

# Financing access to water and sanitation in the Mediterranean

**Is innovative funding a solution or an illusion?**

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## SYNTHESIS

# Water is an endangered collective resource in the Mediterranean

### A scarce resource

Southern and Eastern Mediterranean countries (SEMCs) are characterised by a structural water stress situation. North Africa only gathers 0.1% of the world's renewable natural water resources and the Middle East 1.1%, for a total population of 280 million inhabitants, or about 4% of the world's population. The area hosts about 60% of the world's population who does not have much access to water<sup>1</sup>, that is to say having access to 1,000m<sup>3</sup> of water/inhabitant/year.

### A natural resource that must face growing anthropogenic pressures and climate change impacts

The regional climate change index of the Mediterranean is, along with that of North-East Europe, the highest in the world, according to Intergovernmental Panel on Climate Change (IPCC). An increase of 2 to 4°C in temperature as well as a decrease of 4 to 30% in pluviometry are expected in the area. By 2050, a significant decrease in water resources is expected. Morocco, Algeria, the Near-East and Southern Spain will be the most affected, with a decrease of more than half of their water resources, according to the most pessimistic scenario.

The demographic and urban growth of SEMCs should also increase the pressure on water resources. According to United Nations estimations, the SEMCs' population could reach more than 360 million in 2030 while it currently amounts to 280 million. The degree of urbanization is clearly increasing. 2/3 of Mediterranean people live in cities and more than 3/4 of them should by 2030. Thus, in SEMCs, water consumption should increase from 170 km<sup>3</sup> to 228 km<sup>3</sup> by 2025.

## Water management is a key element for the future of SEMCs

### Many challenges must be taken up...

In the Mediterranean, the water issues regard:

- Better access to drinking water and its quality;
- (Domestic and industrial) sewage water collection and treatment;
- Reducing diffuse pollution;
- Adapting water resources management to climate change impacts.

<sup>1</sup> Source: Plan Bleu



The implementation rate of the Millennium Development Goals regarding access to drinking water and sanitation are quite satisfactory in the area. In 2010, 83% of the population in Mediterranean countries had sustainable access to an improved water source<sup>2</sup>. However, 20 million of them still had no access to drinking water in 2009, especially in SEMCs rural areas<sup>3</sup>.

Due to the littoralisation of the population and the development of informal urbanisation in big cities, sanitation and treatment of sewage water are boiling issues. It is estimated that 60 to 80% of the southern shore inhabitants do not have access to sewage systems or have partial or intermittent water treatment systems<sup>4</sup>.

### **... and they are costly**

Few SEMCs have implemented a system to manage the investments and expenses dedicated to drinking water, sanitation and hygiene awareness, hence the difficulty to quantify the investment needs in this sector.

The needs in terms of financing access to water and sanitation are of different nature:

- Building of new infrastructures and network extension: according to the WHO<sup>5</sup>, to increase drinking water access and sanitation in the Mediterranean<sup>6</sup> so as to reach the MDGs (excluding planning costs) on the 2005-2014 period, 9.8 billion USD a year would be necessary;
- Operational costs linked to maintenance, repair, modernisation and exploitation of existing infrastructures: the WHO estimates that the annual budget necessary to reach the target of MDGs in the region (Algeria excepted), including the maintenance of existing infrastructures and the extension of existing networks given the population increase<sup>7</sup>, amounts to 3.9 billion USD a year for access to drinking water and sanitation on the 2005-2014 period;
- Reinforcing institutional capacities.

### **... but their socio-economic benefits are more than significant if they succeed**

Taking up these challenges would have significant positive effects on the education level, especially for girls, public health and hygiene, since 1 to 5% of deceases in the region are due to insufficient or inadequate services in the water, hygiene and sanitation fields.

The improvement of water and sanitation services in the region would also have a significant economic impact. The economic cost of bad quality water is high: in the Middle East and North Africa it is estimated between

<sup>2</sup> According to the UN, the share of population having access to an improved water source went from 87 to 92% in North Africa between 1990 and 2010 and from 68 to 92% in East Asia during the same period

<sup>3</sup> "Follow up of the sustainable development Mediterranean strategy, Actualization 2013", 2013, Plan Bleu

<sup>4</sup> Report of Mr Roland COURTEAU, in the name of the Senate parliamentary office for evaluating scientific and technological choices, 21 June 2011

<sup>5</sup> "Regional and global costs of attaining the water supply and sanitation target of the Millennium Development goals", 2008, WHO

<sup>6</sup> Definition according to its classification: (excluding Algeria) Bahrain, Cyprus, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Afghanistan, Djibouti, Egypt, Iraq, Morocco, Pakistan, Somalia, Soudan, Yemen

<sup>7</sup> Total costs including the maintenance and repair of existing infrastructures and equipment, the regular replacement of existing infrastructures and the costs of water and sanitation network extension given the expected population increase over the 2005-2014 period, so as to meet the target of MDGs.



0.5% and 2.5% of their GDP, according to the “Fourth UN World Water Development Report”. According to the UN GLAAS report, a better access to water and sanitation could on the contrary increase SEMCs’ GDP by 2 to 7% (WHO, 2010). Therefore, investments in drinking water distribution would bring in 4 to 12 times more than they cost.

## Water management requires a paradigm shift in the region

### A more efficient governance - including financially - is necessary

The major obstacle to drinking water and sanitation access is a bad allocation of existing financial resources. The reorientation in the field requires support measures for the financing of infrastructures: better capacities, involvement of stakeholders, institutional reforms, training, information system, technologies and know-how transfer... Fund-raising must be associated with a quality approach for a better governance of the water sector. In this context, the Algerian and Spanish initiative to define a water strategy for the Western Mediterranean in the 5+5 Dialogue or the initiatives of States like Morocco are to be encouraged.

Given the limited amount that could be mobilized by the concerned States and the Official Development Assistance, it is essential to add extra financing to implement a governance strategy. In 2010, 7% of ODA granted to the water sector was allotted to North Africa and 12% to the Middle East, that is to say respectively 581 million USD and 996 million USD, for a total amount of 1 billion 577 million US dollars, according the OECD database<sup>8</sup>.

### Innovative financing mechanisms are a real opportunity for the water and sanitation sector

In order to cover one part of the financing deficit and allow a better allocation of financial resources, a strategy must be developed around two actions:

- The implementation of an efficient policy of “sustainable costs recovery”;
- The definition of innovative “perennial, predictable and additional” financing (P. Douste Blazy). About 60 billion euros could be mobilised by the innovative financing mechanisms presented in the Ipemed report. Most of them belong to “international solidarity contributions” (P. Douste Blazy).

In the water sector, several pollution tax mechanisms can be considered to increase public financing. They would be based on the integration of the negative externalities of operations that took advantage of the economic development of the Mediterranean. Beyond generating extra financial resources that could partly cover the financing deficit of water and sanitation services, these environmental taxes could encourage “polluters” to reduce pollution sources.

<sup>8</sup> The OECD database does not integrate exhaustive data regarding multilateral organisms funding, such as the EIB or the World Bank and does not include funding and donations from regional Arabic organisms and from the Islamic Development Bank.



### Types of offered solidarity funding and potential effects

SECTOR	ACTIVITY	OBJECTIVE	
		GENERATE FINANCIAL RESOURCES	CHANGE BEHAVIOUR
MARITIME NAVIGATION	Pleasure boats mooring	x	x
	Cruise passengers	x	
	Merchant shipping	x	
	Maritime navigation CO <sub>2</sub> emissions	x	
TOURISM	Tourism infrastructures with high water intensity levels	x	x
REAL ESTATE	Land use of coastal areas	x	x
SANITATION	Absence of purification plants	x	x

## Conclusion

### Water management in the Mediterranean requires an adapted structure with a strong and urgent commitment of all the region's stakeholders

The management of Innovating Financing Mechanisms (IFM) identified in this report requires the implementation of an interdisciplinary governance in favour of access to water and sanitation in the Mediterranean, gathering the States, the fund managing authorities and the civil society in a Mediterranean Water Agency. This agency needs to be structured around three complementary bodies:

- A neutral and independent information system on water resources and pollution causes in the Mediterranean;
- A decision-making general assembly gathering the stakeholders;
- And an Executive body, attached to an international agency that would have a leverage effect by allotting innovative financing to the region's local authorities, operators and NGOs.

Such an approach requires a strong political commitment from Mediterranean States, regional institutions (Union for the Mediterranean) and international institutions (UN) operating in the region.





## ABSTRACT

Water is a scarce resource unequally distributed in the Mediterranean. Southern and Eastern Mediterranean countries (SEMCs) are characterised by a structural water stress situation. North Africa only gathers 0.1% of the world's renewable natural water resources and the Middle East 1.1%, for a total population of 280 million inhabitants, or about 4% of the world's population. This pressure is bound to increase in the following years. The regional climate change index of the Mediterranean is, along with that of North-East Europe, the highest in the world, according to Intergovernmental Panel on Climate Change (IPCC). An increase of 2 to 4°C in temperature as well as a decrease of 4 to 30% in pluviometry are expected in the area. The demographic and urban growth of SEMCs should also increase the pressure on water resources. According to United Nations estimations, the SEMCs' population could reach more than 360 million in 2030 while it currently amounts to 280 million. The degree of urbanization is clearly increasing. 2/3 of Mediterranean people live in cities and more than 3/4 of them should by 2030.

The challenges of access to drinking water and sanitation in the Mediterranean regard better access to drinking water and its quality, as well as (domestic and industrial) sewage water collection and treatment, reducing diffuse pollution and adapting water resources management to climate change impacts.

Taking up these challenges would have significant positive effects on the education level, especially for girls, public health and hygiene, since 1 to 5% of deceases in the region are due to insufficient or inadequate services in the water, hygiene and sanitation fields. The improvement of water and sanitation services in the region would also have a significant economic impact. According to the UN GLAAS report, a better access to water and sanitation could on the contrary increase SEMCs' GDP by 2 to 7% (WHO, 2010). Therefore, investments in drinking water distribution would bring in 4 to 12 times more than they cost.

A paradigm shift based on more efficient governance and a strategic vision of water allocation for its different uses is necessary. This structural transformation, that must be carried on simultaneously as a better understanding of local populations needs, requires a "radical shift in the financial architecture" to quote Michel Camdessus.

Extra financing is an essential condition to implement a Mediterranean water strategy. According to the WHO's estimations, about 17 billion USD would be necessary each year to meet SEMCs' needs regarding access to water and sanitation.

For indebted States which economies cannot afford all the population' needs through the water pricing structure and direct taxation, the Official Development Assistance (ODA) is the main financing source in this sector. However, it remains insufficient to meet these needs. Mostly directed to the financing of big water and sanitation systems, the ODA financing often overlooks governance support and access to basic services.



In order to cover one part of the financing deficit and allow a better allocation of financial resources, a strategy must be developed around two actions: the implementation of an efficient policy of “sustainable costs recovery” and the definition of innovating “perennial, predictable and additional” financing (P. Douste Blazy).

About 60 billion euros could be mobilised by the innovating financing mechanisms presented in the Ipemed report. Beyond generating extra financial resources, the interest of these “international solidarity contributions” (P. Douste Blazy) lies in their capacity to modify the behaviour of some economic actors by a “polluters pay” principle and pricing or tax incentives for users who reduce their impact on the environment.

Such an approach requires a strong political commitment from Mediterranean States, regional institutions (Union for the Mediterranean) and international institutions (UN) operating in the region.

The management of Innovating Financing Mechanisms (IFM) identified in this report requires the implementation of interdisciplinary governance in favour of access to water and sanitation in the Mediterranean, gathering the signatory States, the fund managing authorities and the civil society in a Mediterranean Water Agency. This agency needs to be structured with around complementary bodies: a neutral and independent information system on water resources and pollution causes in the Mediterranean, a decision-making general assembly gathering the stakeholders in a Trans-Mediterranean water committee and an Executive body, attached to an international agency, that would have a leverage effect by allotting innovating financing to the region’s local authorities, operators and NGOs.



## INTRODUCTION

In 2010, the United Nations General Assembly adopted a resolution recognising access to drinking water and sanitation as a fundamental right. This resolution calls for States and international organisations to “supply the necessary financial resources, reinforce capacities and transfer technology to developing countries in order to increase the efforts towards accessible and affordable drinking water as well as sanitation for all.” This resolution reinforces the commitment made by the States at the United Nations Millennium Summit in 2000 to “reduce by half, by 2015, the number of people not having access to drinking water and sanitation”, in the context of the Millennium Development Goals.

Water conservation was also the object of several Mediterranean initiatives, the last one being the Union for the Mediterranean’s proposition of Mediterranean Water Strategy in 2010.

