be implemented, the controls to be carried out, and assessment of output achieved, in other words adopting a genuine “regulation”.

If the State can withhold direct organization of the service, at least during an initial phase, **local authorities** should be involved according to provisions adapted to their human and budgetary means, but with the perspective of an increasing involvement and de-centralisation or, to begin with, de-concentration.

Operators should be in charge of the utilities management or services operation according to the objectives of service level and rules determined by the public authorities. They should clearly be placed under finality

control and monitoring of their output by the public authorities. Confusion and roles inversion between operators and public authorities, with operators determining goals and public authorities interfering in daily management, should absolutely be avoided. Operators may be consulted and have a stake in outputs.

Users, service beneficiaries, should also be associated, consulted and involved on issues where they can play a positive part, as long as they are correctly informed and empowered. A judicious approach may consist in ensuring their representation by distinguishing different categories of domestic, rural and industrial users.

The relevant limits of such governance should be determined with respect to the technical, geographical and human realities, since tariff policy (including balancing out) will be defined within such limits, expressing a form of social and territorial solidarity, defined on the relevant political level.

The relationships between the stakeholders should aim trust, co-operation and partnership building. The contractual solutions represent

their most developed shape since partners are considered on equal ground and boost « winning-winning» games through inducement mechanisms.

III. 2. Skills development (implementation and management skills)

The crucial human resources should be gathered and mobilized where they can concentrate « a critical mass » sufficient to control the problems raised.

The required skills are together of a technical, economic, legal, administrative and financial, and managerial or commercial nature.

Differentiation can be carried out according to :

- **The elaboration of a policy**, a diagnosis, the determination of realistic goals to be attained, output assessment, the capacity to define investment programmes and study projects, to organize competition, to negotiate with and control the operator;
- **The skill to operate the service** as professionally and efficiently as possible and to manage human resources, industrial processes and procedures.

Failing sufficient internal competence, it should be strengthened by way of training programmes and resorting to external skills such as acknowledged consultants, experts or professionals, but also NGOs and international organizations.

De-centralised co-operation and exchanges between towns in the North and in the South are interesting routes, as long as they take place in a continuum, and include essential subjects on clear bases, for instance technical co-operation, but also social engineering needs.

III.3. Service performance improvement through a determined commitment toward quality and economic efficiency approaches

Continuous performance is a key to:

- **improve operation financial balance** by reducing costs and increasing revenue which in turn allows increase of investment self-financing, particularly renewal investment;
- **improve service quality**, thus facilitating bills recovery from users more satisfied with the service.

Progress margins in respect of drinking water supply can be rapidly identified using three significant indicators:

- the number of hours of water supply per day according to districts ;
- network leakage rate;
- bills recovery rate.

As far as sewage treatment is concerned, connection rate to the used water collection network (treatment efficiency) and the volume of direct discharge into the sea, even with emissaries, help appreciate the efficiency of the implemented policy.

Improvement performance mechanisms are particularly related to:

- Responsible and as professional as possible a management;
- Good human resources management and agents' better motivation to improve service quality and productivity (training, participatory management, responsibility delegation, computerisation and sharing output...);

- Good knowledge of users, their expectations and capacity to pay, by developing a service approach (information, responses to claims, transparency and, even, marketing approach) ;
- Service projects and objectives contracts consisting of productivity and quality gains goals in conformity with performance indicators for comparison and emulation with comparable services in other towns (« benchmarking »). The totality of these actions is of a nature to generate continued virtuous improvement mechanisms for all the output.

Once productivity gains are engaged, it is necessary to allow for a fair distribution of the economic surplus thus obtained.

It can be envisaged that a first part of the surplus can be devoted in priority to self-financing of the connection of new users and rehabilitation, or extension, or infrastructure modernization; the second part would be allocated to users, either through quality improvements or contributions to tariff perequations; finally the third part to the salaried employees who permitted such productivity and quality gains. The distribution between these three categories should be imagined taking into account the context while bearing in mind justice and efficiency.

The control of the surplus, through extra-profit or corruption, by one party or another, should be avoided.

Justice and more generally this kind of ethics clearly raise the issue of a good and as democratic as possible a regulation and control where all the stakeholders, including users and salaried employees, can play a useful part.

IV. A central issue: a tariff policy reconciling service longevity, justice and solidarity

It should be reminded as a preliminary that drinking water supply and urban sewage treatment make up **industrial and commercial public services** thus offering services at a price or rather at a public tariff, determined by the relevant public authority, that is the “organizing authority”.

One way or the other, the totality of the costs should be covered by tariffs and public contributions/fees, in order to guarantee service financial balance.

Tariff policy both represents the **economic and financial** monitoring **instrument** of the service, and the tool for **solidarity between users and between territories**.

IV.1. Avoid the wrong good idea of a free service and a generalized under-tariff

For such a « public good », some in international forums defend the idea of a free service and call forth in their argument the incapacity of the most deprived to pay.

Such an idea of a free service entails multiple perverse effects: wasting a rare resource, bad management of a service which costs are not adequately covered, and the permanent need for very problematic operation subsidies.

There is no heritage maintenance, the service is degraded and no longer ensured in the long run.

The response to payment difficulties of the most deprived can be met by tariff modulation based on perequations and targeted help, reserved to those who need it most, without a windfall effect with respect to the others.

The populations who are not connected, generally the poorest, are excluded from such aid mechanisms. The poor often pay drinking water supply at a high price to water supply carriers or to fountain-tap managers, because of the lack of a genuine public service, and it is often administrations and the « rich » who do not regularly pay their bills.

Generally speaking, subsidizing water supply bill is even more relevant when most users are already well connected. Otherwise, connection subsidies for access to water supply should be favoured.

Under-tariff also leads to the same perverse outcome and should be avoided for the same reasons, as long as a social tariff policy acts as a compensation for a necessary rise of medium tariffs.

IV. 2. Reciprocally, accept where necessary water supply tariff below total cost with respect to domestic users

The history of the developed countries shows the constant need for massive public loans, at least in respect of the primary facilities in the towns, for rural water supply and sewage treatment.

Equipment mechanisms in a developed country at large and drinking water supply to the quasi-totality of users, then sewage treatment, spread over many decades. Urban sewage treatment has just been completed in France within the framework of community obligations.

How can it be envisaged that most developing countries can achieve in 20 or 30 years a similar equipment endeavour by self-financing of development investment through services operation output?

Some of the recent difficulties have part of their origin here, resulting from excessive tariffs determined in unrealistic contracts:

The **works and services/utilities concessions** (delegated management), more judicious from an economic viewpoint, may comprise too ambitious self-financing goals, which can be compromised if financing is carried out in heavy currency. Moreover; there is a risk in the case of devaluation or «hyper-inflation»; in general, the tariffs are not updated sufficiently, in spite of the contractual provisions, difficult to implement because of the social and economic crisis (re Argentina) or because of tariffs fixed by contracts with unrealistic investment goals (cf. Cochabamba - Bolivia).

Infrastructures **privatization**, inspired from the British model, which consists in buying up passed investment while financing future investment, at users' expense, seems arguable (Chile), whatever the positive output.

Thus total cost tariff should be avoided, during the initial equipment stages, with respect to domestic users at least.

The French rule «water supply pays for water supply» which is now enforced seems hardly applicable in developing countries. It is only justified when a quasi total equipment and supply level of delivery is reached, which

is the case in Europe, according to the European water supply directive cadre.

IV. 3. On average cover at least service maintenance and operations costs (« small balance »)

The longevity of the service cannot be guaranteed if service maintenance and operations costs are not, at least on average, covered by the tariff.

Performance improvement allows gradual increase of self-financing to cover all or part of costs of network renewal/rehabilitation, in order to maintain the heritage in good condition, which represents a gage of service durability. The economic surplus should be shared fairly as explained above.

Network development costs and particularly network extension in the unregulated districts can only be covered by a medium tariff if there is a sufficient perequation /balance between the central and peripheral districts. This involves good service operation, sufficient tariff and bills satisfactory recovery in high contribution/fees districts and from industrial users or administrations. A strong and sustained political will is a prerequisite in this respect.

IV. 4. Implement solidarity mechanisms through tariff modulation and targeted help

Solidarity mechanisms based on tariff modulation and the choice of tariff formulas (weight of the fixed part, connection cost charging...) clearly depend on the political authorities who should make decisions to be publicly assumed by explaining and justifying them, particularly, to the better off, and even to the classes moyennes.

It is the expression of different forms of solidarity, necessary for drinking water supply and sewage treatment access for all.

Such solidarity mechanisms can be implemented between:

- domestic and professional users,
- domestic users between themselves according to their income level and contribution capacity (tenants, owners-occupiers or not..),
- central and peripheral districts,
- neighbouring town and rural areas,
- water supply and sewage treatment users and power users (re Lydec contract in Casablanca), under the condition that these cross- subsidies demonstrate their efficiency in all transparency.

Le contract global water supply-sewage treatment-power supply de Casablanca (LYDEC)

The Casablanca contract trusted to LYDEC in 1997, strikes an original balance between the three public services delivering drinking water, sewage treatment and power. Furthermore, the production of water supply and power supply is carried out within the relevant Public Offices. Such an arrangement which succeeded in other African countries (Ivory Coast), allows a better coverage of operation costs through péréquation between the aided tariffs of water supply and sewage treatment and power supply, of which professionals are predominant users. Furthermore, la péréquation targeting the deprived is ensured in a conurbation of 4 million, where the péréquation founded on the discrepancy in the contribution capacity according to districts.

The péréquations domains should be carefully selected and politically endorsed. Those relative to water supply and sewage treatment are not necessarily the same.

Furthermore, targeted help, avoiding any « windfall effect » with respect to well-off users, can also be implemented in favour of those who are desperately in need: free water supply maximum quantity, tariff subsidy, help for connection.

Connection cost may indeed represent several months of salaries for the less well-off families. It is therefore an important barrier for poor households' access to the utilities/ services. In order to reduce the amount payable, several solutions were successfully experimented, such as the review of the standards implemented according to a classic approach or

OBA (Output Based Aid) approaches. AFD and the World Bank successfully experiment such mechanisms.

Output Based Aid (OBA)

Output Based Aid is a strategy allowing aid for access to basic/essential services to the less well-off households through output efficiency. Subsidies, based on output, can be granted in order to cover part or totality of high access costs usually at households' expense, such as drinking water supply public service connection costs.

Such subsidies can be provided by public authorities or development aid agencies.

The World Bank has thus set up a fiduciary fund grouping several sponsors: the Output Based Aid Global Partnership (OBAGP).

The subsidies can be directly granted to the people or to selected contractors following call for tender. In the latter case the contractors pay down the costs before being reimbursed upon service completion and after output verification.