### **Union for the Mediterranean’s operational objectives of the Mediterranean Water strategy (extract)**

“In the short and medium terms (by 2020), according to the capacities, the necessary investments will be made to ensure that 100% of the urban and rural population have access to quality water and sanitation services.

In the medium term, countries will make sure that all urban areas collect and treat urban sewage waters before throwing them back in the environment, thus respecting the provisions of the Barcelona Convention “land-based sources” protocol and the achievement of the objectives of the “Horizon 2020 initiative for the de-pollution of the Mediterranean”.

“Water scarcity” is an economic and social priority in the Mediterranean. The Mediterranean basin<sup>9</sup> gathers 73 groups of drainage basins spread over 22 countries on a surface area of 1.5 million of km<sup>2</sup>. The Mediterranean region only gathers 3% of freshwater resources and 1.2% of the world’s renewable natural water resources<sup>10</sup>, but hosts about 60% of the world’s population who does not have much access to water<sup>11</sup>, that is to say having access to 1,000m<sup>3</sup> of water/inhabitant/year.

These natural water resources are mostly trans-boundary resources: 66% of surface waters in the Mediterranean come from sources that are external to the region.

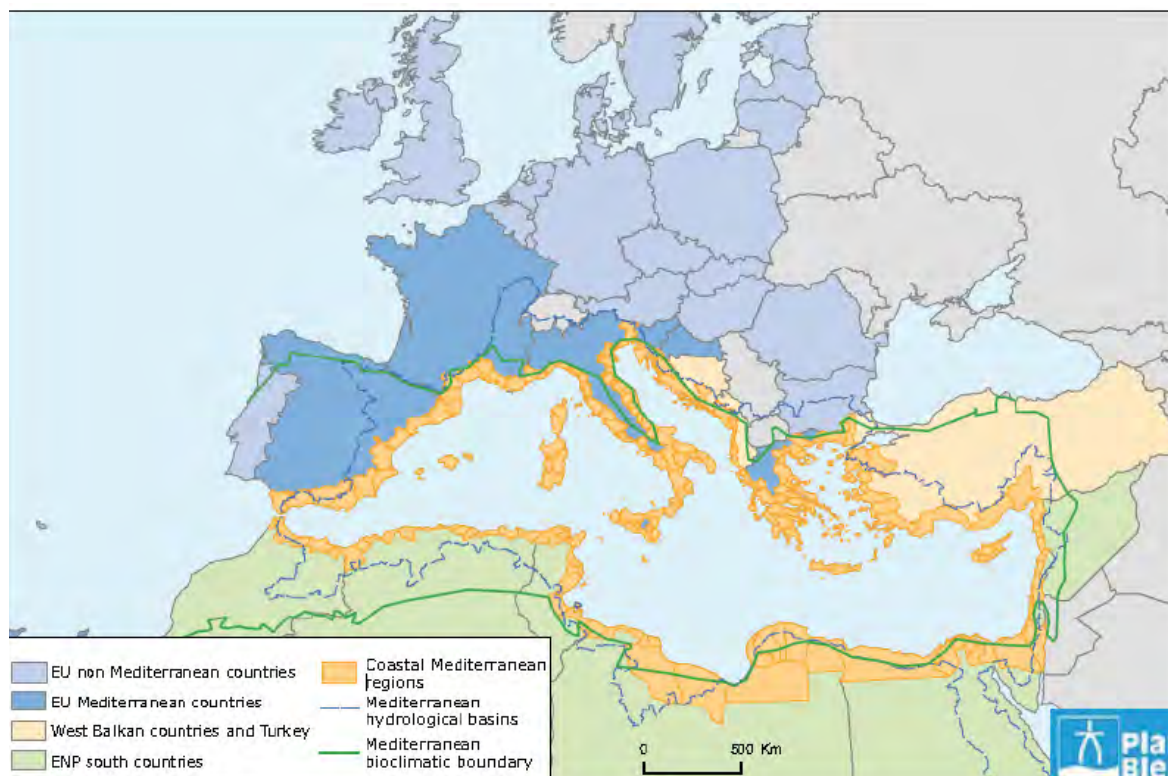
9 Margat says “Conventionally, the Mediterranean basin is considered as all the drainage basins of rivers that flow to the Mediterranean (The Seas of Marmara excepted), limiting the Nile basin to its part downstream of Assouan” In: Méditerranée, Troisième série, Tome 45, 2-1982. pp. 15-29.

10 Renewable waters are the waters available in watercourses (rivers, lakes), water tables or coming from rainfalls.

11 Plan Bleu



Figure 1. THE « BASIN OF MEDITERRANEAN BASINS »



SOURCE: PLAN BLEU, 2014

This limited resource must face external pressures linked to its uses and to climate changes due to global warming. By 2050, a significant decrease in water resources is expected in the Mediterranean basin. The basins of Morocco, Algeria, the Near-East and Southern Spain will be the most affected, with a decrease of more than half of their water resources, according to the most pessimistic scenario.

The implementation rate of the Millennium Development Goals regarding access to drinking water and sanitation<sup>12</sup> are quite satisfactory in the area. In 2010, 83% of the population in Mediterranean countries had sustainable access to an improved water source<sup>13</sup>.

However, inequalities remain, especially in rural areas. 20 million of Mediterranean people still had no access to drinking water in 2009 and 47 million of them had no access to basic sanitation, especially in SEMCs rural areas<sup>14</sup>. Issues regarding quality and hygiene of many drinking water sources still persist, be it for unprivileged urban populations or rural areas.

Access to improved plumbing systems (latrines, pour-flushed toilets...) is insufficient, especially in rural areas. In Morocco, on 1 July 2013, 30% of the population had no access to improved wastewater infrastructure and 48% in rural areas<sup>15</sup>.

12 The UN considers that improved access to drinking water is: the access to a source producing at least 20 litres per person and per day and located at less than 1,000 meters. The UN considers that an improved sanitation system is: the access to a basic sanitation system to evacuate human excrement in the house or nearby (public sanitation network, septic tank).

13 According to the UN, the share of population having access to an improved water source went from 87 to 92% in North Africa between 1990 and 2010 and from 68 to 92% in East Asia during the same period.

14 "Follow up of the sustainable development Mediterranean strategy, Actualization 2013", 2013, Plan Bleu

15 Indicators of the millennium, www.mdgs.un.org



Most international financial institutions estimate that the necessary investment needs are more and more important in the region, far more than the amounts that can be mobilised in the short and medium terms. The European Investment Bank estimates the needs of the southern shore of the Mediterranean for the next ten years at 110 million euros in terms of town planning (water, sanitation, waste treatment, urban transports). Besides, other investments will be necessary to maintain and extend existing networks, to develop workers' skills and to support governance politics.

It seems necessary to mobilize more funding and to support States' capacity for financial absorption thanks to governance support.

ODA's funding are no longer sufficient to cover for the financing gap of Mediterranean countries, especially regarding access to water and sanitation. Several international organizations carried out a reflexion on the relevance of so-called innovative funding to cover financial gaps. What mechanisms could be implemented in SEMCs for water and sanitation? Are they an appropriate solution?

After reflecting on the economic reality of water scarcity in SEMCs, this report identifies the existing and applicable financial means to answer these issues and questions their capacity to meet the investment needs. Finally, it offers a table of innovating funding applicable to this sector that could bring complementary help to the financial needs of this sector.



## THE ISSUES OF ACCESS TO WATER AND SANITATION IN THE MEDITERRANEAN

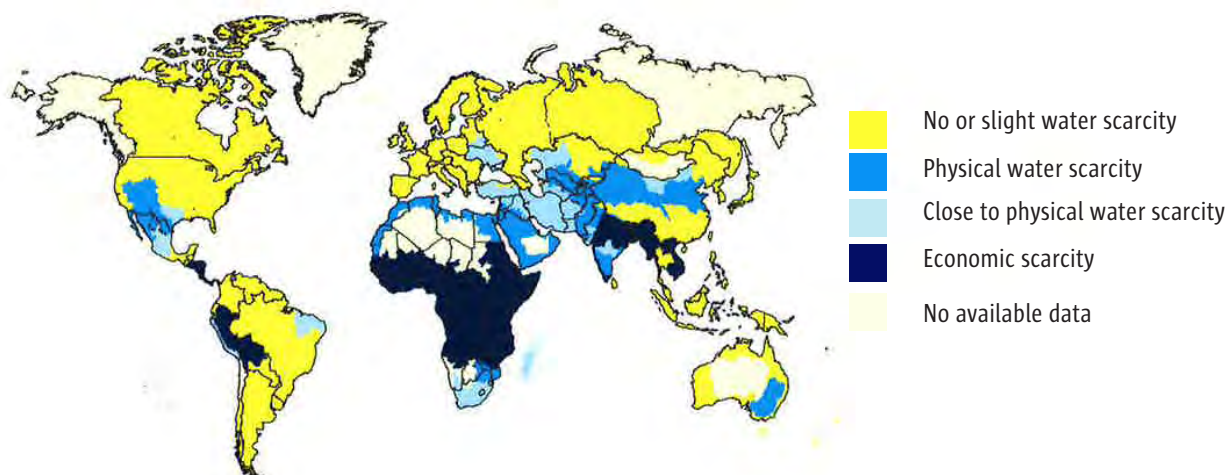
### Limited freshwater resources

Mediterranean countries gather 3% of the world's freshwater resources, or 1,080km<sup>3</sup>/year.

Between the two shores of the Mediterranean, the situations are very different. On the northern shore, the countries benefit from renewable natural water availability of about 3,500m<sup>3</sup>/inhabitant whereas on the southern and eastern shores<sup>16</sup>, they benefit in average from less than 1,000m<sup>3</sup>/inhabitant per year<sup>17</sup>.

On the whole, North Africa only gathers 0.1% of the world's renewable natural water resources and the Middle East 1.1%. Libya, Algeria, the West Bank and Gaza and Tunisia are considered in a "water scarcity" situation (below 500m<sup>3</sup>/inhabitant per year)<sup>18</sup>.

Figure 2. Water scarcity in the world



SOURCE : FAO, 2007

**No water scarcity or slight water scarcity:** Abundant water resources, with more than 25% of water used for human use from the rivers.

**Physical water scarcity:** more than 75% of river flows is dedicated to agricultural, industrial or domestic use. The development of water resources is close or higher than their sustainable limit.

**Close to physical water scarcity:** More than 60% of river flows are used. The basins concerned will experience physical scarcity in the near future.

**Economic scarcity:** water resources are abundant compared to their use, with less than 25% of river flows dedicated to human use, but in a context of malnutrition. Activities, institutions and financial flows limit access to water even though water resources are available locally to meet human needs.

<sup>16</sup> Turkey is considered as a northern shore country and is thus not included in these statistics

<sup>17</sup> The world average is of 6,800 m<sup>3</sup>/inhabitant and per year, see figure 2

<sup>18</sup> "Follow up of the sustainable development Mediterranean strategy, Actualization 2013", 2013, Plan Bleu



### KEY FIGURES

- » North Africa only gathers 0.1% of the world's renewable natural water resources and the Middle East 1.1%;
- » Southern shore countries only receive 10% of the Mediterranean total rainfall;
- » By 2100, the region's climate is expected to increase by 2 to 4°C, pluviometry to decrease by 4 to 30% and the sea level to increase by 20 to 60 cm (IPCC 2007). The regional climate change index of the Mediterranean is, along with that of North-East Europe, the highest in the world according to IPCC.

SOURCE: NOTES DU PLAN BLEU

### Tunisia, the first Maghreb country in terms of water deficit risks

With an availability of 470m<sup>3</sup>/inhabitant/year, the country is considered in a water stress situation. Along with the scarcity risk, there is a serious phenomenon of water degradation and contamination, due to water-table overexploitation, marine intrusion and pollution.

Agriculture remains the first sector for the use of water resources with 83% of total used quantities, in spite of an increasing competition between the various water uses. After the implementation of a strategy centred on the maximum mobilisation of resources and the construction of large dams (95% of the resources are mobilised), important reforms started at the beginning of the 1990's aiming at a better control of water demand and at a better targeting of its use, through the implementation of pricing instruments and the diffusion of water saving techniques. They came with legal and institutional reforms that allowed the transfer of water resources management to water user associations such as the Groupements de Développement Agricole (Agricultural Development Groups).

## An increasing water consumption

According to a recent study of the Mediterranean Water Institute<sup>19</sup>, water consumption in SEMCs is estimated at 170km<sup>3</sup>, 72% of which comes from surface waters sustained by rainfall (water, snow melt...) and 14% from groundwater<sup>20</sup>. This proportion is expected to increase given the effects of climate change on SEMCs rainfall volume.