The advantages of this mechanism are:

- *improved transparency in respect to subsidies attribution and correction of distortions linked to the targeting of beneficiaries. The reasons, the beneficiaries and the scope of the subsidy should be clearly explained.*
- *optimize financial resources utilization by way of a remuneration conditioned to the utilities effective service or to the obtention of output defined beforehand.*
- *call forth private partners for access of the most deprived to the utilities.*

Thus it seems possible, both to cover maintenance and operation total costs and increasing share of total cost, while implementing provisions allowing the most deprived to exert their right to drinking water supply and sewage treatment in fair conditions. We should, however, remain aware of the endeavour which generally remains the responsibility of the public community in respect of networks renewal and above all networks extension.

V. Dégager efficient financing means

The issue of financing and of the magnitude of the amounts to gather is often highlighted as the major difficulty to solve.

From our viewpoint, if an efficient response is brought to the three key issues and to the central issue of tariff policy, then financing can be found. Furthermore, a response to such issues often represents the international aid justified conditions/conditionalités, as a guarantee for its full efficiency.

Tariffs covering at least service maintenance and operations costs and regular productivity gains help increase renewal and development investments self-financing.

The need for **infrastructures financing is highlighted**, while financing recurrent operation subsidies is avoided.

En fait, a wide range of international financing sources are available, while they are not always completely utilized. They comprise a more or less important share of donations alongside concession loans in the long run.

The current dichotomy between donations reserved exclusively to the least countries developed (LDC) and credit granted to other countries, does not

always seem relevant, particularly with respect to issues discussed in the herein report.

The workgroup proposes some recommendations today widely shared by AFD and the World Bank:

- If **exchange risks** are probable, concessive solutions should be avoided, and **service operation** (such as leasing or under state control) should be **separate** from **implementation of the principal investment**, en maîtrise d'ouvrage public and public financing (which is the lesson which can be drawn from the difficulties encountered with some big international contracts). Indeed, it should be avoided to make private operators borrow in heavy currency when their revenue is exclusively local;
- As a response, **mobilization of local savings**, often abundant, and savings from **expatriates** who want to invest in the country of origin, is a route to opt for; however investments should be secured in the long run by guarantee mechanisms (re AFD) ;
- promote if possible **direct loans to important local authorities** (re SFI policy or IFC) or, otherwise, provide credit through a **financial institution specialized** in loans to local authorities, which creation

should be promoted should it not exist, such an institution itself benefiting from loans from international sponsors with the capacity to insure the risks and guarantee re-imburement/re-payment, under the State's aegis;

- attempt to dégager the budgetary means **of the State** and of local authorities through **tax** mechanisms to be **assigned** to development and urban facilities/utilities/amenities. The resulting unregulated housing stabilization alongside economic development mechanisms are of a nature to trigger a virtuous circle.

Such issues make up the scope of more detailed works, particularly at AFD, and we refer to them.

The world report panel on financing water supply infrastructure chaired by Michel Camdessus « Financing water supply for all » (Water Supply World Council, 2003) and Paul Van Hofwegen' report under the chair of Angel Gurría « Report of the Task Force on Financing Water Supply for All » (Water Supply World Council, 2006) represent essential references with respect to the financing approach and we take up many a proposal.

It should be noted that various economic studies, particularly the World human development report « Beyond Shortage: Power, Poverty and Global Water Supply Crisis » (UNDP, 2006), tend to show that return on investment in the long run is from 1 to 8 in the water supply and sewage treatment sectors.

The anti-corruption issue, which is placed at the centre of priorities the World Bank by the new chairman, deserves to be discussed, even if, in fact, it is related to an improved governance, and virtuous mechanisms are obviously long to prevail.

VI. Choose the management mode and the operator on objective bases

VI. 1. Leave out too ideological a debate

In international conferences or forums debates too often give too much weight to the choice between public or private solutions.

Here is the kind of criticism generally heard, according to the standpoint adopted:

- **state control or public solutions** in general, are blamed for their inefficiency and bad management, poor service quality, poor heritage maintenance (high leakage rate), low productivity and personnel's and executives' insufficient motivation, insufficient consideration towards users' expectations and insufficient bills recovery. The advantages consist of a more exhaustive service public control, in principle, and a greater involvement on the part of public officials;
- **private operators**, generally international, are blamed for « making money or profit » by exploiting basic public services and as such they are not in a position to propose social tariffs for the poorest, to challenge service public control because of the discrepancy in the power struggle, competence and expertise, which may lead to a real loss of

sovereignty (« multinational »). The acknowledged advantages generally include efficiency, reactivity, human resources good management, their motivation and training, management and use of appropriate technical solutions.

To both series of solutions corruption phenomena of differing nature can be attributed.

VI. 2. Stating the plurality of existing solutions

On the public management side, there is direct state control, but also autonomous state control or the public (national or local) establishment.

Partnerships can also be built with a public predominance, whether institutional (mixed economy company) or contractual with operators bringing their know-how in the shape of service public contracts or operation assistance.

Public-private partnerships can also be designed in which the public partner acts as the organizing authority while the private partner is involved with operation as « shared management » (Tripoli in Lebanon) or as delegated management with its different forms (profit-sharing state control, leasing, licence or concession). There is sharing and transfer of all kinds of risk

likely to be borne by the private partner. Private operators can be locals, nationals or internationals with respect to their most significant and complex operations.

Mixed companies can also represent an interesting route to follow for the emergence of national private operators through know-how transfer.

Stakeholders such as associations, communities or NGOs may also be trusted with service management, particularly in rural areas or in peripheral urban districts.

Public authorities should clearly make their choice among this wide range of solutions and their true advantages and disadvantages should be weighed. This « free choice » should be periodically questioned (choice « reversibility ») without excessive difficulty, particularly when contract conditions are met.

Incremental solutions can be retained, with private operators' responsibility increasing as trust is built up and respective contributions emerge more precisely.

***A new water supply and sewage treatment
policy for the Algerian cities***

After wavering between public centralized solutions (ADE and ONA) and more decentralized ones, Algeria recently engaged, within the water supply Code, in a policy attempting to associate international operators to services operation in the cities (Algiers then Constantine, Oran and Annaba) on the basis of contracts involving the private partner in management (Algiers contract), with the perspective of possibly delegating management (leasing).

***VI. 3. Base choice on preliminary diagnoses or objective comparisons
and assessment based on representative indicators for the different
problems to solve***

However, different preliminary analyses still need to be undertaken in all objectivity and without ideological bias.

A serious diagnosis also presupposes to avail of a minimum of statistical data or field work (investigation).

If international organizations (sponsors, UN agencies, providers of development public aid) do not themselves provide biased sometimes and questionable solutions, they can play a useful part in respect of preliminary diagnoses. It should be noted that sponsors' doctrine has greatly changed, and is not stable as yet, even if there are patches of light.

VI. 4. Opt for contractual relationships associated with inducement mechanisms (bonus-malus), including in the case of public management

The contract is a favoured route for the clarification of goals, including a schedule of conditions and follow-up, control and assessment tools, combined with positive or negative penalty. It is a cogent means to induce contracting parties to proceed toward the good direction and co-operate.

The contract, signed following competition and negotiation, is the common approach to the relationship between public powers and private operators.

As far as public operators are concerned, they should elaborate similar mechanisms, even if there is no competition as such. Responsibility between the operator and the public authority can be clearly dissociated. The very threat of competition may in addition stimulate public operators' performance.

VI. 5. Avoid to make public or private operator liable for public authority responsibility or failure

Private contracts failure is often the outcome of the failure of public authorities who shy away from their responsibilities (in particular with respect to tariff policy and broad definition of goals/finalités) or do not meet their contractual commitments. The same can be said in the case of public management out of confusion of roles and frequent lack of political courage vis-à-vis salaried workers and users. In any case, whether corruption is diffuse (clientelism, nepotism) or whether it constitutes a condition for or an inducement to contract attribution, the outcome mixes very negative effects on distinction of roles and on service good management.

VI.6. Management mode and operator choice parameters

There are under state controls efficient and PPP which work, the case studies (appendix 2) bear witness:

- Competition between private operators works only in a favourable regulatory framework and context; otherwise, serious candidates do not (or any more) bother to move.

- Choice should be made with full knowledge of the facts, while endeavouring to bring all the preliminary success conditions together.
- It should be noted that it is generally easier to undertake a contractual approach with private operators for each one will bring a contribution to success than simultaneously make a public operator's management and the organizing authority's responsibility change. The private solution assumes that, as a preliminary condition, the public authority is prepared to assume its role, to control the operator and de garder le cap, in general with an external assistance.
- Other possible or complementary alternatives: local or national private operators, NGOs, associations, communities.

Conclusion

Coherent goals, means and schedules:

How to activate public stakeholders, make them endorse the goals to be attained, make the desired decisions to engage in progress actions and multi-annual mechanisms for problem-solving?

First and foremost, schedules should be realistic and likely to be met thanks to consequent and continued endeavour: goals can thus be related to the means likely to be mobilized, and define progress stages with respect to service levels to be attained. At first, better limited responses but for all rather than ambitious, spread over long schedules, and by force unequal. Furthermore the technical solutions should be carefully adapted to the context and to the financial and human resources susceptible to be mobilized.

The three key issues already identified, and the issue of tariff policy if it is correctly addressed, are obviously of a nature to facilitate implementation and rapid attainment of tangible outputs.

An initial “trigger” leading the public power to approach the issue seriously by making it a **genuine priority on the political agenda**.

Implement follow-up and emulation mechanisms between towns and countries:

A forum should be based on the mechanisms of the Barcelona convention should allow output follow up and comparisons, organization of exchange of experience, des routine meetings to inform on and diffuse good practices and cases of indisputable success. A light unit, common to the Mediterranean Action Plan, the Mediterranean Water Supply Institute, and to the World Bank (MENA Urban Network of the Bank Institute in Marseille, if it lasts), no doubt could be useful and deserves to be studied.

It is indeed a necessary means to maintain pressure and induce emulation between the stakeholders who can help and support each other.

Self-evaluation procedures (problems diagnosis) or mutual assessment or by third-party could also be advocated to increase awareness and convince public authorities to engage in mechanisms likely to bring about change. For this purpose, self-evaluation guidelines are proposed in appendix.

As a **conclusion**, on the basis of a doctrine and recommendations now relatively clear, it now seems possible to go forward. Recent advances in some countries (Algeria, Morocco) show it is high time to consider these problems in earnest, in order to attain the fixed goals at last.

APPENDIX 1 : Review of Pollution Reduction Programmes in the Mediterranean

- ***I. Mediterranean Action Plan***

- **I.1. The Barcelona Convention and MAP Setting Up**

In 1975 under the aegis of the United Nations Environment Programme (UNEP), the Mediterranean bordering countries and the European Commission met in Barcelona and signed a covenant for the protection of this common sea (the Barcelona convention/covenant, (adopted in 1976 and enforced in 1978) and simultaneously decided to launch and finance an **Action Plan to support the covenant implementation: the Mediterranean Action Plan**.