Water consumption should increase from 170km<sup>3</sup> to 228km<sup>3</sup> by 2025 given the high demographic development that characterizes a major part of the Mediterranean southern shore, increasing urbanization and the development of agricultural production. The sources of this consumption would be of 66% from surface water and 16% from groundwater. The highest demand progression should be observed in Libya (+88%) and in Morocco (+66%).

<sup>19</sup> Jean Margat, December 2011, "What are the current and future water demands and water supply sources in the Mediterranean countries", Contribution to the first Mediterranean Water Forum in Marrakech.

<sup>20</sup> The difference, of 14%, comes from unconventional water sources (desalination, reuse of sewage water etc.)



This increase in demand, along with limited resources, will have negative effects on SEMCs water availability. The Plan Bleu estimates that in 2025, 250 million inhabitants of SEMCs could be in a “water poverty” situation and 80 million in a “water scarcity” situation. The World Bank estimates that water availability per inhabitant in the region will decrease by half in 2050 compared with 2007<sup>21</sup>.

**Table 1. Evolution of water availability in SEMCs**

COUNTRY	Population in million, water in m3 per inhabitant			
	POPULATION 1995	WATER/PERSON	POPULATION 2025	WATER/PERSON
ISRAEL/PALESTINE	5.5	389	8	270
JORDAN	5.4	318	11.9	144
EGYPT	62.1	936	95.8	607
LIBYA	5.4	111	12.9	47
TUNISIA	9	434	13.5	288
ALGERIA	28.1	527	47.3	313
MOROCCO	26.5	1,131	39.9	751

SOURCE: DATA TAKEN FROM TABLES ESTABLISHED BY T.G. OUTLAW AND R. ENGLEMAN REUSED BY MARQ DE VILLIERS IN « L'EAU » [WATER], EDITION SOLIN/ACTES SUD/LEMÉAC, PARIS, 2000

### KEY FIGURES

In 2009, 180 million inhabitants were in a situation of “water stress” and 60 million people in a situation of “water scarcity”. In 2025, 250 million inhabitants in SEMCs could be in a situation of “water poverty” and 80 million in “water scarcity”.

According to a trend scenario, considering the current water use efficiency (loss, waste, irrigation techniques), by 2050, water withdrawals could double or even triple in the southern and eastern shores.

More than 150 million inhabitants, or 1/3 of the Mediterranean population, are gathered on the shores of the Mediterranean.

The urbanization rate on the Mediterranean shores, which is of 50% today, should reach 80% in 20 to 30 years.

The population of Mediterranean coastal States should reach 535 million inhabitants in 2025, with about 300 million tourists in the coastal regions.

Source: Notes du Plan Bleu

21 “Report on the MENA region, Making the most of scarcity: Accountability for better water management results in the Middle East and North Africa”, 2007, World Bank





## A major social and health issue

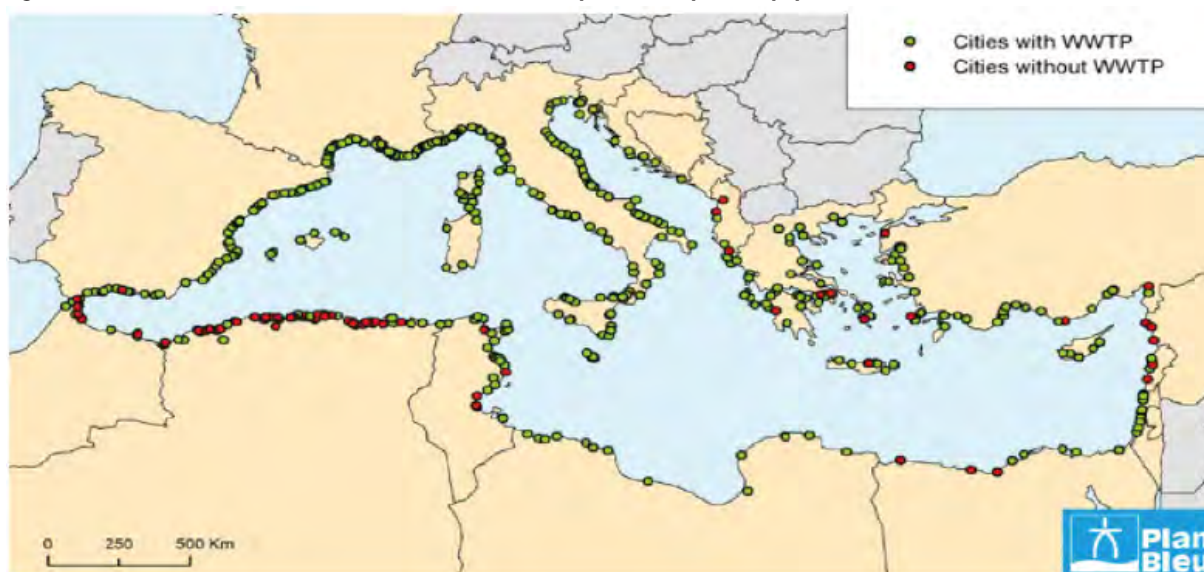
Today, 31% of Mediterranean cities of more than 2,000 inhabitants still do not have a purification plant and 44% of SEMC cities of more than 10,000 inhabitants do not have a water treatment system. Coasts often have more purification plants than inland regions. Urban and industrial waste water discharge could increase by 30% between 2000 and 2025<sup>22</sup>.

For want of regular financing, a high percentage of southern shore purification plants are in poor working conditions. Many existing plants are equipped with primary or secondary treatment methods (physic-chemical processes) but no tertiary treatments, which does not allow the destruction of nitrates and phosphates resulting from agriculture.

Considering these elements, it is estimated that 60 to 80% of the southern shore inhabitants do not have access to sewage systems or have access to partial or intermittent water treatment systems<sup>23</sup>.

Due to the littoralisation of the population and the development of informal urbanisation in big cities, sanitation and treatment of sewage water are boiling issues.

**Figure 3. Situation of Mediterranean coastal cities in terms of purification plants equipment**



SOURCE: "HORIZON 2020 MEDITERRANEAN REPORT, TOWARDS SHARED ENVIRONMENTAL INFORMATION SYSTEMS", EEA TECHNICAL REPORT N06/2014, EEA-UNEP/MAP JOINT REPORT

Developing sanitation infrastructures is essential not only to conserve the quality of available water but also to reduce health risks. The third world report on water resources issued by the UN in March 2009 indicates that in developing countries, 80% of diseases are linked to water, thus causing 1.7 million deaths a year.

22 « La crise de l'Eau en Méditerranée », Julia Anglès, 2009, « Actes du colloque l'eau dans la région de la Méditerranée : un enjeu stratégique », Centre des Études Méditerranéennes et internationales

23 Report of Mr Roland COURTEAU, in the name of the Senate parliamentary office for evaluating scientific and technological choices, 21 June 2011



This public health issue is particularly important in the eastern Mediterranean. In 2010, about 120,000 children under 5 died of diarrhoea because of access to drinking water or sanitation problems, which represented 11% of deaths of children under 5<sup>24</sup> in the region. Between 1 and 5% of deaths in the region, regardless of age and sex, are due to insufficient or inadequate services in the field of water, hygiene and sanitation.<sup>25</sup>

### KEY FIGURES

- » In the eastern shore of the Mediterranean, 11% of deaths of children under 5 are due to diarrhoea linked to access to drinking water and sanitation issues.
- » Between 1 and 5% of deaths in the region, regardless of age and sex, are due to insufficient or inadequate services in the field of water, hygiene and sanitation.
- » 80% of pollution in the Mediterranean come from the continent, since 70% of sewage water poured into the Mediterranean Sea each year is not treated.

SOURCE: NOTES DU PLAN BLEU

## Controversial uses of water

In SEMCs, water is coveted for agriculture, households, tourism and industries. The mediation between these uses is becoming more and more difficult in the region, while it is the basis of economic sectors development and therefore has an influence on the economic and social development model.

**Table 2. Total withdrawals of water resources by sector in SEMCs (2005-2010)**

ZONES (COUNTRIES)	TOTAL WITHDRAWALS ON RENEWABLE RESOURCES (KM <sup>3</sup> /YEAR)	WITHDRAWAL BY SECTOR IN % OF TOTAL WITHDRAWALS			EXPLOITATION INDEX OF NATURAL RENEWABLE RESOURCES (%)
		DRINKING WATER	IRRIGATION	INDUSTRY AND ENERGY	
SOUTH	74	15%	74%	11%	78%
EAST	60	13%	81%	7%	25%

SOURCE: "WATER DEMAND MANAGEMENT: THE MEDITERRANEAN EXPERIENCE", 2012, PLAN BLEU AND GWP

Most SEMCs are overexploiting their water renewable natural resources. Egypt, Syria and Libya, with a natural resources exploitation index<sup>26</sup> superior to 80%, must answer an increasing part of their demand with unconventional sources. Tunisia, Morocco, Spain and Lebanon, with indexes between 25 and 60%, could undergo cyclic tensions.

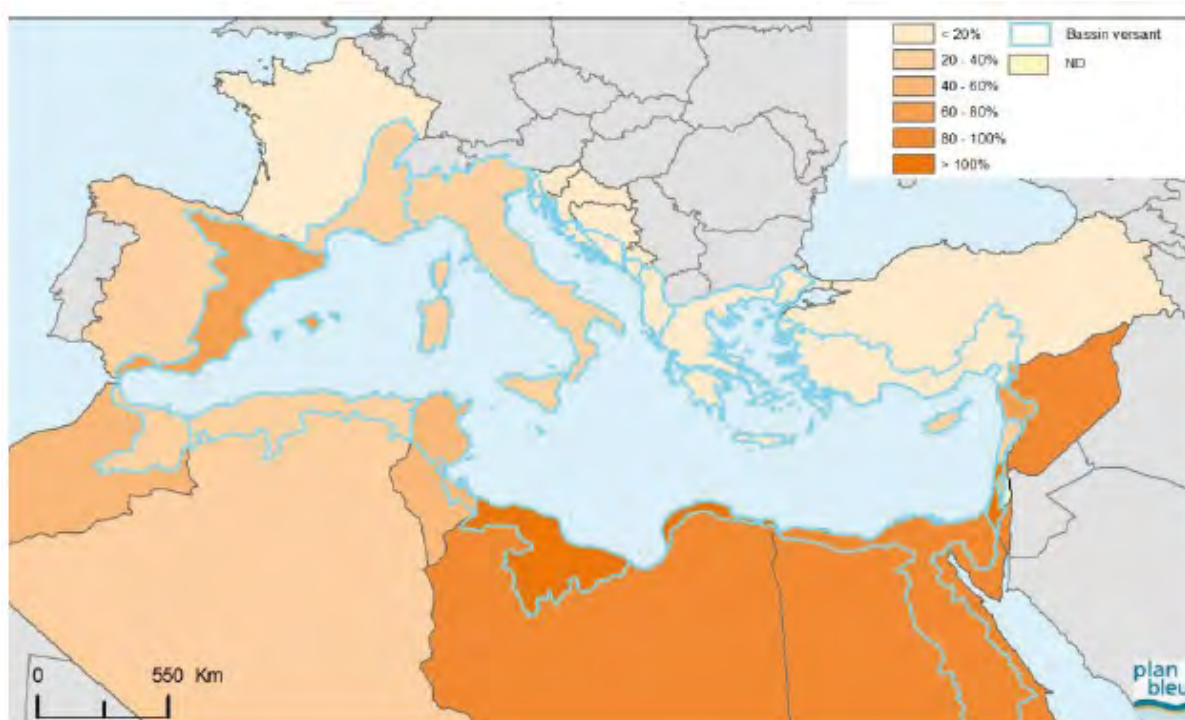
<sup>24</sup> According to the WHO's "World Health statistics 2013"

<sup>25</sup> "GLAAS 2012, UN-Water global Analysis and Assessment of Sanitation and Drinking Water – The Challenge of extending and Sustaining Services", 2012, WHO and UN-Water

<sup>26</sup> This index measures the relative pressure of yearly withdrawals on freshwater renewable natural resources. The withdrawals include transport losses. The resources of each country are defined by the surface and ground-water flows entering their territory.