From the very beginning, some thought that since 80% of marine pollution was the outcome of land-based sources and activities, sources of pollution should be looked for and fought inland. **The Mediterranean Action Plan** therefore included a socio-economic dimension, in order to elaborate «integrated planning development and management paying more attention to the basin resources ».

The covenant was amended in 1995 and named "**Convention for the protection of the Mediterranean marine environment and littoral**".

The covenant and its six Protocols make up what is known as the **Barcelona Mechanisms**, MAP legal framework.

- **I.2. MAP Main Institutions Implementation**

The MAP consists of three frameworks:

- Firstly an **institutional and legal framework**, which comes under the Barcelona convention on the protection of the Mediterranean Seas and its Protocols (six today) (re paragraph above).
- Secondly a **scientific framework**, in the shape of **The Programme for the Assessment and Control of Pollution in the Mediterranean region (MED POL)**.
- Thirdly a **socio-economic framework**, is geared, through a systemic approach, toward **prospective and environmental priorities** in all the bordering countries to be implemented in 1977, **Plan Bleu** (Blue Plan) Regional Activity Centres and Priority Actions Programme:
- The **RAC (Regional Activity Centre)/ BP (Blue Plan)** : installed in Sofia Antipolis, has the task to **observe, assess and explore relations** possible evolution **between environment and development** in the Mediterranean Basin;
- The **PAP/RAC (Priority Actions Programme)**, located in Split (Croatia), is responsible for **coastal integrated management and development**.

During the 80s other specific regional activity centres (RAC) and Programmes were set up:

MED POL Programme, in Athens, responsible for scientific study and continuous sea pollution surveillance;

REMPEC, established in Malta in respect of prevention and emergency intervention in case of accidental marine /sea pollution;

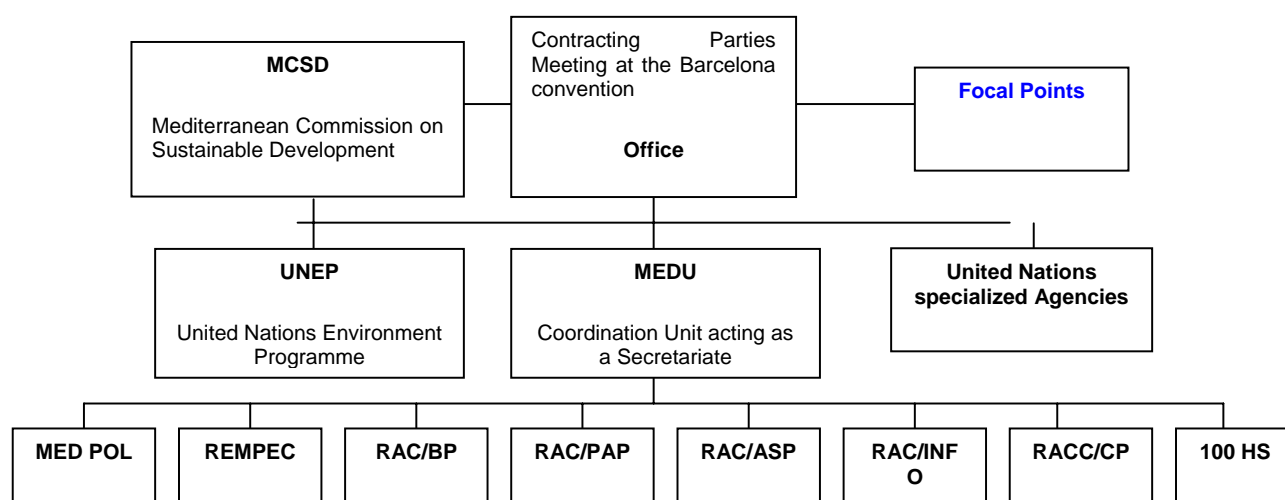
SPA /RAC with respect to especially protected areas is established in Tunis and contributes to coastal environment and threatened marine species protection;

The Programme for the Protection of Coastal Historic Sites (100 HS°)_animated by Marseille Heritage Workshop;

INF/ RAC_(ex ERS/ RAC) set up in Palermo in 1993. In 2005, ING/RAC redefined its mandate and activity toward the reinforcement of MAP capacity in terms of information and communication.

and CP/ RAC for clean productions installed in Barcelona in June 1995.

The following chart shows MAP institutional Structure:



MAP institutional Structure

I.3. Implementation of a **Mediterranean Strategy for Sustainable Development.**

-

In 1992, the Rio United Nations Conference on Environment and Development confirms the concept of sustainable development, and particularly adopts **Agenda 21**. This international dynamic and the outcome of previous Mediterranean work lead to the elaboration of **Agenda MED 21**, since 1994 in Tunis, alongside a **review of MAP in Barcelona in 1995 (MAP II)**, and the decision made in Montpellier, in 1996, to set up a **Mediterranean Commission on Sustainable Development (MCSD)** .

The Mediterranean Commission on Sustainable Development (MCSD) is a body set up for **dialogue and proposals** for the Contracting Parties, which was set up to define a global Mediterranean strategy for sustainable development.

MCSDD includes representatives both of Contracting Parties and Civil society, i.e. :

- 22 experts appointed by the neighbouring States (Albania, Algeria, Bosnia Herzegovina, Cyprus, Croatia, Egypt, Spain, France, Greece, Israël, Italy, Lebanon, Libya, Malta, Morocco, Monaco, Serbia-Montenegro, Slovenia, Syria, Tunisia, Turkey) and European Community?,
- 15 representatives from « Civil society » (5 NGOs, 5 representatives of socio-economic circles and 5 local authorities),

Since its creation, MCSDD organized work around eight priority themes five of which have already lead to the adoption of recommendations: **coastal regions sustainable management and water supply demand, tourism, indicators sustainable development and awareness-building.**

In conformity with its mission, a **Strategy for a Mediterranean Sustainable Development** was prepared and adopted during the **14th Meeting of Contracting Parties held in November 2005** in Slovenia.

• **II. The Mediterranean Environmental Technical Assistance Programme**

The « Mediterranean Environmental Technical Assistance Program » (**METAP**), which was set up in **1990**, consists in a **partnership between countries bordering the Mediterranean and multi-lateral donors**. Within 15 years, it attracted investment up to 1 billion \$ covering 35 projects for a total operating cost below 65 million \$.

Its task consists in increasing countries capacity to develop and adopt environmental policies emphasizing in particular the following fields: political and legal instruments, water supply quality, sewage and coastal areas management, and municipal and dangerous waste management.

• **III. European Union Actions**

- LIFE programme

In 1992, a financial aid instrument for development and European policy and sustainable development: **Financial Instrument for the Environment (LIFE)**.

LIFE comprises three frameworks: Life nature, life environment and life third Countries. the third framework in particular finances environment policies and action programmes implementation in certain countries bordering the Mediterranean Sea and the Baltic Sea.

- Short and Medium-term Priority Environmental Action Programme (SMAP)

In November **1995** in Barcelona, the contracting parties adopted a Declaration setting up a new Partnership between the European Union and 12 partners in the South and East of the Mediterranean combining **peace, stability and prosperity** objectives. The

environment was acknowledged as a field requiring increased co-operation and representing an important dimension for the accomplishment of sustainable development, and the European Commission was entrusted by the contracting parties with the coordination of the preparation of a **Short and Medium-Term Priority Environmental Action Programme: SMAP**.

SMAP was adopted during the **Euro-Mediterranean Ministerial Conference on the Environment held in Helsinki on 28 November 1997**, following a number of consultations (Coordination Unit of the Mediterranean Action Plan, le METAP, the principal non-governmental organizations operating in the region and other organisations representative of civil society and working in the field, in particular, were consulted). It is therefore based on MAP and MCSD previous work, and works in partnership with the different existing bodies.

- 2020 Horizon

In **2005**, the European Commission launched a new initiative to address the main sources of pollution in the Mediterranean in 2020 horizon.

The recent communication of the Commission on "A Strategy for the Mediterranean Environment" sketches the 2020 Horizon, by grouping planned activities under four fields/objectives:

- The first objective consists in supporting projects which goal is to reduce the most important sources of pollution. The European Commission and the World Bank made the decision to group their projects for the reduction of pollution in the Mediterranean under the umbrella of 2020 Horizon and to bring funds together in order to support of priority and financially feasible projects. Emphasis is first and foremost on industrial emissions, municipal waste and urban waste water, which are responsible up to 80% of pollution in the Mediterranean. Particular attention will be devoted to the projects proposed by the Priority Action Programme.
- Secondly, provisions for capacity reinforcement will be implemented to support the neighbouring countries set up national environmental administrations capable of developing and attending to environmental legal enforcement.
- Thirdly, research budget of the Commission will be utilized with the goal to increase knowledge with respect to particular environmental issues in the Mediterranean, and to ensure its dissemination. Experience acquired within LIFE and SMAP Programmes will be distributed to all the partners.
- Finally, indicators in respect of the measurement of Horizon 2020 success rate will be designed.

Currently, the project benefits from an important support from the UE Finnish presidency, and partners are consulted on a project of schedule which will be adopted during the meeting of Euro-Mediterranean Environment Ministers to be held in Cairo on 20 November 2006. This represents the first environmental euro-Mediterranean ministerial meeting to be held out of the UE borders.

- ***IV. Europe-MENA Urban Network***

In March 2004, the city of **Marseille** and the **World Bank** set up the **Europe-MENA** urban network. The network proposes a collective approach to reflection and action, exchange, policy confrontation and de know-how transfer with respect to concrete issues related to urban management.

The partnership hinges around the following points:

- Promotion of knowledge, experience and successful practices exchanges,
- Reinforcement of training institutions for elected representatives and territorial executives,
- Availability of expertise in order to help partner towns to identify, assess or implement urban development projects,
- Contacts facilitation for joint portage development projects, in particular as decentralized co-operation.

APPENDIX 2 : Case Studies

I. MOROCCO

I.1. Tangiers-Tetuan (AMENDIS)

The context

Veolia Environment Morocco (Veolia Water AMI -Africa, Middle-East, India affiliate - which manages Veolia biggest sewage treatment investment) operates since 2002 in Morocco particularly with two water supply public service delegate companies, sewage treatment and power supply : Amendis (Tangiers and Tetuan), Redal (Rabat-Salé), and comprises 5.000 collaborators.

Tangiers and Tetuan (1.4 million inhabitants) make up a region, Northern Morocco, in full economic, social and urban dramatic change. The region, located 6 years ago out of the development plan, has become, since the advent of King Mohamed VI, a priority for the Kingdom. Significant infrastructure (roads, motorways, railways) the background in terms of land planning and employment; the growing towns and their populations expect a lot from these changes.

In such a context, the delegation public services, previously managed by Tangiers and Tetuan public control, to the company Amendis is a political act the main objective of which is to technically upgrade and from an economic viewpoint the services and set up new sewage treatment systems adequate in both towns and in phase with tourist ambitions. Furthermore, since 2002, three institutional changes emerged : the current decentralisation, the new environment protection laws, and the launching of the National Human Development Initiative (NDHI) which entailed a changing context and made, in particular, development of access to basic/essential services to the poorest a priority.

The contract

- *from the call for tender to Amendis arrival*

In 1999 a call for tender was launched with the scope of delegating services managed by Tangiers and Tetuan public control. In February 2001 the contract was awarded to Amendis. Thus, in January 2002, Amendis was in charge. The company has several stakeholders: Veolia Water supply (majority), ONA (the first private group Moroccan), Somed (Morocco Emirates group), and Hydro Quebec International. The totality of investment for Tangiers and Tetuan contracts represent 700 million Euros on a 25 year period (of which half from the delegate own funds).

– *the public-private sectors relationships*

The relationship is clearly organized in the very exhaustive delegation contracts (more than 1000 pages). Thus, a follow-up committee (in which public powers, local and central representatives and Amendis) makes the most important decisions (investment plans, budgets definition, tariffs evolution...). Context changes and effects in terms of priorities are discussed during the committees meetings. Thus, during these meetings the elected representatives were convinced of giving priority to social connection operations, in favour of INDH, and to search new financing modes to subsidize the operations. In addition, the delegating authority is assisted by a permanent control service supervising the delegate which comprises executives from the former public companies/ anciennes régies. The service works on a permanent basis with the delegate and its main mission consists in checking that the contractual commitments are met. Control and follow-up of delegate, together with the obligation of *reporting* are in Morocco even stronger than in France. If deadlines are not met an incremental penalty is enforced – but there are no positive incentives of the type « bonus ».

The contract is updated on a 5 year basis.

– *the sewage treatment project is a priority*

Veolia is currently implementing new sewage treatment systems comprising, in addition to hundreds of kilometres of networks, half a dozen of de-pollution plants, followed in most cases by emissaries to the sea to evacuate the treated waters. Tangiers de-pollution plant is thus being built on a platform in the sea under the old town, following an impact survey and presentation of the project to the public.

The kinds of treatment utilized should, in some cases, evolve in order to be in harmony with the authorities and inhabitants new requirements, with respect to quality of life, particularly in the tourist area in which lagooning?/ lagunage is to be compared to other technologies.

With respect to the context, it should be noted that regulation now prohibits delivering access to water supply without prior sewage treatment. The stakes are sanitary, economic (tourism), environmental (protection of the Mediterranean), which chimes in with the towns sewage treatment objectives.

– *access development to basic/essential services within the INDH*

Upon contracts inception, access of the deprived to the utilities/services, even though written in the contract, was not perceived as a priority by the

elected representatives. INDH, launched on 18 May 2005, made it a national priority. The social connection operations which aim is to facilitate, especially with respect to financing, low income populations connection in the districts where the service is not delivered, have since then been given priority.

Amendis, like Redal in Rabat, have implemented new procedures in order to undertake these operations. In addition, new services were set up in order to undertake this new activity with personel especially trained in discussion with inhabitants in unregulated districts, district associations and other public services committed in the re-structuring of previously called “clandestine” districts. This is in fact social engineering. New tools have been designed of which the mobile agencies which move inside the district during each operation with customer service personel. More than 75,000 households were covered by operations within Tangiers and Tetuan. About 40,000 within Rabat-Sale.

A specific financing approach was designed in order to subsidize beneficiary households investment share but which is in excess of the social acceptability level of 100 Dhs/months maximum in Tangiers. Therefore, in Tangiers, the following decisions were made by the delegating authority and Amendis:

- Implementation of a credit system so as to help households finance their drinking water supply network connection (the loan amounts to 100 Dhs/month interest-free over a ten year period)
- A local solidarity fund was set up. It is funded by the municipalities through the integral retrocession of the town fees/tax during 10 years from Amendis turnover.
- Applicants to social connection are exonerated from payment of their first connection contribution while classic connections increased 10%.
- The closing of fountains, decided by the towns, should limit waste and unpaid bills. In addition, the application dossiers were fine-tuned and addressed by Amendis and Redal to different sponsors and co-operation organizations, both national and international, in order to finalize financing/ le montage financial and subsidize the significant acceleration of the social connection plan. Projects were implemented with ADS (Moroccan Social Development Agency), APDN (North Provinces Promotion and Development Agency), AFD, the World Bank and GPOBA with whom an output based aid (OBA) monitoring is currently being defined in Tangiers.

These various aids which are the outcome of a new financial engineering, will enable deprived households to have access to public services, and therefore to live in more satisfactory salubrious conditions and find time for education and/or job search. This is written in the INDH.

Assessment

In many respects it is positive:

- e) *On the technical level*: a new network as a substitute for the wadis was installed (it connects to the old sewage networks installed by the Portuguese and to the sea sewage treatment plant under the old town which undertakes secondary treatment before discharging into the sea). Outputs have been improved (from 63 to 77% in Tangiers, and 53 to 67% in Tetuan)
- f) *On the social level*: over 21,000 households were connected to water supply over 3 years by Amendis and Redal, over 5,000 to sewage treatment and over 26,000 to power supply owing to social connection operations.
- g) *On the commercial level*, recovery rate is 92%. In order to support administrations control their consumption and reduce unpaid bills an approach was adopted; overall customers enquiries have multiplied.
- h) *On the ethical level*, Amendis implemented an ethical purchase policy: suppliers are audited to check that they are in conformity with code of labour and the group's rules with respect to security and quality, in particular.
- i) *Economic sustainability*: péréquation tariff between power and water supply, because electricity has a better return on investment which enables investment on sewage treatment.
- j) *Know-how transfer*: a campus « Veolia Morocco » was set up near Rabat to train personel to sewage treatment techniques; further training and co-supervision of a professional Licence with three universities are provided. The valorization of sewage treatment occupations is coming to fruition, deserving candidates are now keen to enroll.
- k) *Local collaboration*: all of the stakeholders (the State, Wilaya, civil society, Amendis) met to discuss the issue of the need to increase tariffs, a decision which was made immediately (doubling in Tetuan, to align it on the tariff applied in Tangiers). Repeated meetings organized by the Delegate and the delegating authority helped trigger off the problems and obtain the people's agreement. Within six months, the problem was settled. Today the recovery rate is good.

What are the persisting difficulties?

- l) estate constraints : access roads to INDH districts often located in the periphery or even in rural areas need to be opened while most of the land is privately owned and more and more expensive. This results in blockage of social connection operations. Coordination between municipalities and other public services is fundamental in this respect.
- m) considering public service to be delivered by a private operator, there is an increasing need for communication.
- n) industrial dumping is not as yet dealt with (legislation is lagging behind).
- o) financing: the household must pay total amount, which represents a high cost in spite of available aids (credit, solidarity fund). A possible solution is to raise new funds to subsidize connections (Output based aid, public development aid, Bill Gates Foundation).

I.2. Casablanca (LYDEC)

The context

The delegating authority is composed of Casablanca, Mohammedia Urban District, Aïn Harrouda Urban Districts alongside some rural districts. The population delivered by the service is c. 4 million inhabitants. The demand for water and power supply is in the increase. Consumption change shows a 4%.annual increase of water and power supply.

The contract

The contract was signed on 1st August 1997 for a 30 year period. It includes three elements: water supply, sewage treatment, and power supply. In addition, LYDEC¹ has been managing public lighting in Casablanca Urban District since January 2004, and since June 2005 in Mohammedia. In the concession contract, the delegating authority remains owner of infrastructures, while infrastructures financed by the delegate are also the delegating authority property, the delegate manages the services at own risk. LYDEC is but a supplier, and therefore buys water and power ; purchase amounts up to 70% of CA.

- tariff policy

Average annual tariffs are fixed in the contract. They are automatically adjusted when drinking water supply or electricity purchase prices are modified and relative to economic parameters change.

¹ LYDEC stakeholders' composition is mixed. Suez owns 51% of shares, Moroccan stakeholders 49%, of which RMA Watanya 15%, and Caisse of Deposits and Management 20%

- anti-floods plan

Following the 1997 floods investment was made as a prevention against such disasters: creation of the western collector, of the délestage canal at El Maleh Mohammedia, setting up of a control central office in respect of the three skills: water and power supply, and sewage treatment. The controlled level is higher than the authorities' requirements.

Assessment

Over a period of 8 years, the number of power cuts has been divided by 4 and clients' restoration time in case of a power cut divided by 3. Response and intervention time have been reduced and a customer centre was set up. Customers have a better welcome, the agencies are more friendly and accessible, waiting time has been drastically reduced owing to ticketing and opening time changes.

Lydec designed a neighbourhood communication system with their clients through their term magazine «Lydec & You» as to supplement institutional communication on TV, radio and the press.

These improvements were well welcomed by users, the March 2006 satisfaction enquiry reveals that 93% of users are satisfied, against 50% in 1997.

Lydec is also involved in citizens' life: education, social actions, resources water supply resources saving, slums electrification, struggle against illiteracy, Aquassistance? Morocco.

I.3. Casablanca INDH (National Human Development Initiative)

Deprived districts water supply, sewage treatment and power supply plan

The estimated population living in insalubrious housing in Casablanca is 180,000 households according to the Ministry of Housing, of which 20,000 households live in a regulated medina type of housing or in working-class districts, and 160,000 in unregulated housing.

The sites for which the National Human Development Initiative is responsible shelter the 160,000 households living in unregulated households which can be broken down as follows:

-10,000 households have already been connected to the utilities,

-13,000 are being taken care of by the Ministry of Housing, within the framework of re-housing programmes (in built flats) and relocated (serviced plots granted to the households and self-building housing).

-137,000 households should have access to the utilities: power, water supply and waste water treatment, owing to the INDH-Iame Lydec programme over the next 4 years.

The number of persons per household included in the different counts is 5.5 persons, in conformity with the last 2005 Census figures the programme INDH-Inmae de Lydec is therefore responsible for c. 800,000 people in Casablanca.

The overall objectives of the programme are listed below:

- Provide access to the basic services to people living in unsanitary housing (water supply, sewage treatment, hygiene)
- Opt for maintaining rather than re-housing. populations
- Integrate the districts within an overall development plan in Casablanca
- Progressively regularize the estate issue for a modern estate generalization.

For many years, Lydec has been seriously involved in connecting insalubrious housing, water supply and waste water treatment. The difficulty arose from the fact that Lydec only operates, contractually, in the regulated housing, however most of the needs are encountered in the unregulated field. The INDH programme enabled Lydec to work on these new fields.

The INDH Covenant

The covenant was implemented under His Majesty's patronage. The budget is 2.4 billion Dhs (c. 240 million €). Micro-credit is not used because interest rates are too high (18%), and local banks accept to play this part at usual rates which are lower (4%); nevertheless, during local development support stage, micro-credit can then be mobilized.

In the INDH covenant signed in September 2005, the number of households to be connected was estimated to be 125,000, but the current Census actually counts 160,000 households (re paragraph above). Hence, there is a significant data and statistics deficit.