Figure 4. Exploitation index of water renewable natural resources in the Mediterranean countries and drainage basins in 2000 - 2010 (%)

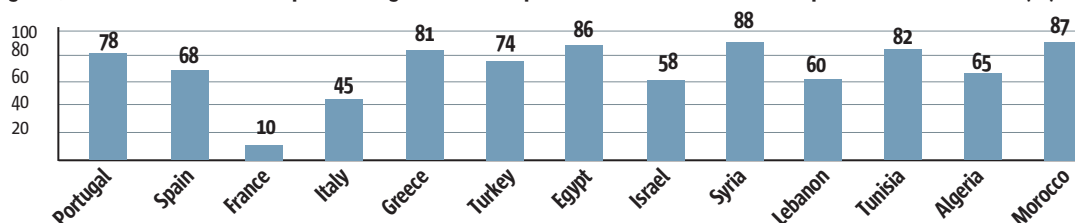


SOURCE: PLAN BLEU, 2013

## Agriculture, the main area of consumption

According to the World Bank, household, commercial and industrial use of water only account for 10 to 15% of the region's needs in water, the rest being taken up by agriculture and environmental needs. In average, 85% of SEMCs freshwater resources are dedicated to agricultural production. This is due to the extension of irrigation and to the increase, since 1960, of water-intensive productions<sup>27</sup>. For many countries, agriculture takes up 4/5 of available water (Turkey, Egypt, Morocco, Tunisia, Greece, Libya) and close to 2/3 in others (Algeria, Spain, Cyprus, Lebanon).

Figure 5. Share of water consumption for agriculture compared with total water consumption in SEMCs in 2008 (%)



SOURCE: FROM FAO AND AFD, IN CIHEAM, 2009

Differences in water resources, associated to an important water consumption by agriculture, lead to a vicious circle for the region since the modernization of agriculture, such as it is implemented in most SEMCs, have increasing irrigation needs.

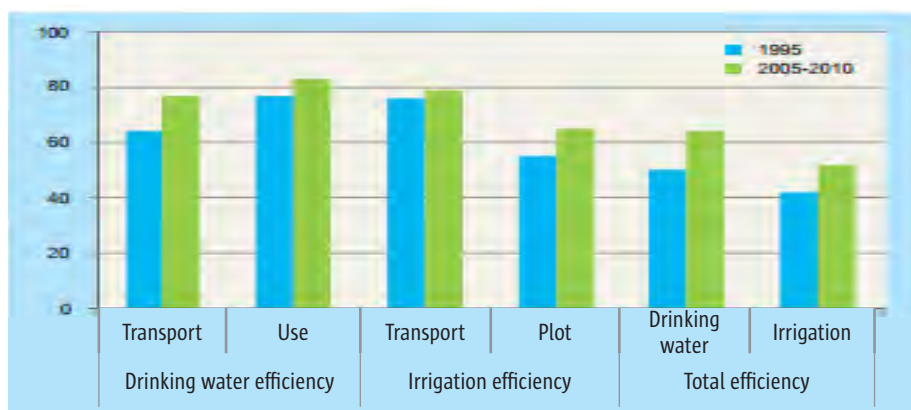
27 « Les dynamiques des ressources agricoles en Méditerranée » [Dynamics of agricultural resources in the Mediterranean], 2011, Ipemed



In SEMCs, irrigated agriculture should remain the main user of water resources. According to the FAO, irrigated surfaces could increase by 38% in the southern shore and by 58% in the eastern shore, to reach respectively 9 million ha and 8 million ha by 2030.

Irrigation water is characterized by a low productivity in SEMCs, especially in Egypt, Italy, Morocco and Tunisia, in spite of a significant improvement since 1995. Irrigation water losses on the big networks and on fragmented irrigation practices<sup>28</sup> are estimated at 88 km<sup>3</sup> in 2010. The total demand in water for agriculture being of 257.9 km<sup>3</sup> per year<sup>29</sup>, these losses account for about 34% of the SEMCs total irrigation water demand.

**Figure 6. Water efficiency, in total and by sector of use in Mediterranean countries in % (comparison 1995 and 2010)**



SOURCE: BLINDA, 2011, PLAN BLEU

Agriculture has several impacts on water quality in the region. Indeed, excess fertilizers can pollute underground waters by infiltration or run towards rivers. On the African continent, North Africa could potentially be the first region in terms of excessive use of fertilizers by 2050 with 20% of the total for nitrogen and 40% for phosphorus<sup>30</sup>.

## Tourism, extra pressure on water quality

The Mediterranean is the first touristic region in the world, with 280 million international tourists in 2009, or 31% of the world tourism<sup>31</sup>.

Five SEMCs developed a strategy based on reinforcing international tourism: Turkey, Morocco, Tunisia, Jordan and Egypt. In 2008, these countries represented 78% of the total arrivals and 89% of touristic spending in SEMCs.

Water consumption for tourism over the year is quite low compared with other sectors: 4.5% of water demand in Malta or Cyprus against 2% in Tunisia<sup>32</sup>. Tourism raises very specific issues by adding extra pressure

28 M. Blinda, "More efficient water use in the Mediterranean", 2012, Plan Bleu

29 M. Blinda, G. Thivet, « Ressources et demandes en eau en Méditerranée : situation et perspectives », [Water resources and demand in the Mediterranean : situation and perspectives] Sécheresse vol. 20, n°1, janvier-février-mars 2009, pages 9-16

30 "Environmental Outlook to 2050: The Consequences of Inaction" 2012, OECD

31 « Renouveler le tourisme euro-méditerranéen » [Renewing Euro-Mediterranean tourism], 2010, Ipemed

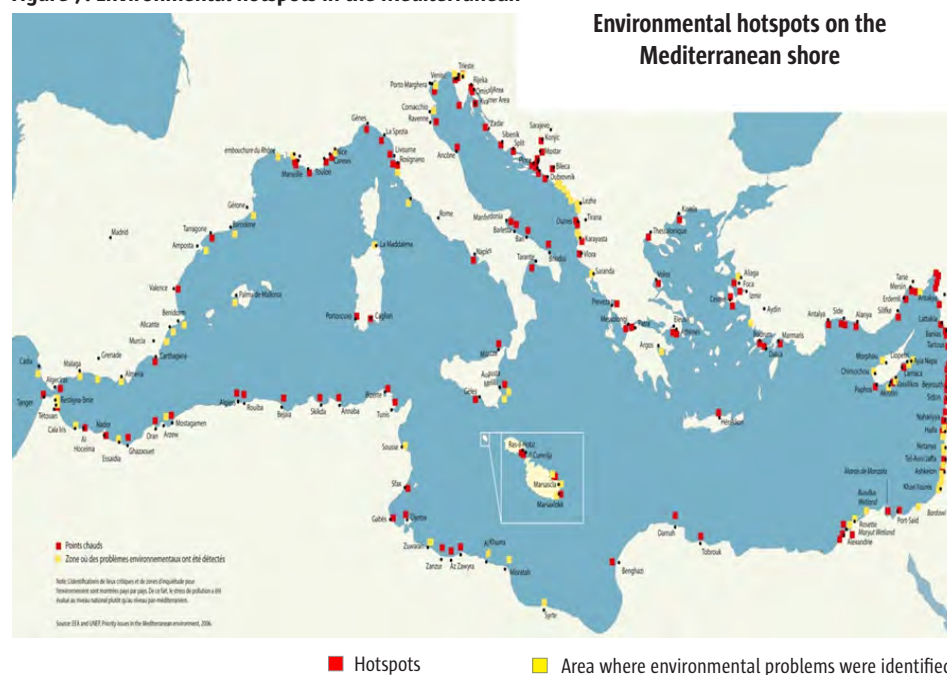
32 "Medstat II: Water and tourism pilot study 2009", Eurostat



during the summer season. In 2009 in Alanya (Turkey) the consumption of drinking water linked to tourism represented more than 52% of the total district consumption. In Tunisia, tourism industry, which is predominant, takes up more than 2/3 of available water during the summer season. This situation can create tensions between competing sectors in terms of allocation of water resources as well as an insufficient supply capacity of infrastructures.

The concentration of touristic activities on the coasts also leads to sewage water rejection on the sites. Yet, the quality of bathing waters is essential to maintain the durability of this sector. Since the 2000's, even though bathing waters quality has become good and even very good on most of the coast, there is still room for improvement to answer pollution threats. 131 “pollution hotspots” were identified in the Mediterranean by the United Nations Environment Program.

Figure 7. Environmental hotspots in the Mediterranean



SOURCE: REPORT « QUALITÉ DES EAUX DE BAINADE » [QUALITY OF BATHING WATERS], OCTOBER 2013, IPMED

### Economic cost of non-compliance:

The closing down of a beach can have a major economic impact on the local activity. The closing down of the Guéthary beaches on the French Basque coast, due to a temporary degradation of water quality, led to an estimated net loss of 56,000/day including the procedures to ensure compliance of the beach and bathing waters charged to the town's budget as well as the lost profit of local touristic operators.



### KEY FIGURES

- » Irrigated surfaces could increase by 38% in the southern shore and by 58% in the eastern shore, to reach 9 million ha and 8 million ha by 2030 (FAO).
- » In 2005, Mediterranean countries welcomed 264 million international tourists, or 30.5% of the world tourism. 637 million (international and national) tourists are expected in the region in 2025.
- » In Europe, an increase of 60% of cruise passengers is expected between 2005 and 2015 in particular in the Mediterranean,
- » 40% of Mediterranean coasts are now concreted over due to urban sprawl, roads, touristic equipment and harbours.

SOURCE: NOTES DU PLAN BLEU

## National strategies that favoured increased supply instead of dealing with demand

In the region, water demand doubled since 1950. National strategies mostly favoured increased supply to meet this demand, especially by building huge irrigation works: more than 1,200 large dams were built in the Mediterranean drainage basin since 1950.

This approach bore fruits in terms of access to drinking water. In North African countries, the share of population having access to drinking water went from 87% in 1990 to 92% in 2011<sup>33</sup>. Nonetheless, territorial differences between urban and rural areas in the same country still exist as well as in formal and non-formal urban areas. Therefore, in 2010, the share of rural population with no access to improved water was, according to the territories, of 25 to 50% in Morocco while it was only of 1 to 9% in the country's urban areas.

Access to sanitation is much contrasted as well. In 2010, the share of population having access to an "improved sanitation system" was in average of 90% in North Africa. In Morocco it was only of 70%. In Eastern Mediterranean countries, the share of population having access to an "improved sanitation system" was of 85% in 2010 and of 90% in Lebanon<sup>34</sup>.

Territorial discrepancies are quite marked. The total lack of access to sanitation infrastructures in rural areas in SEMCs is very worrying. Open defecation is practiced for want of basic sanitation infrastructures and concerns 26 to 50% of Morocco's rural population and 1 to 10% of rural populations in Algeria<sup>35</sup> in 2010, leading to obvious sanitary issues (WHO, 2012).

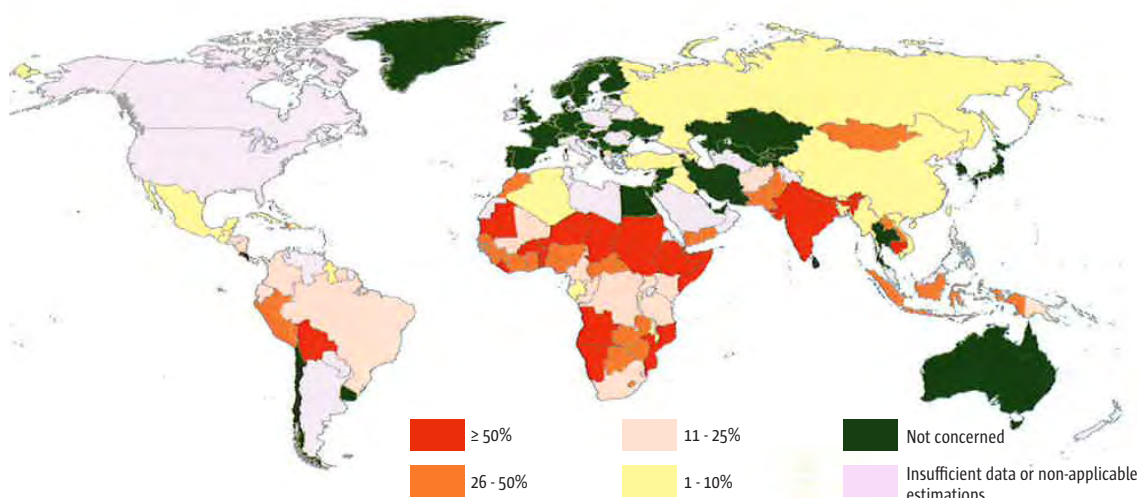
<sup>33</sup> "Millennium Development Goals: report 2013"

<sup>34</sup> "Progress on Drinking Water and Sanitation" 2012, Unicef and WHO

<sup>35</sup> "Progress on Drinking Water and Sanitation" 2012, Unicef and WHO



Figure 8. Share of the rural population practicing open defecation in 2010



SOURCE: REPORT "PROGRESS ON DRINKING WATER AND SANITATION" 2012, UNICEF AND WHO

The policies of increased water offer carried out by SEMCs these last decades show physical limits today (equipment saturation of favourable locations, depletion of some fossil resources, degradation of aquatic systems, shrinking of wetlands...).