Lydec is looking for 700 million Dhs donations (c. 70 million €) and is currently approaching several bodies for funds: the European Union, the World Bank, the Bill Gates Foundation, decentralized co-operation². There is currently a project with Western Union to mobilize expatriates' funds

² A conference will be held in France in 2007 which will address the issue.

(sponsorship according to geographical areas), another project with the mosques, a civil firm programme sponsored by the Duars. The latter was awarded 3.5 million \$ by the World Bank.

Assessment

In 2006, 16,000 households were taken care of (47,000 people over 37 operations), the first operations are emerging. This example shows that the private sector can play a part usually devolved to the public sector.

The INDH follows a «*bottom up*» approach - in a country used to very «*top-down*» approaches. The debates take place at local committee level, then, proposals are taken up to the governor who establishes the link between the Wali and the local representatives, and who provides the guidelines.

Calling up all of the stakeholders is a success factor. However, standardization and industrialization of works and surveys, in order to replicate the work at a larger scale remain difficult.

Within Lydec itself, the Maîtrise d'Ouvrage Social is a new dimension which takes into consideration the precise needs and the people payment capacity, and informs inhabitants on the good utilization practices of the utilities and, beyond, on local development. Its size (50 out of 150 persons mobilized by the project) is paramount to achieve success.

I.4. Fez (RADEFF)

The initial context

The city of Fez (1 million inhabitants, classified by UNESCO «World Heritage») dumps 100,000m³/day of untreated waste liquid which have caused a 40% pollution of Oued Sebou. The Sebou basin (6 million inhabitants) is the most important in the country (30% of national surface water supply resources, 20% of subterranean water supply resources), but it is also the most polluted. The repercussions are disastrous for irrigation, cattle grazing, health and socio economic conditions; direct and indirect losses amount up to c. 200 millions Dhs per year.

sewage treatment management was entrusted to RADEFF (Fez water and power supply autonomous public company), a social and commercial public establishment.

The service

- *the solution*

Lagooning? lagoonage is not appropriate, a better solution is utilization of activated muds. The produced bio-gas can then be recovered for electricity production. This resulted in the classification of the project as MDP (Clean Development Mechanism), and improved visibility.

- financing

Sewage treatment in Fez cost 70 million Euros: AFD and EIB advantageous loans, subsidy State, and self-financing RADEFF.

- Preliminary operations :

- network restructuring and eradication of open air dumping due to old collectors.
- industrial de-pollution (treatment des margines)

In 1996, a loan from BIRD and AFD allowed the rehabilitation of 70kms of network, auxiliary works and the pre-treatment plant.

Assessment

The city of Fez has suffered a lot from water supply shortage. After 1991 the drinking water supply master plan defined as its first goal the solution of the problem to the public authority. Since 1995 shortage problems have been solved, the whole of the city is connected and water is delivered continuously.

If output rate remains insufficient (57%) bills payment recovery rate is high (more than 90%), which shows users' satisfaction. FODEP and Sebu water supply agency subsidize up to 60% of industrial de-pollution investment. On the technical level everything is ready, it remains the social factor.

Work Progress

- Treatment Project: feasibility and impact studies have been completed, financing is completed, a call for tender is currently prepared.
- industrial de-pollution project: the feasibility study was approved by the follow-up committee, the whole of the industrialists signed a contract in which they undertake to complete the required pre-treatments in 2007-2008. The contract has therefore been the opportunity for beginning a regulation process with respect to industrial de-pollution.

II. TUNISIA

II.1. Drinking water supply (SONEDE)

The context

With 484 m³ consumption per person and per year of a renewable water supply resource, Tunisia should suffer a chronic situation of water supply shortage. However, Tunisia neither suffers from critical nor structural shortage conditions – which would be unacceptable for the people. This is due (i) to the modest share of drinking water supply in respect of the total water supply demand (13%), (ii) to heavy investments made to mobilize the resource (dams and reservoirs). Notwithstanding, there are problems:

- 600,000 people out of 10 million do not as yet have access to water supply. Nevertheless, in order to meet 6% of the national population, required investments are huge – but necessary in respect of the Millennium Goals.
- The needs are on the increase. Rapid urbanization since the 50's (from 25% in 1946 urbanization rate reached 70% in 2006) generated an accelerated demand in drinking water supply, and the trend is on the increase.
- Salinity limits supply (and desalinization is a limited solution anyway).
- Above all utilization efficiency is far from being optimal, in particular with regard to the high level of non facturation.

The service

- the operator

The National Water Supply and Exploitation Company (SONEDE), set up in 1968, is an industrial and commercial public establishment, responsible for water production and supply all over the Tunisian territory. It is managing, under the authority of the Ministry of Agriculture and Hydraulic Resources, 11 sewage treatment plants, over 37 districts.

- Tariff Policy

The tariff system differentiates between 5 different m³ consumption tariff categories per term: 0-20, 21-40, 41-70, 71-150, 151 and over. To each tariff category corresponds a tariff identical to the national level (national solidarity is a requirement owing to wealth inequalities in water supply between North and South). Those who consume less than 20 m³ per term pay the «social tariff» (but should their consumption exceed this tariff category they go over to the higher rate.). Such a tariff system is first a response to a concern for consumption limitation and to a concern for social justice; small consumers are subsidized and do not depend on income- consequently low income large families may be excluded from the social tariff.

A slight over-charging of the industrial and tourist sector helps compensate for the slightest facturation users in the social category.

- Delegation to the private sector

Services delegation to the private sector is gradually implemented in certain areas. The national authority withholds control but can delegate the plant management to a private company.

Assessment

Water supply production increased from 90 million m³ in 1968 to 400 today. The number of districts (localités) delivered increased from 204 to 2600. Storage capacity is important, the distribution/supply network length is 29,000km. SONEDE delivers 100% of the urban population, against 40% in rural areas where it is supplemented by another operator (Rural Engineering General Division, which is gradually replaced by SONEDE); having started in the big cities, the operator is installing the facilities all over the territory, (rural areas to be equipped in a later stage). Overall output increased from 67% in 1968 to 78% today. As for water supply quality, 50,000 analyses per year follow the bacteriological quality of water supply, which proved to be in conformity in 98% of cases (Tunisian and WHO standards)³.

SONEDE's success in public management is the outcome, in particular, of:

- a strong political will: since Independence, Tunisia implemented the project of a society aiming at (i) the emergence of an educated, modern median income group, and open to the rest of the world, (ii) inter-regional balance, social justice and national solidarity ;
- the municipal districts incapacity to manage the services after Independence. Since, 1968, the government made the choice to entrust the services to a single public operator within a national water supply policy. A state secretariat for hydraulics centralizes and coordinates all the activities related to water supply. Thus SONEDE was enabled to avail of sufficient (7000), pluri-disciplinary and quality human resources.

The recentralisation of skills after Independence (experts had in their majority left the country, and those who remained had to be grouped?) will have therefore been an adequate solution to the country's size and needs. Recentralization has thus resulted in a concentration of skills, and also to a national levelling out péréquation and continuity in water supply management from the national down to the local level. The transition to delegated management may bring about a positive adjunct.

In such a context, what does « integrated water supply management » mean? It involves:

- p) a national water supply policy (a legislation and strategies, resources allocation scenarios, national actions plans and in respect of basin versant?, actions coordination) ;
- q) financing mechanisms, follow-up in all transparency;
- r) and governance and control mechanisms to guarantee resource managers' accountability.

In this respect, Tunisia is succeeding in implementing an integrated water supply management.

II.2. Sewage treatment (ONAS)

The initial context

ONAS is the public operator responsible for sewage treatment management in Tunisia. Before its setting up in 1974, several areas were deprived of networks, and only a few districts were equipped with operating sewage treatment plants. The country suffered from serious sanitary problems. The government made the decision to set up a public

³ La SONEDE travaille à l'accréditation ISO 17025 de son Laboratoire Central

body exclusively responsible for sewage treatment with individual and financial autonomy. ONAS missions are: the struggle against water pollutions; construction, management, service operation of sewage treatment and sale of by-products. Operation takes place in the towns scope of the decree.

The service

- costs recovery

Sewage treatment fees covers 60% of operation costs, while 10% are covered by the local communities funds, and 30% by State subsidies.

The State financed 35% of investment, and the amount outstanding was financed through borrowings, donations or other sources.

- tariff

It abides to two principles, polluter-payer, and social solidarity. Domestic users' tariff distinguishes 5 tariff categories, industrial users' depending on the pollution threshold. A balance is established by overcharging the hospitality industry (hotels) and manufacturing industry, to households' benefit. But targeting the lowest income is not very accurate since 70% of the population are to be found in the [0-40 m³] tariff category; revenue from the paid fees in respect of this tariff category represents but 5% of total revenue, while it represents 30% of consumed water supply. ONAS is implementing a new and more securing tariff grid for an improved and more discriminating social targeting to ensure service financial longevity.

Assessment

12,000kms of pipes have been installed. Between 1974 and 2006, 1 billion \$ were invested, half of which during the 2002-2006 period. Today, 5.3 million Tunisians are connected out of the 6.5 million living in urban areas. Rural areas included, the connection rate of the population at the national level is de 55%. 3 million of people living in rural areas are not yet connected (but individual solutions should not be excluded: septic tanks, for which ONAS is not responsible).

There are still several mounting challenges:

- s) Technical: ONAS is looking for less costly and less energy consuming new technologies (il faut internaliser tous les all costs should be, and in the long run – hence the significance of the role of the State); and solutions adapted to small-size towns and to rural areas. This also requires the preparation of master plans for each governorate, and, on a higher scale, for each basin versant in order to take into account both the rural and the urban.
- t) Financial: the existing infrastructures are under-dimensioned considering the increasing needs, and financial balance is still fragile, owing to the present tariff system.
- u) Regulatory: in the new participation call for tenders for the private sector, emphasis is on means, rather than on outputs. But incentives should induce the private sector to augment its participation. Today, 1,500km and 8 stations are delegated, but a delegation to the private sector maximum time is five years, which does not represent a sufficient inducement toward private operators; 7 year contracts minimum should be awarded.

III. ALGERIA

III.1. National situation

The initial context

- A succession of reforms

Between 1962 and 1970, water supply and sewage treatment services management was mostly undertaken by municipal authorities (régies communales), by some inter-communal operators and some private companies (Algiers, Oran, southern towns).

In 1970, as a result of insufficient capacities in the communities/municipalities and services quality degradation, the State set up SONADE, the national drinking and industrial water supply company entrusted as a monopoly with regard to water production and water supply over the whole of the territory. Sewage treatment remained the competency of the municipalities/communities/ communes.

Setting up such a company appeared from the very beginning fraught with difficulties. First of all because facilities and municipal/communal services implementation time, which was fixed by the State, was far too short and did not take into account the required transitions stages studied and defined since the launching of the reform. Furthermore, the creation of the company was opposed by the municipalities/communities themselves communes.