An increasing part of demand is thus met with a non-sustainable water production estimated at 16 km<sup>3</sup>/year in the region, 66% of which come from fossil water withdrawal and 34% from the overexploitation of renewable resources.

Important gains in renewable water can be made in the region with an effort to save water. At the Barcelona Convention, the regional objective of 25% water saving by 2025 was adopted, with 2005 as a reference. Meeting the objectives fixed in the Mediterranean Strategy for Sustainable Development adopted in 2005<sup>36</sup> could save up 30 billion m<sup>3</sup> of water per year by 2050, in comparison with a trend scenario.

### Regional objectives of efficiency improvement

The Mediterranean Strategy for Sustainable Development adopted in 2005 by coastal countries fixed as "desirable objectives" in terms of improvement of water physical efficiency at the regional scale and by 2025:

- » For drinking water in communities: bringing supply loss rates back to 15% and users leaks to 10%,
- » For irrigation: bringing water transport and distribution loss rates back to 10% and fragmented irrigation efficiency to 80%,
- » For industry: generalizing recycling at 50%.

Nevertheless, very few signatory countries fixed national objectives in terms of efficiency or deadlines to reach these objectives.

SOURCE: PLAN BLEU, DECEMBER 2007



Water use efficiency is, in spite of encouraging progress, far from being satisfying: loss, transport leaks and waste are estimated at about 40% of the total water demand<sup>37</sup>, that is to say potential savings of 85 km<sup>3</sup>/year in 2025<sup>38</sup>.

Irrigated agriculture represents the biggest potential for water saving in volume, with almost 64% of the potential identified, against 22% for the industry and 14% for drinking water supply.

**Table 3. Assessment of recoverable losses by sub-region (km<sup>3</sup>/year)**

SUB-REGIONS OF THE MEDITERRANEAN BASIN	DRINKING WATER	IRRIGATION	INDUSTRY	TOTAL
	HYPOTHESIS OF EFFICIENCY IMPROVEMENT			
	Network efficiency brought up to 85% and efficiency at users' brought up to 90%	Network efficiency brought up to 90% and plot efficiency brought up to 80%	Recycling generalized at 50%	
NORTH	4.6	18.2	9.5	32.3
EAST	1.8	11.3	2.2	15.3
SOUTH	1.6	18.4	4.1	24.1
<b>TOTAL</b>	<b>8</b>	<b>48</b>	<b>16</b>	<b>72</b>

SOURCE: 2007, PLAN BLEU

<sup>37</sup> "Plan Bleu Notes" N°11, February 2009

<sup>38</sup> "Water Demand Management: the Mediterranean Experience", 2012, GWP





## FINANCING ACCESS TO WATER AND SANITATION

### Benefits of investing in the sector of access to water and sanitation

#### Bad water quality: a high cost for SEMCs

The economic cost of bad water quality is high: in Middle East and North African countries, it is estimated between 0.5 to 2.5% of their GDP, according to the “The Fourth edition of the World Water Development Report”. The World Bank estimates the total GDP of North African and Middle East countries<sup>39</sup> at 1,663 billion USD<sup>40</sup>. Thus, the economic cost of bad water quality can be estimated between 8 and 41 billion USD.

#### Investment in the water and sanitation sector, a factor of growth and social development

The improvement of populations’ living conditions through better access to water and sanitation has indirect positive economic effects due to time saving, health (decrease in waterborne diseases) and health benefits. According to the United Nations GLAAS report, better access to water and sanitation could generate economic benefits of 3 to 34 USD for each invested dollar, which would increase the States’ GDP by 2 to 7%. The investments made in water supply would thus bring 4 to 12 times more than they cost.

As the “The fourth edition of the World Water Development Report” underlies, “investing in water is a growth factor and a key element in the reduction of poverty”. In Agadir, in Morocco, the policies of bathing water sanitation allowed a 2% increase in the region’s financial resources, that is to say 13.5 million euros per year in 2010 and 36 million euros in 2015, thanks to the resulting increase in tourism. In Cairo, the positive impacts on health of the extension of the Gabal El Asfar purification plant are estimated at 35 billion euros a year<sup>41</sup>.

#### Real investment needs

It is not easy to collect reliable and precise data on investment needs in the water and sanitation sector in the Mediterranean.

Few SEMCs have implemented follow-up and management systems regarding investments and spending dedicated to drinking water, sanitation and hygiene promotion. In the SEMCs included into the GLAAS report

39 For a perimeter including Algeria, the West Bank and Gaza Strip, Djibouti, Egypt, Iran, Iraq, Jordan, Lebanon, Libya, Morocco, Syria, Tunisia and Yemen

40 Website of the World Bank

41 Jean-Michel Debrat, 3 May 2010, « L’action de l’AFD dans le domaine de l’eau » [Action of the AFD in the water sector], Symposium « Les instruments économiques financiers et fiscaux de la gestion de l’eau en France et dans le monde », [Financial and tax economic tools for water management in France and in the World], Economic and Social Council



parameter, only Morocco and Egypt answered the survey on this issue. The same applies for investment planning in this sector.

At a global level, the WHO estimates that about 18 billion USD a year are necessary to extend water services in developing countries and thus reach the Millennium Development Goals (MDGs) for water and sanitation<sup>42</sup> and 54 billion USD to maintain existing water infrastructures<sup>43</sup>.

Regarding SEMCs, the World Bank<sup>44</sup> estimates the annual investment needs at 28 billion USD on the period 2005-2010 for Middle East and North Africa countries.

### Needs in new infrastructures and network extension

The WHO<sup>45</sup> estimates the necessary spending in the Mediterranean region<sup>46</sup> at 9.8 billion USD per year to increase water and sanitation networks so as to reach the MDGs (regardless of programming costs) on the 2005-2014 period.

On table 4, we can see that investment needs mainly concern rural areas of Egypt and Morocco.

**Table 4. Spending necessary to increase water and sanitation networks to reach the Millennium Development Goals in SEMCs (2005-2014 period)**

REGIONS (WHO CATEGORIZATION)	Spending (USD)						% OF THE TOTAL	
	WATER		SANITATION		WATER AND SANITATION			
	TOTAL (MILLION)	PER PERSON	TOTAL (MILLION)	PER PERSON	TOTAL (MILLION)	PER PERSON	SANITATION	RURAL
EMR B <sup>1</sup>	292	3	119	1	411	4	29	68
EMR D <sup>2</sup>	2,324	6	7,125	19	9,449	25	75	79
<b>TOTAL</b>	<b>2,616</b>	<b>-</b>	<b>7,244</b>	<b>-</b>	<b>9,860</b>	<b>-</b>	<b>-</b>	<b>-</b>

EXTRACT FROM "REGIONAL AND GLOBAL COSTS OF ATTAINING THE WATER SUPPLY AND SANITATION TARGET OF THE MILLENNIUM DEVELOPMENT GOALS", 2008, OMS

1 - BAHRAIN, CYPRUS, IRAN, JORDAN, KUWAIT, LEBANON, LIBYA, OMAN, QATAR, SAUDI ARABIA, SYRIA, TUNISIA, UNITED ARAB EMIRATES

2 - AFGHANISTAN, DJIBOUTI, EGYPT, IRAQ, MOROCCO, PAKISTAN, SOMALIA, SOUDAN, YEMEN

42 "Development Co-operation", 2012, OECD

43 "Regional and global costs of attaining the water supply and sanitation target of the Millennium Development goals", 2008, WHO

44 "Investing in Infrastructure: What is needed from 2000 to 2010", July 2003, The World bank

45 "Regional and global costs of attaining the water supply and sanitation target of the Millennium Development goals", 2008, WHO

46 Definition according to its classification: (Algeria excluded) Bahrain, Cyprus, Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syria, Tunisia, United Arab Emirates, Afghanistan, Djibouti, Egypt, Iraq, Morocco, Pakistan, Somalia, Soudan, Yemen



## Needs for operating costs of existing infrastructures

Investments are necessary to build new infrastructures. However, other costs must be added such as recurrent operating costs linked to maintenance, repair, updating and exploitation of existing infrastructures<sup>47</sup>. Contrary to common beliefs, these costs are the most expensive in the Mediterranean region.

The annual spending necessary to reach the MDGs' target in the region (Algeria excluded), including the maintenance of existing infrastructures and the necessary network extension given the population increase<sup>48</sup> are estimated by the WHO at 3.9 billion dollars a year for access to drinking water and at 2.74 billion dollars a year for access to sanitation, on the 2005-2014 period. Since the WHO geographical gatherings include, beside SEMCs, the countries of the Arabian Peninsula and countries of East Asia such as Pakistan and Afghanistan, it can be estimated that the needs of SEMCs are be slightly inferior. Nevertheless, these data give us an estimation of the investment needs given the very poor statistics existing on the question.

Regarding spending distribution, we can see in table 5 that recurrent spending represent the majority of the total spending dedicated to access to water and sanitation, 80% for access to water and more than 50% for sanitation, and that they mainly concern the maintenance of existing infrastructures, in a proportion of 70 to 97%.

**Table 5. Total spending necessary to reach the Millennium Development Goals in SEMCs over the 2005-2014 period**

	TOTAL SPENDING (USD MILLION)	CONTEXT (%)		TYPE OF COST (%)		TYPE OF NETWORK (%)	
		RURAL	URBAN	IN CAPITAL	RECURRENT	NEW	EXISTING
<b>WATER</b>							
EMR – B <sup>3</sup>	10,960	25	75	6	94	3	97
EMR – D <sup>4</sup>	28,087	37	63	13	87	8	92
Sub-Total	39,047	-	-	-	-	-	-
<b>SANITATION</b>							
EMR -B	3,300	29	71	10	90	4	96
EMR - D	24,124	50	50	34	66	30	70
Sub-Total	27,424	-	-	-	-	-	-
<b>TOTAL SPENDING</b>	<b>66,471</b>	-	-	-	-	-	-

EXTRACT FROM "REGIONAL AND GLOBAL COSTS OF ATTAINING THE WATER SUPPLY AND SANITATION TARGET OF THE MILLENNIUM DEVELOPMENT GOALS", 2008, WHO

3 - BAHRAIN, CYPRUS, IRAN, JORDAN, KUWAIT, LEBANON, LIBYA, OMAN, QATAR, SAUDI ARABIA, SYRIA, TUNISIA, UNITED ARAB EMIRATES

4 - AFGHANISTAN, DJIBOUTI, EGYPT, IRAQ, MOROCCO, PAKISTAN, SOMALIA, SOUDAN, YEMEN

<sup>47</sup> The WHO estimates at 40 years the lifetime of equipment necessary to the connection to domestic water supply network and at 20 years the lifetime of other equipment dedicated to increase access to domestic water

<sup>48</sup> Total costs including maintenance and replacement of existing infrastructures and equipment, the regular replacement of existing infrastructures and the extension costs of water and sanitation networks given the population increase expected on the 2005-2014 period, so as to reach MDGs' target



Therefore, the maintenance, renovation and modernization cost of existing networks is much higher than the annual cost of network extensions. If we take the global investment needs to reach the MDGs in terms of access to water and sanitation, the distribution will be as such: 75% of annual investment needs are linked to the maintenance and replacement of existing infrastructures, 20% to the extension of sanitation services and 5% to the extension of water services<sup>49</sup>.

Thus, a balance must be found between new investments to supply populations with no access to water and sanitation and the recurrent spending dedicated to maintain existing infrastructures.

*“[Financial] resources are not targeted nor apparently sufficient to cover the standard operating and maintenance costs. The risk of regress is thus very high.”*

EXTRACT FROM THE PREAMBLE OF MICHEL JARRAUD, CHAIR OF UN-WATER, 2012, “GLAAS REPORT”, UN-WATER

### **Are non-conventional waters an economically interesting initiative for Mediterranean countries?**

Mediterranean countries face a strong augmentation of operating and maintenance costs of water infrastructures as their networks are extended.

There are economically interesting alternatives such as the reuse of treated sewage waters, the use of land drainage waters and the desalination of sea water or brackish water. The development of these techniques has the advantage of preserving the natural resource while intensifying water use and of offering water resources complementary to natural resources that can be mobilized locally. Desalination seems particularly interesting for the production of volumes to meet the demand during the tourist summer peak.

This solution is now affordable with costs between 0.45 and 0.6 €/m<sup>3</sup> for big desalination volumes (that is twice more expensive than conventional water and 1.5 times more expensive than treated water). The equipment set in SEMCs could be multiplied by five or six by 2030 to reach a production of about 30 million m<sup>3</sup>/day. However, the energy cost, the impact in terms of Green House Effect, the amount of investments and the depreciation period may prevent their development at a larger scale.