Three years later, the responsibility for the delivery was formally withdrawn and given back to the communes. Management of production facilities remained as the company's only assignment. The problems of this sector were not of course solved. Conversely, as a result of population increase the situation aggravated.

In 1983, SONADE was dissolved and replaced by 13 regional water supply and production firms, under the supervision of the Ministry in charge of hydraulics, for all the territory coverage.

In 1987, a new reorganization of the sector reduced the number of regional firms to 9 controlled by the Ministry of hydraulics and set up 26 Wilaya (département) companies controlled by the Ministry of Interior. The 9 regional firms were responsible for the conurbations while the 26 local companies operated in small and medium-size towns in the Wilayas. However, the sewage treatment service remained within the scope of 950 municipalities/régies communales.

It should be noted that responsibility for water supply services and sewage treatment management remained, in spite of several attempts to centralization at the local and regional level. Thus problems would, in principle, be addressed more appropriately and local actors would participate more actively.

Nevertheless, the multiplicity of management bodies, the diversity of their statutes and supervisory bodies, and especially the great discrepancy of their means and capacities made sector control and regulation very difficult indeed.

- an unsatisfactory assessment

During the period 1962 - 2001, public water supply service was characterized by:

- A cohort of restructuring which did not help stabilize a body capable of developing an efficient financial, technical and management policy.
- Sometimes opposing responsibilities.
- a greater concern of the public powers for investment than for management
- a weakening of control and quality of management of water supply and sewage treatment services.

The response

In 2001, the public powers made the decision to reorganize the sector by regrouping and integrating all of the public regional, wilaya and municipal companies in two nationale companies: **ADE with respect to drinking water supply and ONA with respect to sewage treatment**. The reform was based on the following objectives:

- put an end to a disorderly situation in the sector organization
- implement a rectifying and planning strategy as a guarantee for a sustainable development of the water supply public service
- engage into a re-upgrading action of all the operators
- promote partnership development with national or foreign operators. Indeed, the Water Supply Code authorizes «the private sector to participate as a concession operator to the development of the sector» since 1996 (re the 1996 law modifying the law of 1983. The law was improved in 2005).

ADE intervention, without being crucial, brought about some improvements in the sector management.

Responsibility for water supply and sewage treatment services over all the territory (even if not entirely assumed) has undoubtedly “put some order” in a heterogeneous sector and shared by different institutions (Ministries, wilayas, municipalities/communes).

Nevertheless, in spite of notable improvements in some towns and regions, ADE and ONA performance are still far from attaining the objectives which were assigned to them.

Water supply service quality is still insufficient in a number of towns where water supply is still intermittent. Management technical and financial outputs are improving very slowly.

Public powers, wishing to rapidly and radically change the quality and efficiency level of both services management have thought it advisable to call forth the experience of international companies within a public-private partnership with regard to water supply public services management.

In 2006, the first public-private partnership was launched: Algiers conurbation water supply and sewage treatment management was entrusted to public company, an affiliate of ADE and ONA (SEAAL) managed by Suez-Environment, within a management contract. The scope of the contract is to provide executive and technical personnel, personnel training and know-how transfer for a period of five years.

The Ministry of Water Supply Resources is currently developing this partnership formula through the launching of international calls for tender toward specialized companies with respect to Oran, Constantine and Annaba conurbations water supply services management.

The partnership organization system for these towns is more or less the same as Algiers'. The private company undertakes, within a five year contract signed with an ADE and ONA affiliate company (SPA), to manage drinking water supply and sewage treatment within the urban limits around the above-mentioned big cities.

This solution will be extended to 10 other medium-size towns in the next future.

The development of this strategy should, in the end, probably result in a new decentralization of the management of the drinking water supply and urban sewage treatment sector.

Assessment

- drinking water supply management

At this stage, ADE has only taken over old regional firms having competency over 22 wilayates but is managing, in fact, only 350 out of 810 communes wilayates municipalities. EPEDEMIAs are still present in the 26 wilayates outstanding but is only managing 258 out of 831 wilayates municipalities.

In fact, 3/5 of the municipal districts directly manage drinking water supply. These are small communes which, often, do not avail of sufficient management means.

- sewage treatment management

ONA whose responsibility is the management of the totality of sewage treatment networks and water treatment facilities is present in some urban areas only, and is only managing a few sewage treatment plants.

Water treatment plants current capacity is 4.1 million equivalent inhabitants or 423,000m³/day, but 183,000 m³/day (67 million m³) only are treated today, that is about 10% of used waters overall volume.

- population supplied

In spite of institutional problems connection rate increased as shown in the table hereunder. The fall observed for 1998 seems to be essentially due to a fall in population growth rate.

Item	1966	1977	1987	1998	2005
Population (1,000 inhabitants)	12012	16948	22714	29272	33000
Connection to an AEP network (%)	37.1	45.8	57.8	70.8	79.0
Connected population (1,000 inhabitants)	4458	7762	13129	20725	26070
Connection to treatment network (%)	23.1	39.9	51.7	66.3	75.0
Connected population (1,000 inhabitants)	2775	6643	11743	19407	24750

The total population managed by ADE, EPEDEMIAs and Municipalities is currently circa 28 million for a total water production of 1,600 billion m³/year. That is a gross figure of 156 l/h/d.

- losses level

Nevertheless overall losses may represent 45% of produced volume distributed as follows: 31.5% physical losses and 13.5% commercial losses.

Such figures give a notion of magnitude of endeavour to deploy on both the technical field (rehabilitation and repairs of networks and facilities) and financial and commercial management.

- service quality

An enquiry carried out by the drinking water supply Division of the Ministry of Water Supply Resources, during 2002 last term, shows that less than 10% of Algerians avail of

an interrupted water supply, 50% a daily service with cuts and the population outstanding is supplied every two to seven days.

The situation has improved compared to 2002, which marked the end of a period of significant draught.

The proportion of urban areas where water supply service is only guaranteed every 2 or 3 days has significantly diminished. Nevertheless, round the clock supply is still limited to 9% of conurbations.

III.2. Water supply and sewage treatment in Algiers

The initial context

- On the technical level

On the technical level at contract inception, water supply production facilities, networks were in a state of advanced degradation: degraded engines, high number of leakages. 30% of inhabitants received water every two days or less, and in the town centre water was supplied daily between 6:00am to c. 20:00pm.

As for sewage treatment, treatment rate was 5%, networks were not cleaned out, les postes de relevages blocked with sand. The lower part of the town was flooded whenever it rained. Employees had few tools, few means of transport, old and inadequate networks accessories.

As far as customers are concerned, about 200,000 subscribers did not appear in the base, a third of the counters were blocked, 25% inhabitants paid their consumption in lump sum payments. Many connections were illicit. There was one year of turnover delay in payment.

- the main motivations of the choice of management mode and operator

Most probably, the period of draught in 2003 when water supply was drastically rationed followed by the dramatic mudslide in Bâb El Oued have definitely convinced the government to take efficient steps toward a settlement of this situation.

The Algerian administration often took inspiration from the French model. Therefore, the delegated management mode to a private company was the alternative selected to make progress public service improvement. But, there were several impediments: the absence of cartography, absence of statistics, the extremely high investment required, plethora of personnel employed in water supply and sewage treatment, water supply service political cost, interrogations political change in the country, which did not allow a private operator to commit without foreseeable difficulties.

Thus, Suez Environment and the Algerian State (the Ministry of Water Supply Resources as the main motor for the project) managed to define the following new « business model » :

- Setting up of SEAAL company (100% Algerian company, of Algerian law, Algerian financing, ADE and ONA par affiliate) in charge of delegation of water supply and sewage treatment public service in Algiers wilaya (52 municipal districts – 3.5 million inhabitants).
- Following mutual agreement call for tender with ADE and ONA, Suez Environment undertook to avail SEAAL with about thirty managers (including the General Manager) and experts with respect to SEAAL management, to provide the most modern tools available, and transfer know-how, and finally implement a continued training policy for re-upgrading of all of the 3,800 salaried employees.

- The contract was signed for a 5 year period, during which the Algerian State undertook to invest 200 million/year of which 60 for SEAAL (out of Suez Environment contract), and 140 to ensure major structuring equipment such as water supply (desalination) plants, transfers, sewage treatment plants and other essential feeders or collectors.
- Finally, in order to guarantee contract balance, Suez Environment particularly undertook round the clock water supply over all of the Algerois within 3 and a half years of contract.

A genuine delegation of the public service will only be envisaged upon contract expiry.

- the people's expectations

The people's expectations are huge. It is still difficult today to make people understand that a minimum of time is required before outcome. The sites, guaranteeing the resource, undertaken by the Ministry will be operational, if there is no delay, in the summer 2008 only, which is still too remote owing to the looming risk of draught.

The contract

- actions completed since contract inception are listed below :

- organization of infrastructure (buildings, computerization, cabling), setting up of transversal services linked to the company setting up (financial and administrative division, human resources, Com, existing facilities, technical division and so on), procedures implementation,
- technologies improvement (technological choice are SEAAL's responsibility. As a result of the vicinity of France, French and European contracts are common. Furthermore, Suez Environment also undertook to allow SEAAL access to their purchase network)
- on the field, water supply and waste water treatment operation divisions and consumers division.

The project is launched in all the fields, following the initial materials equipment, gates renewal/re-opening, miscellaneous accessories, power des armoires électriques, search for leakages, procedures and mechanisms quality.

Three types of training were set up:

- training with respect to executives or higher managers according to contract (100 training days in France).
- technical training with respect to all the personnel. Three general trainings have started (pack office, safety, general H24), many more are being prepared.
- Behavioural training on change. At the end of the first year, all the executives would have been included in the first stage.

No specific training in respect of the local authorities who, nevertheless, attend the new team's work with action plans and experts reports which are transmitted on a regular basis.

- constraints

The two main difficulties are the following:

- Putting all of the salaried employees in motion (motivation, change, valorisation),

- convince project opponents (internal and external) -who believe that with money allocated to SEAAAL they would have made it- that it is all about mechanisms, methodological approach, a management mode for sustained operation success.

- resource management

For fear of a draught period some prudent provisions were implemented to anticipate any water supply shortage. More particularly a forced rehabilitation programme in the Mitidja drillings in order to save water supply in the Atlas dams. Within two years, following works reception, this mechanism should be inverted in order to allow the Mitidja water table to build up for it is today overused (drinking water supply but especially irrigation). In the mean time there are no other alternatives.

- coordination between the different stakeholders

Various instances perfectly ensure information dissemination at the required points (Ministry of Water Supply Resources, ADE, ONA, Wilaya and its Hydraulics Division, National Dams and Transfers Agency, National Irrigation Office.). There are no representative associations in Algiers (nor NGOs) which can be considered as trustworthy interlocutors.

- project financing

Owing to resources currently generated by the price level of hydrocarbons, Algeria has not sought associated financing with regard to this operation.

- tariff policy

A national tariff is fixed by the Ministry of Water Supply Resources.

Prices are willingly low, SEAAAL is a subsidized company on an annual basis. The cost of water supply, including sewage treatment, is 28 DATTC/m³ for 80m³ per year, knowing that water supply share is 6 DAHT/m³ and the annual fixed part corresponds to 15DAHT/m³.

Users get 4 bills /year. Bills are sent with a small insert for the dissemination of simple information such as water supply quality, wastage, and so on.

Assessment

Within 9 months of contract, the first outputs can be seen:

- 300,000 new inhabitants benefit from round the clock water supply
- Big cleaning has started (less floods)
- Systematic search for leakage (50,000 m³/day already found).
- Inception of census
- Medium to long term operations launching (schémas directeurs)
-

If assessing population satisfaction level is difficult, there is, nevertheless, in a factual way less press articles on water supply shortages and frequent cuts.

Owing to the price level, service accessibility seems rather good.

It is still too early to appreciate agents' improving skills.

Nevertheless, this kind of business model is interesting for private companies only if it is limited in time, and if the outcome is a sustained public service delegation contract and winning/winning for both contracting parties

IV. MIDDLE-EAST

IV.1. Tripoli (LEBANON)

The initial context and financing

In 1993 at the end of the civil war Lebanon requests aid from France. An audit undertaken by Suez finds out a disastrous situation catastrophique in water supply agencies: lack of economic knowledge, low level of skills, huge debt, technical and management problems, demotivated personnel, and so on. In 1999, AFD accepts to grant a 20 million Euros advantageous loan to the Lebanese State⁴ in order to improve services and network management. 11 million Euros are devoted to infrastructures and 9 million to the operator. Since the Lebanese regulatory framework prohibits private sector intervention in respect of water supply, the State passed a law (L401) authorizing the government to associate the private sector to services management within an “associate management” contract. This new concept provides a better apprehension of reality than the other existing designation (‘delegated management’, or even ‘management contract’ in Algeria). It helps obtain the agreement of a government previously hostile to partnership with the private sector.

The contract

The procedures with respect to the preparation of the contract were extremely long: no less than 4 years! The call for tender was launched in 2002, inception took place in 2003. It is an associate management contract signed for 4 years with Tripoli urban district (400,000 inhabitants); « associate », because personnel remain within public statute, alongside management rules. The contract includes three activities exclusively in the field of drinking water supply: water supply operation and production, service management, and maîtrise d’œuvre.

Assessment

The assessment is positive on the technical level. New treatment facilities were financed by BEI (novel treatment methods were introduced, such as chlorination for water supply disinfection). Repairs of leakages lead to the lifting of rationing which was established during the civil war. Counters were installed to measure what was entering the network. A survey of individual consumption was undertaken in order to assess the people’s needs. An analytical accountability software was introduced. The cartography of the network lead to assets inventory, assessment of required investment (leakages repairs, and so on) and carry out de maîtrise d’œuvre work (network extension and rehabilitation, services computerization).

Assessment is equally positive on the commercial level. There was no customers’ management. Suez set up a customer’s un d’accueil and follow-up service (invoicing), and nformation (explanatory leaflets facture, subscription, emergency phone number). A census of consumers was required. Many were not counted as subscribers when they

⁴ The loan is reimbursed by taxpayers and not by the water supply bills paid by households.

had moved or died during the fightings, the building had been destroyed... in the beginning may questions were asked then the number of requests stabilized.

Assessment is equally positive on the *financial level*. Bills recovery rate doubled (from less than 30% to over 60%), which shows users' satisfaction. The recovery of the previous debt (particularly the power supply bills) has started. Currently the tariff pays for operation (excluding Ondeo personnel charges) and small repairs. The balance is still fragile and is maintained owing to AFD credit. Nevertheless, a part of the tariff is currently used to pay for the previous debt; the total payment of the debt will release finance in order to reinforce service financial balance.

From a *human* viewpoint the assessment is positive: an important endeavour with respect to personnel training accompanied the Office computerization (which availed of four computers in 2003!).

The difficulties were linked to:

- Administrative blockage for the Lebanese administration was not really convinced of the relevance of such a contract
- Political problems, the supervision committee was composed of former personnel of the Office
- Management problems, Ondeo is obliged to use the rules of the public sector
- The magnitude of the debt (the Office did not pay its power supply bill).

IV.2. Amman (JORDAN)

The initial context

The context found out by Suez was more or less similar to Tripoli's: Amman suffered from a severe rationing; network leakages revealed a very low level of output; bills payment recovery rate was very low; networks were not maintained; personnel was demotivated, and so on... A feature common to all the Middle-East: the customer's culture did not exist, the administration was supposed to be a universal provider.

The contract

Networks rehabilitation and service improvement were financed by the World Bank. A management contract with respect to water supply services and sewage treatment was signed in 1999, and extended twice. The operator LEMA is the result of a partnership between Suez environment and a local operator: MWHAJ.

Assessment

Salaried employees' motivation (bonus), computerization and the development of a customer culture represented the main stakes. A long time was given to personnel training (130,000 training hours). Just as in Lebanon, an analytic accountancy – which does not exist in the public service – was implemented.

The outcome: a drastic reduction of repair time, the relationships with customers were developed in parallel; customers are kept informed by sms (rapid and low-cost), counters were replaced up to 50%, water supply quality has been improved

Nevertheless, difficulties subsist:

iv) In contrast with Tripoli rationing has not been lifted (which technical problems: at restart, counters also contain air in the pipes, which was blown forward by incoming water).

v) In spite of (many) repairs, network output does not exceed 72% (while the contract requires 80%), the network may be too old or the counters may be of poor quality or mal étalonnés; lack of water supply billing can also be explained by way of illegal connections. Hence the impression of a maximum which can hardly be exceeded.

w) It is necessary to undertake a total evaluation of existing facilities, but with a longer contract time as in Casablanca (where there is a master plan for 20 years, which allows optimization of networks renewal). The long term is more economic. Service durability is a sensitive issue: the contract expires in December 2006, following two extensions, what will happen next?

IV.3. Alexandria (EGYPT)

The initial context

- the water resource

The Nile is the main source of drinking water supply in Egypt. The Egyptian-Soudan Agreements of 1959 limited the available quota for Egypt to 55 billion m³ per year, which makes Egypt the biggest consumer of the River Nile waters. Nevertheless, even if such a volume is abundant, it remains constant in spite of the Egyptian population increasing one million a year. One of the country's mounting challenges is therefore the reduction of the dependence on the river (through changes in the modes de consumption or resources development) in order to avoid the situation of water supply shortage. Even more so when the sharing agreements left out Ethiopia, whose needs are also on the increase, and may one day question passed agreements.

Nevertheless, while the largest part of the Egypt territory is located in a deserts climate, Alexandria enjoys a relatively high level of rainfall, c. 200mm per year, which was used throughout history to fill the famous cisterns of the town.

- old or insufficient infrastructure

Most often rainfall takes the form of storms and they a negative part because of lack of adequate piping and absence of sewage treatment system generalized to the whole of the city, which would be in addition sufficiently performant. Indeed, instead of contributing to the production of drinking water supply, they cause spreading of pollution linked to human and industrial activities in a high-density region (c. 5 million inhabitants). Waste water infiltrates the drinking water supply network, which is getting too old in most of the town.

Tap water has ceased to be regarded as potable for a long time.

- sewage treatment, a priority for the public authorities

At the end of the 70s, the Egyptian authorities realized the magnitude of the problems, in terms of both public health and coast pollution. Indeed, sewage, from all kinds of sources, was dumped without any retreatment, into the Mediterranean. Significant endeavour was deployed on the the institutional plan and toward sponsors in order to raise the required finance.

- water supply management modernization

Prior to 1860, there was no public drinking water supply service in Alexandria. In 1860 two companies were entrusted with the production and delivery of drinking water supply, a French and an Egyptian multi-national company. The Egyptian government bought back the French company in 1867, and the Egyptian company in 1879. then both companies to an English limited responsibility company, before nationalizing Alexandria water supply company in 1968.

In 1971, the government made the decision to decentralize the management of water supply and sewage treatment services. Production and distribution of drinking water supply, and collection were then entrusted to Alexandria Water General Authority (AWGA) Alexandria while the General Organization for Sanitary Drainage (AGOSD) inherited of implementation of sewage treatment polity. Both entities were placed under the control of Alexandria Government and no longer under that of the Ministry of Housing and Public Services.

But their autonomy with respect to decision-making and financial is limited. Revenue from water users covered but 25% of costs, State subsidies guaranteeing the balance.

The response

Following the Kippour war (oct. 1973) Egypt received favourable attention from sponsors owing to the positive role for peace. Thus, since 1978, USAID donations led to the rehabilitation of part of the infrastructures (200kms of sewers) and to build sewage treatment plants (located principally in the east part of the town). Since 2000, thirteen out of the fifteen collectors which dumped sewage directly into the sea were closed.

France, Germany and BEI undertook the construction of a sewage treatment system in the western part of the town (Mex and Agami). The projects, lauched at the end of the 1980s were the scope of in-depth studies and a narrow collaboration with the Egyptian authorities, but a number of difficulties were encoutered.

Institutional instability, the multiplication of actors and lack of coordination among them represented handicaps. Following the 1971de-centralization, the Egyptian Government replaced sewage treatment in Alexandria under the control of the Ministry of Housing and Urban Services (NOPWASD).

Then, under the sponsors' pressure and in order to modernize services management, drinking water supply and sewage treatment services were reorganized in 2004. The management administrative bodies for water supply and sewage treatment changed into mixed economy companies, under a national « Holding company » control.

AWGA has therefore changed into Alexandria Water Company (AWCO). Its new statute grants it with a wider autonomy, it can for instance apply for loans and make investments. The objectives consists in improving efficiency and productivity by reducing losses, improving technologies and proceed to a transition of personnel management to the private sector. AWCO organizes training for its employees for an improved mastery of the new production and management water supply technologies. 94 employees attended training in the United States, in Greece, in the Netherlands, in Germany and Italy.

A new tariff was implemented as described in the table below:

User category	Tariff
---------------	--------

1	Households	23 piastres, for consumptions lower than 20 m ³ 25 piastres, for consumptions 20 - 60 m ³ 35 piastres, for consumptions higher than 60m ³
2	Civil works and construction companies	80 piastres
3	Youth centres, sports clubs, trade unions (75% reduction)	60 piastres
4	Mosques and authorized associations (50%)	42 piastres
5	Non-authorized Associations	48 piastres
6	Most important social clubs	100 piastres
7	Firms, private schools, petrol stations, industries , mills	80 piastres
8	Private hospitals , first class hotels, investment firms	115 piastres
9	Business	70 piastres

The tariff permits a balance :péréquation between the different categories of users. The tariff is higher in respect of tourist activities (first class hotels), private hospitals, business, manufacturing industries and investment companies than households. Mosques and associations (other than the trade unions and sports clubs) benefit from a preferential tariff which is nevertheless higher than households'. A balance/péréquation is equally established between households: the biggest consumers (>60m³) subsidize the smaller ones (<20m³).