### **Needs for the reinforcement of institutional capacities**

The costs of support and reinforcement of institutional capacities must be added to operation and maintenance costs of infrastructures, for they are often neglected in the global estimations of this sector’s financial needs. And yet, their share is quite important. Their proportion is estimated between 10 to 30% of total investment needs to reach the MDGs’ target<sup>50</sup>.

49 Hutton and Bartram report (2008)

50 idem



Even though many Mediterranean countries adopted a sectorial policy for the urban and rural areas, a reinforcement of capacities is necessary to ensure the good implementation of these policies at a local level. Regarding sanitation in rural areas, only 20% of the countries included in the perimeter of the GLAAS report consider that the offer of skilled personnel and technicians is appropriate to improve the infrastructures. Efforts in terms of information systems can also be made: 49% of North African, Eastern, Central and Western Asian countries do not have national information systems in the sectors of water and sanitation<sup>51</sup>. Budgetary decentralization must also be reinforced.

Nevertheless, these projects have a cost that adds up to the cost of urgent new infrastructures and maintenance of existing ones. In Morocco, the cost of the implementation of priority actions identified to improve the collection of water data was estimated in 2011 at 29 million dirhams, or about 2.6 million euros.

**Figure 9. Priority actions necessary to improve water data collection in Morocco and associated costs**

ACTIONS	COST (IN MILLION DIRHAMS)
Implementation of a new centralized hydrological directory of Morocco allowing the evaluation of annual water withdrawals and of the water demand per use	10
Development and centralization of statistics on water volumes charged and paid per users as well as on the volumes of drinking water produced and supplied in urban and rural areas	4
Realization of a definition study for the Creation of a national Observatory for water demand management allowing to centralize indicators and carry out a benchmarking	1
Development of a database on surface areas classified by irrigation mode, volumes withdrawn and used on the plots	10
Development of a database on water withdrawals by industrials and on recycled water volumes	4
<b>TOTAL</b>	<b>29</b>

SOURCE: ACCORDING TO THE DATA OF THE MOROCCO NATIONAL STUDY "WATER USE EFFICIENCY AND ECONOMIC APPROACH", JULY 2011, PLAN BLEU

### Increasing spending economic efficiency: a major issue

Although financial resources dedicated to water and sanitation must be increased, it is also necessary to improve the economic efficiency of water spending, which requires actions in terms of governance in the sector.

"The Economic perspectives of the OECD on the benefits linked to water and sanitation investments (2013)" insist on the necessity to favour investments with the highest cost-efficiency ratio. For the program of irrigation water-saving implemented by the Moroccan Ministry of Agriculture between 2001 and 2005, it produced as a whole economic benefits superior to nearly 30% of the investment costs, thanks to water saving and an increase in added value and productivity in vegetable production.

51 "GLAAS report 2012"



### Cost and results of the Nation Sanitation Program of the Kingdom of Morocco

In 2005, the Kingdom of Morocco adopted a national sanitation program aiming at a treatment of sewage water rate of 60% and a connection of the sanitation network rate of 80% in urban areas. The total funding mobilized was of 43 billion dirhams, to develop the project in 260 towns.

Since 2005, seven billion dirhams have been mobilized by the ONEE (Nation Bureau for Drinking Water and Electricity) for this program and 16.7 extra billion will be necessary to reach the objectives set for 2020.

These investments allowed the construction of a sanitation network of more than 2,800 kilometres to collect and transfer sewage waters, as well as the operation and maintenance of the network of about 6,200km operated by the ONEE delegated management.

Thanks to these projects, a connection rate of 77% was reached in the 87 towns supplied by these networks, which reached a population of 3 million inhabitants. Besides, 51 purification plants (STEP) with a total treatment capacity of 77 million m<sup>3</sup> were created with this funding.

### Available resources

Given the importance of the investment needs presented here above, we must question the existing and available financial resources, both in terms of origin and amount.

In terms of access to drinking water and sanitation, three sources of revenue can be identified. They are commonly called “3T” for “tariff, tax and transfer”:

- The price paid by users of water, hygiene and sanitation services;
- The government revenue coming from national taxes that is transferred to the sector via central, regional and local authorities;
- The money coming from international donors and charity organizations (including ODA).

In terms of quantities, two options can be considered to raise extra resources:

- Cost reduction, by improving efficiency on existent equipment or choosing cheaper services and technologies for the new equipment;
- Reinforcing one of the “3T”<sup>52</sup>.

### Increase in financial resources through cost reduction

The study “Africa Infrastructure Country Diagnostic” carried out in 2011 estimated that the increase in user fees, the reduction of inefficiencies in the operation of infrastructures (leaks, transport losses) and the improvement of the budget rate of implementation could nearly wipe out the financing gap to reach the MDGs in middle-income countries like those of North Africa. At

<sup>52</sup> Outside these two options, repayable sources of financing remain the only option.



a global level, the amounts wasted by the inefficiency in the water sector are estimated at about 2.7 billion USD a year<sup>53</sup>.

As says Mehdi Lahlou, an economist at Rabat INSEA, projects efficiency could also be improved through a greater implication of the concerned populations. An effort to increase the “social acceptance” of projects could reduce the projects’ execution time. Projects’ objectives must be better explained to concerned local populations, through participatory initiatives to ensure a real durability of projects.

### Efficiency defects at the heart of financing issues of the water and sanitation network in Egypt

In Egypt, a strategic financial planning carried out in the Greater Cairo region with the help of the European Union Initiative in the water sector and of the OECD came to the conclusion that the decrease in domestic consumption, the decrease in water losses and the improvement of waterworks efficiency could decrease by 19% the system’s global costs. However, it would not solve the structural financing gap of the city. If no measure is adopted, the financing gap could increase by 46% by 2026 because of the very low user fees, of the delays in investments accumulated over the last decades and of the demographic development expected for the next twenty years.

SOURCE: “MEETING THE CHALLENGE OF FINANCING WATER AND SANITATION: TOOLS AND APPROACHES”, 2013, OECD

### Balancing the “3T” by increasing water use revenues

The balancing of the “3T” is another key factor of the economic policy of access to water and sanitation. It is essential to work beforehand on realistic long-term financial strategies in order to ensure sustainable cost recovery.

The concept of “sustainable cost recovery” was introduced by the Camdessus Panel in 2003 around three characteristics:

- » an appropriate balancing of the 3T allowing to finance recurrent and operating costs, as well as mobilizing other financing forms,
- » predictable public subventions to make investments and their planning easier,
- » an adapted pricing, affordable for all, even for the poorest, while ensuring the financial durability of service providers.

The question of the price of water supply is essential for beside the revenues it generates, the price can have a significant impact on water consumption modes.

The antagonism between the principle of financial viability and the necessary affordable price can be overcome with a good conception of the fees: pricing depending on the tax brackets, implementation of payment facilities, income support to underprivileged households...



Nevertheless, because of the household economic structuration, still fragile in SEMCs, it won't be possible for the system to rely only on pricing before the medium term. As Maurice Bernard, Director of Operations at the French Agency for Development, says, *"the importance of pricing in the financing of water in Europe and in France especially is very recent"* and was supported by the taxes for a very long time. It is very likely to follow the same pattern in SEMCs.

### Water policy in Israel: reduction of consumption and extension of economic instruments

The national objective of Israel is to progressively reduce its dependence on natural drinking water by 2050.

The main initiatives taken by public authorities aim at decreasing the daily water demand through:

- » legislative obligation to count the water distributed in its entirety,
- » reuse of water and of brackish water in agriculture,
- » development of drip irrigation and reuse of treated urban sewage water in agriculture,
- » the authorities are also trying to increase drinking water supply by constructing big sea water desalination plants.

Economic tools were defined in order to better deal with demand and encourage a better allocation of resources, especially in the agricultural sector. The pricing of drinking water used for irrigation were significantly increased while the price of domestic treated sewage waters was fixed at 1/3 of the price of drinking water. Each year, a drinking water quota is granted to agriculture and the farmers who decide to exchange part of this quota against substitution sources benefit from a guaranteed price for their water supply and from a 20% extra quota of free water.

Finally, the infrastructure of treated effluents is subsidized to up to 60%.

SOURCE: "ENVIRONMENTAL OUTLOOK TO 2050: THE CONSEQUENCES OF INACTION" 2012, OECD & "OECD ENVIRONMENTAL PERFORMANCE REVIEW: ISRAEL 2011", 2012, OECD

### Revision of the sector's governance and government finances strategies

There is a strong perception, especially of States, that their financial capacity is not sufficient to meet such needs. 44% of North African, East, Central and West Asian countries estimate that the financing of objectives related to sanitation and drinking water is insufficient, especially in the sector of sanitation<sup>54</sup>. And yet, many international organizations (UN, Unesco) as well as international donors (World Bank, EIB...) highlight that the main obstacle to water and sanitation access is not a financing gap but a bad allocation of existing financial resources. They estimate that the sector's reorientation requires not only a financial effort but also many measures of support for financing infrastructures: reinforcement of capacities, consultation of stakeholders, institutional reforms, training, information system, technologies and know-how transfer. Beside raising funds, a qualitative approach of better governance in the water sector must be implemented.





*“In order to work durably, the management of water resources and water-related provision of services must be better financed. This financing will be useful not only to invest in infrastructures, but also to key elements such as data collection, analysis and diffusion, and to the development of human resources and technical skills. It is also essential [...] that water governance is financed in an appropriate way.”*

EXTRACT FROM “OVERVIEW OF KEY MESSAGES FROM THE WWDR4”

Even though public funds are limited by financial constraints and by the multiplicity of demands, credit appropriations allocated to water could be increased. The results of a survey of the 2010 GLASS report indicated that countries spent (from internal and external sources) between 0.04% and 2.8% of their GDP in the water sector and between 0.01% and 0.46% for sanitation. Although these figures do not completely report public spending and do not include private sources of financing, the budget allocated to the water and sanitation sector remains insufficient, under the recommendations of the OECD and the Camdessus Panel, which recommend that the financing of this sector amount to 1 to 2% of each country’s GDP for the next twenty years.

The tax question lies at the heart of these issues. As the 2010 “Economic Perspectives in Africa” shown, the tax revenues are potentially 10 times higher in Africa than the ODA. A more efficient tax collection, especially direct taxation, would bring more than half of the sums necessary to reach the MDGs – over 60 billion USD, all developing countries combined. According to this report, middle-income countries such as SEMCs and especially those of the superior bracket where the annual income is higher than 4,000 USD per inhabitant (Lebanon, Algeria, Tunisia) should be able to reach the MDGs thanks to their national resources, by implementing targeted transfers and public programs to fight against poverty, improve education and healthcare, *a fortiori* if the reforms necessary to the improvement of public spending quality are implemented<sup>55</sup>.

55 “Can We Still Achieve the Millennium Development Goals?”, 2012, OECD



### Lack of appetite of the private sector

International private funding can have an important role for developing countries. In terms of financial help, they are as important as the ODA since they represent about 40 billion USD over the 1991-2000 period. A certain number of projects such as the treatment of sewage waters, desalination, collection and reuse of sewage waters can be taken care of by independent commercial businesses financed by invested capital and other types of commercial financing.

Since 2007, the financial situation made difficult the acquisition of funds for water because private interests looked away from water infrastructure projects, considered as very capitalistic, with long depreciation periods and low yield rates compared with other sectors. These characteristics generate high contractual and regulatory risks, in a context characterized by insufficient information on asset conditions and a low regulatory context. Besides, most revenues coming from water services being in local currency, the currency exchange risk is a problem.

This explains why the water sector is the sector which attracted less private investors and why the amounts at stake were so modest. According to Gérard Payen, Chairman of Aquafed, only 1/10 of citizens in the world are supplied by a private operator. And yet, the market of water and sanitation services generates wealth: a 2010 study of the socially responsible investment company "SAM" estimated the water world market at 480 billion USD.

### Reinforcement of ODA's efficiency

However, the development of domestic resources must not be a pretext for donor countries to avoid meeting their obligations. Reinforcing targeting, ensuring the consistency of resources and the efficiency of aid flow is essential.

The current trends indicate that the pricing of water services and State subventions are mainly used to cover the operating and maintenance costs of water and sanitation infrastructures, while ODA's transfers and repayable capitals are mainly used for the extension and creation of new infrastructures. This implies that ODA's help towards SEMCs and water and sanitation sectors must be constant and even increasing and that they should target the needs of these countries in terms of technical assistance.

According to the OECD Development Assistance Committee, the ODA is constituted by "all the resources given to the countries and territories of the ODA's beneficiary list, or to multilateral institution, and meeting the following criteria:

- » Coming from public organisms, including States and local authorities, or from organisms acting on behalf of public organisms;
- » Knowing that each operation must: aim at favouring the economic development and the improvement of developing countries standard of living, present favourable conditions and contain a grant element of at least 25% (on the basis of a 10% discount rate)."



The amounts dedicated to water in the ODA significantly increased after the definition of the MDGs' target on water and sanitation and the UN's recognition of the right to water. The share of water went from less than 4% in 1980 to 7% of the Official Development Assistance in 2009-2010, that is to say from 2 billion USD to 8.3 billion USD<sup>56</sup>. In 2010, 7% of the total help granted to the water sector was distributed in North Africa and 12% in the Middle East, that is respectively 581 million USD and 996 million USD, representing a total amount of 1 billion 577 million USD, according to the OECD database<sup>57</sup>.

The ODA is insufficient to finance alone the necessary investments to the network extension and the building of new infrastructures. Besides, the ODA amounts must be tempered for since they are commitments, they often take long to be spent, especially for heavy infrastructure projects and can lead to delays in projects planning.

Finally, even though this help increased compared with the 1980's, the financial crisis that burdens donor countries prevents them from currently contemplating an increase of the ODA in nominal terms.

Globally, the ODA is far from meeting the recommendations of the Rio+20 Conference according to which developed countries should commit themselves to grant, by 2015, 0.7% of their GDP to the ODA.

### The ODA of local authorities

Local authorities also support the development of infrastructures and the reinforcement of skills in developing countries.

In 2010, 24 million euros were mobilized in France by local authorities, on nearly 400 water and sanitation projects, of which 19 million in the context of the Oudin-Santini Law (water and sanitation budget), and 5 million euros in the context of the 1992 Act (general budget) as follows:

- » Towns: €5 M
- » Departments: €12 M
- » Regions: €1.5 M
- » Water and sanitation Unions: €3.5 M
- » Water agencies: €12.2 M

In terms of quality, "the sector needs remain poorly supplied by the ODA", according to Philippe de Fontaine Vive, Vice President of the EIB, during the 6<sup>th</sup> World Water Forum. If we analyse the commitments to the water sector in SEMCs, we can see that they are mainly directed towards the financing of large water and sanitation systems at the expense of governance support and access to basic services for poorest people. As for Water Demand Management and Water Resources Integrated Management, they are not identified in the ODA.

<sup>56</sup> "Development Co-operation Report 2012: Lessons in linking sustainability and development" OECD, 2012

<sup>57</sup> The OECD database does not integrate exhaustive data regarding multilateral organisms funding, such as the EIB or the World Bank and does not include funding and donations from regional Arabic organisms and from the Islamic Development Bank.



Out of the 6,270 million USD granted by the ODA to the water sector in SEMCs in 2011, 3,538 million USD were dedicated to the financing of large water and sanitation systems, that is 56% of the ODA for this sector against only 11% for governance (training excluded) and strategy and 21% for the access to basic services for the most modest populations.

**Table 6. Use of the ODA's commitments in favour of SEMCs in the water and sanitation sector in 2011**

	LARGE SYSTEMS		SUPPLY OF BASIC SERVICES		MANAGEMENT POLICIES		OTHER (TRAINING INCLUDED)		TOTAL
	AMOUNTS (MILLION USD)	SHARE (%)	AMOUNTS (MILLION USD)	SHARE (%)	AMOUNTS (MILLION USD)	SHARE (%)	AMOUNTS (MILLION USD)	SHARE (%)	AMOUNTS (MILLION USD)
NORTH AFRICA	1,269	51.3	702	28.4	377	15.2	125	5	2,473
NEAR AND MIDDLE EAST	2,269	59.7	640	16.8	331	8.7	557	14.6	3,797
TOTAL	3,538	56.4	1,342	21.4	708	11.3	682	10.8	6,270

DATA SOURCE: "DEVELOPMENT AID AT A GLANCE, STATISTICS BY REGION", 2013 EDITION, OECD

Given the limited amounts given by the ODA, the "competition" it can generate with a policy of pricing incentives and the difficulty to meet populations' real needs, we must "question how to use the current ODA resources allocated to sustainable development [and in the present case to water and sanitation access] more efficiently and what other sources of funding the ODA could mobilize"<sup>58</sup>.

Given the previous analysis, it seems necessary that the ODA dedicated to the water and sanitation sector can be reoriented on three main aspects in the future:

- helping to overcome the financial deficit, especially by helping the poorest people with access to water and sanitation services, thanks to targeted help systems adapted to their needs (management focused on the results),
- having a leverage effect on private investments through the development and use of risk management mechanisms,
- Supporting financial planning processes, especially in terms of capacities, by favouring a better coordination and an "integrated approach" of projects.

This reorientation could improve the efficiency of the help to the water sector, in compliance with the Paris Declaration on Aid Effectiveness and with the Accra Agenda for Action, which favour the appropriation of development policies and underline the importance of mobilizing countries' internal resources for large works and infrastructures.



### Examples of technical assistance programs in the water and sanitation sectors: mechanisms of project planning

The African Development Bank manages the African Water Facility for the activities favouring investments in the water sector: administrative, legal and institutional reforms, development and implementation of a regulatory framework, strategic investments, efficient management of shared water resources and finally, follow-up and evaluation.

The program for water and sanitation in Africa, managed by the World Bank, aims at improving water and sanitation services by supporting sectorial reforms, by developing the capacities of decision-making centres at the national and regional levels, and by financing strategies to stimulate investments in the water and sanitation sector.

The Facility for Euro-Mediterranean Investment and Partnership (Femip) of the European Investment Bank offers technical assistance to improve operations quality and their consequences on development by reinforcing the capacities of Mediterranean partner countries and projects promoters and by financing beforehand studies and activities aiming at supporting the private sector, directly and indirectly. An ACP\*-EIB Module was thus created to finance technical assistance for activities of project planning.

\*SUB-SAHARAN AFRICA, CARIBBEAN, PACIFIC

### Partnership policy for the governance of the European Investment Bank

In 2012, the OECD and the EIB-Femip initiated discussions in order to cooperate to improve governance in the water sector management. A wide range of specialized tools supplied by the EIB and the OECD will allow to start a strategic dialogue per country. Tunisia and Jordan are working on a more efficient use of financial resources and an increase in private funding sources.

Besides, the EIB and the Islamic Development Bank signed in 2012 an agreement protocol on technical assistance in favour of the region's economic and social development. This collaboration will rely on the coordination platform of International Financial Institutions and on the Middle East and North Africa Transition Fund.



## Complementary resources to develop: innovative funding

Given the SEMCs' financial needs in the context of the Millennium Development Goals or global issues such as the fight against climate change, Innovative Financing Mechanisms (IFMs) became over the last decade an important issue in international negotiations on the environment and development.

The innovation of these mechanisms lies either in their technical conception, or in the application of an existing mechanism to a sector in which it was not used so far.

Developed during the Monterrey Consensus (2002) and approved during the United Nations Conference on Sustainable Development (Rio+20) in 2012, these mechanisms appeared as a complementary source of revenue and an alternative to the ODA, and could increase the States financial capacities in an approach of international cooperation for development.

*“Financial innovative mechanisms can help developing countries which decide to use them to mobilize extra resources for their development. These mechanisms should complete traditional funding modes but not replace them. Even though we recognize that considerable efforts were made in the field of innovative financial sources for development, we recommend that the initiatives already taken be transferred at a larger scale when possible.”*

EXTRACT FROM THE DECLARATION “THE FUTURE WE WANT” ADOPTED AT THE RIO+20 CONFERENCE IN 2012

According to the Pilot group on innovative funding for development, nearly twenty countries have already implemented one or several innovative funding, thus generating nearly 6 billion dollars extra revenue since 2006<sup>59</sup>.

The concept of innovative funding can vary depending on the players: UNDP, OECD, Bill Gates Foundation... The Commissioner-General for sustainable development of the French Ministry of Ecology, Sustainable Development and Energy classifies them into three categories in its synthesis report on innovative funding<sup>60</sup>:

- IFMs allowing to raise new public financial resources,
- Financial tools with a leverage effect,
- Mechanisms determining the grant of existing funding to the realization of secondary objectives.

<sup>59</sup> <http://leadinggroup.org>

<sup>60</sup> « Les mécanismes de financements innovants » [Innovative funding mechanisms], February 2013, Commissioner-General for sustainable development, Service of economy, evaluation and sustainable development integration, French Ministry of Ecology, Sustainable Development and Energy



## Characteristics and key principles of innovative funding

According to the Pilot group on innovative funding, three major characteristics define innovative funding:

- » Durability: these funding are more predictable than the ODA and are meant to last;
- » Complementarity regarding the ODA;
- » Their experience on activities which benefited from globalization and public investments, and which can have negative externalities.

The Landau report (2004) on new international financial contributions identifies five key principles to which the new contributions must aim at:

- » an unquestionable legitimacy of the objectives (chosen among those which gather unanimously the international community) for the principle of prior earmarking of a revenue is generally not recommended for a good management of public finances;
- » a maximum visibility of interventions to finance;
- » an economic efficiency of the mechanisms;
- » a strong equity;
- » a complete transparency in governance and management.

The financing of access to water and sanitation generated few dedicated innovative funding, which focused on health and climate change issues.

We will try to present some of them in this part, adapting them to the needs of SEMCs explained earlier.

Most of them belong to the category of IFMs used to raise new public financial resources and more precisely of the “international solidarity contributions” (P. Douste-Blazy). This category covers a group of relatively predictable and stable mechanisms allowing to raise financial resources complementary to the traditional ODA. These mechanisms can be controlled by regulations (micro taxes, green obligations...) or not (voluntary contributions).

### The airline tickets solidarity tax: a pioneer of Innovative Funding Mechanisms

The article 22 of the Amending Finance Law of 2005 (n°2005-1720 of 30/12/2005) implemented, from the 1 July 2006, an increase in the civil aviation tax levied for the benefit of the Solidarity Fund for Development. This fund, managed by the French Development Agency, aims at contributing to the financing of developing countries especially in the healthcare sector. This is why the increase is sometimes called “Airline tickets solidarity tax”. The tax pricing depends on the passenger’s final destination and of his transport conditions.

In virtue of the Decree n° 2011-1237 of 4 October 2011 modifying the Decree n° 2006-1139 of 12 September 2006 on the development solidarity fund, the Global Fund to fight AIDS, Tuberculosis and Malaria (UNITAID) is added to the list of institutions allowed to benefit from the revenue of this tax.

*A synthesis of the mechanisms explained in the following chapters is available in the appendix.*



## Innovative Financing Mechanisms used to raise new public resources

### Solidarity Micro Taxes

In the field of innovative financing mechanisms, a “solidarity micro tax” is a charge levied by a State or a group of States, the revenues of which allow financing the environment, the development or any other planetary issue.

In the water sector, several mechanisms of pollution fees to increase public finances and based on a principle of integration of negative externalities having benefited from the economic development of the Mediterranean region can be highlighted.

Beyond generating extra financial resources which can partly overcome the financial deficit of water and sanitation financing identified earlier, these “eco-taxes” can encourage polluters to take measures to reduce pollution sources.

An approach of cooperation and regional coordination to set the “environmental micro taxes” (P. Douste-Blazy) is particularly important to reduce the risk of relocation of targeted activities, which could be triggered by a heavy taxation for the concerned businesses.

The main elements to take into account to set an eco-tax<sup>61</sup> are:

- The definition of the tax base: it must tax as directly as possible the polluter or the act at the origin of the environmental prejudice;
- Definition of the tax rate : it must correspond to a value for the community of the damage caused by the pollution (impact on health, economic cost of depollution), without leading to the relocation of the targeted activities;
- Encouragement to reduce pollution by making sure to choose a tax base as large as possible, along with incentive mechanisms.

Since they are micro-taxes on activities having negative effects on the quantity and quality of water in the Mediterranean, we can imagine different types of plans some of which have already been contemplated in institutions such as the UN and the OECD.

61 “Taxation, Innovation and the Environment”, OECD, 2010





Table 7. Types of existing micro taxes and their effects

SECTOR	ACTIVITY	OBJECTIVE	
		GENERATE FINANCIAL RESOURCES	CHANGE BEHAVIOUR
Maritime navigation	Pleasure boats mooring	X	X
	Cruise passengers	X	
	Merchant shipping	X	
	Maritime navigation CO <sub>2</sub> emissions	X	
Tourism	Tourism infrastructures with high water intensity levels	X	X
Real Estate	Land use of coastal areas	X	X
Sanitation	Absence of purification plants	X	X

### Micro-taxes on maritime navigation in the Mediterranean

The Mediterranean Sea, which represents 0.7% of the world's ocean surface, gathers 1/3 of the world's maritime traffic. Maritime navigation is at the origin of a certain number of negative externalities for the Mediterranean: artificialisation of the coastline, degradation of the seabed, water pollution, etc.