A regulation body was set up: "the Central Authority for the Drinking Water and Sanitation Sector, and Protection of the Consumer", responsible for, under the control of the Ministry of Housing, services and urban districts, defining and implementing the quality standards and controlling the price of water supply.

Assessment

Assessment is nevertheless mitigated.

The projects in Alexandria central and oriental parts were completed. Coastal pollution was thus reduced owing to the closing of collectors but an important problem subsists. Some toxic dumping still filter through canals bouchés (such as the Mahmoudeya canal), certain industries still dump their sewage without previous treatment, particularly into the rade Aboukir which is biologically dead.

However, in the western part of the town, projects faced a number of difficulties: owing to political choice, the tariff does not allow recovery of operation charges, which demotivates investorr and sponsors. Some (BEI and KfW) put conditions with respect to award of financing: a tariff reform should be implemented so that sewage treatment cost be included in water supply and operation charges tariff.

The Egyptian government has made the decision to reject all the offers of investment, including those which conditions were less demanding. Instead, on the of a ministerial change, a new institutional body was set up, Cairo Alexandria Public Water Organization (CAPWO) which goal is the projects cost reduction without change in the tariff grid.

APPENDIX 3 : Evaluation Sheet

1) Performance Measurement Indicators for operators :

Service	Field	Indicator
Water supply	Continuity (quantity and quality)	Water supply number of hours per day per district (regulated and unregulated) (h/day)
		Bacteriological analyses conformity Rate (%)
	Existing facilities state	Network Leakage rate and unrecorded water supply (%)
Sewage treatment	Collection Level	Used water collection network connection Rate (regulated and unregulated housing)
		Volume of direct dumping to sea (m3)
	Depollution and treatment	Sewage Treatment Rate (%)
Common (with distinct value for each service)	Users' Satisfaction	Claims Rate (%)
	Price	Price relative to households' standard of living (by income, consumed quantity or by district)
	Bills payment recovery	Unpaid water supply rate (n-1) on 31 Dec. year n
	Costs recovery	Share of revenue from tariff in maintenance and operation costs recovery

Indicators Description:

Indicator:	Water supply number of hours per day per district (regulated and unregulated)
Definition :	Average water supply number of hours/day/district
Measurement frequency :	Annual
Unit :	hours/day
Comments :	This indicator gives a notion of service continuity per district including in the unregulated housing.
source:	Technical service

Indicator:	Bacteriological analyses conformity rate
Definition :	Number of bacteriological analyses in conformity/ Total number of bacteriological analyses per year carried out by the monitoring sanitary authority.
Measurement frequency :	Annual

Unit :	%
Comments :	This indicator helps assess water supply conformity to potability criteria (defined by the ministry of health or WHO)
source:	Technical service

Indicator:	Leakage rate (leakage) in the network and unrecorded water supply
Definition :	[Volume considered at house level - (Volume of air in the pipes before filling when there is no round the clock water supply * average number of cuts or restoration)] / Volume supplied counted at departure of water supply reservoirs.
Measurement frequency :	Annual
Unit :	Leakage rate is expressed as %, average volumes m ³ /day, le number of cuts is a daily average
Comments :	When water supply is not continuously delivered counters sometimes also measure on arrival air rejected from the pipes. This may represent quantities not negligible in the long run, it seems important to integrate an estimate of this volume in the calculation/us.
source:	Technical service

Indicator:	Waste water collection network connection rate (regulated and unregulated housing)
Definition :	Number of houses connected/ Number of houses counted
Measurement frequency :	Annual
Unit :	%
Comments :	
source:	Technical service

Indicator:	Volume of direct dumping to sea (m3)
Definition :	Average volume of sewage discharged in the sea without treatment
Measurement frequency :	Annual
Unit :	m ³ /day
Comments :	
source:	Technical service

Indicator:	Waste water treatment rate (%)
Definition :	Volume of collected and treated sewage before dumping / Total Volume dumped (treated and untreated)
Measurement frequency :	Annual
Unit :	%

Comments :	
source:	Technical service

Indicator:	m3 price relative to households' living standard (per income, per consumed quantity or per district)
Definition :	m3 price /income range or m3 price/consuming category or m3 price /district
Measurement frequency :	Annual
Unit :	Countries currency unit /m3
Comments :	Price and tariff modulation implemented
source:	Financial Service

Indicator:	Water supply unpaid bills rate (%)
Definition :	Non-payment stock with respect to year n-1/amount of bills issued with respect to year n-1
Measurement frequency :	Annual
Unit :	%
Comments :	Other expenses (works, etc.) are excluded
source:	Financial Service

Indicator:	Share of revenue from tariff in maintenance and operation costs recovery
Definition :	Tariff revenue amount/ maintenance and operation costs amount
Measurement frequency :	Annual
Unit :	%
Comments :	
source:	Financial Service

2) Self-assessment and shared assessment test to the attention of public authorities:

The following table can be filled in for a particular public service or for a set of services (water supply and waste water treatment). Everyone gives a response with a detailed appreciation of the level of completeness of governance effectively implemented at the time of test.

Questions	Answers		
	yes	intermediate	no
- Government objectives and regulatory framework			
Is service improvement and its extension the government priority ?	2	1	0
Is water supply and sewage treatment policy totally integrated in a global planning & development policy?	2	1	0
Is contracting with a public or private operator authorized or encouraged ?	2	1	0
At national level, is there a regulatory framework fixing the overall public service objectives, the standards to be met, the controls to be carried out?	2	1	0
- Public control			
Is there an operational separation between public authorities responsible for service management or organization and those responsible for assessment and control, in the case of public management?	2	1	0
Are service level and goals to be attained by public or private operators clearly defined by responsible public authority?	2	1	0
Is the operator accountable within a discussed and formalized framework?	2	1	0
Is there an effective control of outputs?	2	1	0
- universal actors' involvement/democratic existing facilities			
Are local authorities involved?	2	1	0
Are salaried employees consulted? Do they take a share to outputs?	2	1	0
Are users associated, consulted or involved when important choices are made?	2	1	0
- Implementation and management capacity			

Are there specific training programmes for public authorities (policy design, diagnosis, programme definition, contractual negotiation, etc...)?	1	0,5	0
Are there management training programmes for executives?	1	0,5	0
Are there training programmes for technicians?	1	0,5	0
- Quality and efficiency			
Are there performance measuring indicators covering the whole of activity?	2	1	0
Are such indicators prepared in collaboration with the different stakeholders?	2	1	0
Are measured outputs indicators published?	1	0,5	0
Are routine enquiries carried out with respect to salaried employees and users ?	2	1	0
Is there a collection/follow up/response to users' and the public' claims system?	2	1	0
- Tariff			
Do tariff revenues cover at least service maintenance and operations costs?	2	1	0
Are there tariff modulations?			
Are there tariff modulations?	1	0,5	0
If yes, do modulations take into account:			
- quantity consumed by individuals/households?	1	0,5	0
- income?	1	0,5	0
Is there targeted help/aid?			
Is there targeted help/aid?	1	0,5	0
If yes, does beneficiaries targetting take into account their income?			
Is there targeted help/aid?	1	0,5	0
Are there other kinds of aid to the benefit of the most deprived ?			
Are there other kinds of aid to the benefit of the most deprived ?	1	0,5	0
- Management mode and operator choice			
Is choice of management mode based on preliminary diagnosis or comparisons and evaluations based on representative indicators for the different problems to solve ?	3	1 to 2	0

- Objectives, means, schedule articulation			
Have the objectives to be attained been determined according to a definite and realistic approach while taking the available means into account?	3	1 to 2	0
Final Score			
<i>0 to 48</i>		Profile	
0 to 16 :	Too low		
17 to 32 :	Average		
33 to 48 :	Good		

APPENDICE 4: Workgroup Composition

Chairman :

Claude Martinand

*Chairman, Institute Associate Management
Civil Engineering Council Vice Chairman*

Workgroup Members :

Pierre Beckouche

*Professor, Paris I University
Scientific Consultant, Mediterranean Economic
Prospective Institute*

Marie-Joëlle Kodjovi

*Chargée de mission- Researcher, Delegate
Management Institute*

Mohammed Benblidia

*Honorary Chairman, Mediterranean Water
Supply Institute*

Jacques Labre

*Institutional Relations Manager, Suez
Environment*

Guillaume Benoît

Manager, Blue Programme (Plan Bleu)

Xavier Maître Robert

Chargé de mission, Aquafed

Saverio Civili

Manager, MED Pol

Jean-Louis Millo

*International Co-operation Manager, Water
Supply International Office*

Benoît Cliche

*In charge of Development in North Africa,
Véolia Water supply*

Patrick Philip

Chairman du conseil scientifique, Hydrotop

Amendine Duc

Trainee, Suez Environment

Jean-Claude Séropian

Technical Manager, Lydec

Mohamed Ennabli

*Chairman, Mediterranean Water Supply
Institute*

Jean-Marie Tétart

*Chairman Consultant, Delegate Management
Institute*

Sara Fernandez

PhD student, ENGREF

Gaëlle Thivet

Chargée de mission, Blue Programme (Plan Bleu)

Jean-Louis Guigou

*General Delegate/ Associate, Mediterranean de
Economic Prospective Institute*

Alain Henry

Infrastructure Department Manager, AFD

Arab Hoballah

*Sustainable Consumption and Production
Manager, PNUE/DTIE*

APPENDICE 5 : Officials heard

Nadia Abdou

Chairperson, Alexandria Water Compagny

*Sustainable Urban Development Consultant,
World Bank Marseille*

Néjib Abid

*Planning Department Manager, Tunisian
National Sewage Treatment Office*

Jean-Claude Tourret

General Delegate, Mediterranean Institute

Mohamed Ali Khouaja

*General Manager, National Water Supply
and Operation, Tunisia*

Martine Villars

*Project Associate Manager INDH/Inmae,
planning and management projects, Lydec*

Christian Desprès

*Personel and Administration General
Division, Ministry of Transports, Equipment,
Tourism and Sea*

Nicolas Fornage

Project Manager, Rabat AFD Agency

Olivier Gilbert

*Sustainable Development, Veolia Water
AMI (Africa Middle-East India)*

Abdelkader Hamdane

*General Manager, Rural Engineering
Division, Ministry of Agriculture, Tunisia*

Claude Jamati

*Water Supply and Water Treatment
Institutional Expert, World Bank Institute*

Jan Janssen

Program Manager, World Bank Institute

Attia Khelil

*General Manager, Tunisian National Sewage
Treatment Office*

Mohammed Meziani

*Sewage Treatment Department Manager,
RADEEF (Fez)*

Philippe Odièvre

Executive Manager, LEMA

Gilles Pipien