Including these environmental negative externalities in the sector's "business model" could allow to collect financial resources to fight against the pollution caused by this sector and reinforce the region's water quality. These micro-taxes, which can be debited from several activities of the maritime sector, could also lead in the medium term to behaviour change from companies and their users towards more responsible attitudes.

#### MICRO-TAX ON PLEASURE BOATS MOORING IN SEMCS

According to the Plan Bleu report "Tourism and sustainable development in the Mediterranean" published in June 2012, 890 ports are scattered around the Mediterranean, among which 765 on the northern shore and 125 on the southern and eastern shores.

Given the increase in the number of pleasure boats registered in the North, there is a risk of mooring places shortage leading to a transfer of pleasure boats mooring towards the marinas of the southern shore.



Figure 10. Repartition of marinas in the Mediterranean



SOURCE: "CRUISES AND RECREATIONAL BOATING IN THE MEDITERRANEAN", MARCH 2011, PLAN BLEU

Out of the 5,400 operational mega-yachts in the world, about 4,100 are stationed in the Mediterranean most of the year and generate economic rewards of about 4 billion euros a year<sup>62</sup>. Super yacht Intelligence evaluates at 8 months out of 12 the presence of 50% of the world's fleet of mega yachts in the Mediterranean waters.

We can thus imagine the implementation of a micro-tax on the mooring fees of boats registered in the North of the Mediterranean which moor during the year or over long periods on the southern and eastern shores.

#### MICRO-TAX ON CRUISES IN THE MEDITERRANEAN

The Mediterranean is now the second world cruise market after the Caribbean. In 2011, the number of passengers boarding in a European port, or 5.6 million passengers of which 4.8 million Europeans, doubled compared with 2004<sup>63</sup>.

62 Alberto Cappato, Secretary General of the IIC (Istituto Internazionale delle Comunicazioni, Genova - Italy), "Cruises and Recreational Boating in the Mediterranean" March 2011, Plan Bleu

63 Idem supra



Figure 11. Repartition of main cruise ports in the Mediterranean



SOURCE: PLAN BLEU

■ Ports of call      ■ Start-of-the-line ports

According to the estimations of the Environmental Protection Agency (USA), the passengers on board of a middle size cruise boat (2,125 passengers) generate each day 40 litres of wastewater per passenger, 500 grams of rubbish and 300 litres of sanitary wastewater. 800 million litres of wastewater are thus rejected into the sea without treatment by cruise boats in the Mediterranean<sup>64</sup>.

A micro-tax could be applied to passengers on their cruise fees. The average length of a cruise being of seven days, the payment of a tax of two euros per day and per passenger could allow to collect 78.4 million euros a year, based on the number of cruise passengers in 2011.

#### MICRO-TAX ON MERCHANT SHIPPING

The Mediterranean gathers 30% of the world's maritime trade, which represents a container traffic of 49 494 713.5 TEU (20 feet Equivalent Units)<sup>65</sup>.

The Strait of Gibraltar is the busiest maritime seaway after the English Channel.

According to the Institute of Maritime Economics (ISEMAR), 90,000 ships go through the Strait of Gibraltar every year, 17,500 through the Suez Canal and 40,000 through the Bosphorus Strait<sup>66</sup>.

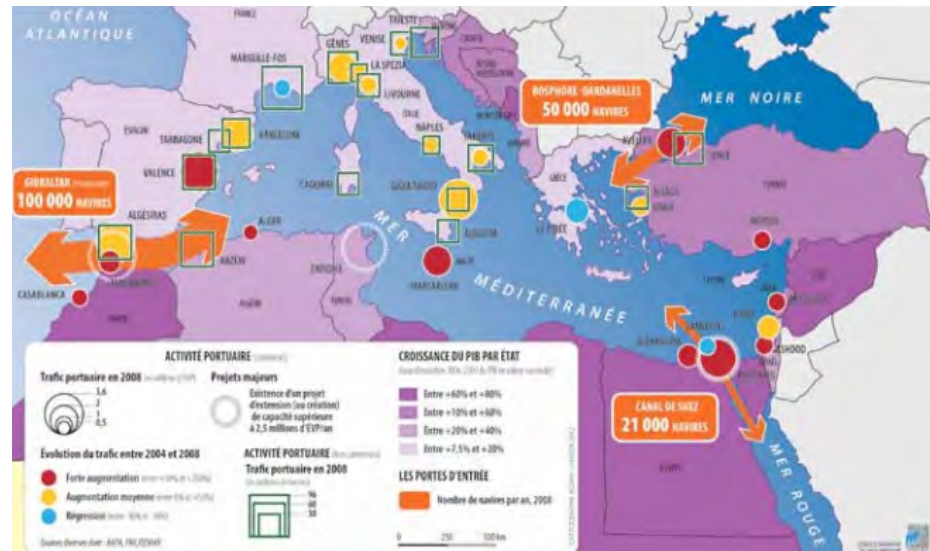
64 Alberto Cappato, Secretary General of the IIC (Istituto Internazionale delle Comunicazioni, Genova - Italy), "Cruises and Recreational Boating in the Mediterranean" March 2011, Plan Bleu

65 World Bank, 2011, data for North Africa and the Middle East (regardless of revenues)

66 Institute of Maritime Economics, March 2014, "La Méditerranée sous le regard de la conteneurisation" [Containerization in the Mediterranean], Executive summary n°163



Figure 12. Cartography of port activities in the Mediterranean



SOURCE: AGENCE D'URBANISME DE L'AGGLOMÉRATION MARSEILLAISE, OCTOBER 2013, SYNTHESIS "ATLAS OF PORT CITIES IN THE SOUTH AND EAST OF THE MEDITERRANEAN"

According to the ISEMAR, the Suez container traffic can be estimated at 398 million tons in 2012.

Based on this figure, if we calculate an average annual tonnage per ship of 22,742 tons of goods and if we decide to implement a 10 euro tax for each ton to all the ships circulating in the Mediterranean, or 255,000 ships<sup>67</sup>, more than 50 billion euros could be collected every year!

67 33,544,450,000 euros. The available data for this hypothesis can generate a double counting of passing boats in the different straits.



### International straits in international maritime law

The 1982 Montego Bay Conference defines and regulates the regime for transit passage by compromising between the “right of innocent passage” and the “freedom of navigation on the high seas”\*. It guarantees free access to the straits, while granting coastal straits guaranties in terms of security, national sovereignty and environment. Coastal straits must adopt the regime for “transit passage” and respect the ships’ freedom of navigation on international waterways. They cannot impose taxes to ships going through these straits or impede their circulation.

However, this decision establishing straits internationalization and depriving coastal States of part of their sovereignty is contested by several governments. The Straits of Malacca, located between the Malaysian peninsula and the Indonesian island of Sumatra, and linking the Andaman Sea, close to the Indian Ocean, to the South China Sea as well as the Straits of Singapore, trigger tensions linked to their maritime traffic management. A fair repartition of the costs linked to the maintenance and to the consequences of maritime traffic in these areas between coastal States\*\*. States and maritime companies using these straits for commercial purposes is an issue in several parts of the globe and is regularly mentioned by the Indonesian and Malaysian governments. During the Second international conference on the Malacca and Singapore Straits of 1999, Indonesian and Malaysian authorities regretted the “inconsistence of the straits’ users obligations”, while the obligation to maintain these infrastructures is only supported by coastal States with an economic situation inferior to that of user States. In 2007, the Chairman of the Nippon Foundation of Japan proposed a tax of 0.01 USD per ton deadweight for the ships going through the Malacca strait in order to collect 40 million USD. The International Maritime Organization finally implemented a tripartite cooperation structure: a fund for navigation aid, a special committee in charge of specific projects and a discussion forum. The USA and China agreed to bring their expertise for the former and funding for the latter.

\* Fau N., 2012, « Les détroits d’Asie du Sud-est depuis 1945 » [South-East Asian straits since 1945], Etudes de l’INSERM N°14, L’évolution du débat stratégique en Asie-du sud-est depuis 1945.

\*\* Arising from article 43 of the Montego Bay convention.

### MICRO-TAX ON MARITIME TRANSPORT CO2 EMISSIONS

According to the Surfrider Foundation, in 2007, maritime transport in the world produced more than 1 billion tons of CO<sub>2</sub>, that is to say 3.5% of the world’s CO<sub>2</sub> emissions. Since 30% of maritime trade takes place in the Mediterranean, CO<sub>2</sub> emissions of maritime transport in the Mediterranean can be estimated at more than 300 million tons of CO<sub>2</sub>.

The implementation of a carbon tax of maritime transport emissions, of 20 euros per ton of CO<sub>2</sub>, could allow to collect 6 billion euros a year.



### **Micro-tax on water-intensive tourist equipment**

Some leisure infrastructures such as golfs, water parks or swimming pools can consume a lot of water if they are not equipped with appropriate technical solutions. It is also the case for hotels: in SEMCs, a tourist consumes in average 600 litres of water a day in a middle-range hotel, which is the equivalent of 8.5 Moroccans' daily consumption. A certain number of international certifications ensure the environmental quality of tourist equipment in the Mediterranean: "Green Key" certification for tourist accommodation establishments, "Green Globe" certification for leisure tourism, etc.

We could thus imagine the implementation of a micro-tax on water-intensive tourist equipment. An incentive subvention for infrastructures wishing to adopt environmental certifications and to adopt technical solutions to reach the conformity level could be developed as well.

### **Micro-tax on the land use of coastal areas**

The land use of Mediterranean coasts for building and tourist infrastructures is the object of more and more norms. Nevertheless, it is increasing in the Mediterranean. According to an Ifri study, 42% of Mediterranean coasts are urbanized.

The revenues generated by the economic activities set up on these lands are not redistributed to the local authority that hosts them. The creation of an "environmental tax" on the commercial use of coastal lands could allow to redistribute part of the wealth generated by the natural resources of the territory and to benefit from funds to maintain and value this natural heritage, in a virtuous circle logic. We could thus imagine a tax by used m<sup>2</sup>, the amount of which could be set according to the wealth generated by the occupied land and/or the degradation of the site generated. This tax could be combined with different incentives on eco-friendly behaviours like tax exemption for activities with "Green Key" or "Blue Flag" certifications for example.

### **Micro-tax on the absence of sewage waters treatment plants in cities**

The quality of bathing waters in the Mediterranean is degraded by telluric pollution, at the origin of 80% of pollution sources in the Mediterranean. It is also degraded by the pollution from maritime navigation that we talked about earlier. The treatment of sewage waters of Mediterranean cities is thus necessary to preserve the quality of bathing waters in the Mediterranean.

The implementation of a tax for cities without a sewage water treatment plant coupled with financial incentives to build a last generation purification plant (access to specialized funds and State loans guarantees) followed by the promotion of the actions carried out ("Blue Flag" certification for port cities) could change the priorities of Mediterranean cities in this field.



### Incentives to the implementation of purification plants: the example of Turkey

Since 2000, in Turkey, local authorities can only apply for the “Blue Flag” if they have a sewage water treatment plant: 28 plants were thus built over this period in the context of the “Blue Flag” certification and the number of certified beaches increased from 78 beaches in 2000 to 383 in 2013.

Besides, plants are financed with an agreement between cities and the Ministry of the Environment in which 30% of the global cost is paid by the city and 70% by the Turkish Ministry of the Environment and Urbanism.

This action is reinforced by a transversal governance gathering all the stakeholders of label project in a council in each city, gathering the foundation in charge of the label in Turkey, The Ministry of the Environment, the Ministry of Healthcare, the Ministry of Tourism and the prefecture.

## Solidarity contributions

### The Oudin-Santini Law measures

Since a 1992 act on decentralization, French local authorities have the possibility to finance international solidarity actions on their general budget through conventions with their counterparts in developing countries. In 2005, France supplemented this measure with a specific tool for actions carried out in the sector of water and sanitation. The law of 9 February 2005 called “Oudin-Santini Law”, allows local governments and French water agencies to grant up to 1% of their subsidiary budgets to international cooperation actions<sup>68</sup>.

The implementation of the Oudin-Santini Law allowed the direct mobilization of 22 million euros in 2012 or 80% of the funds mobilized by France in the water and sanitation sector, in the field of decentralized localization<sup>69</sup>. According to the French Development Agency and the programme Ps-Eau, a generalized application of this law could mobilize 67 million euros in France. This solidarity contribution represents a negligible cost for users. The study “Decentralised Cooperation in the Water and Sanitation Sector” thus reveals that the annual contribution per inhabitant in the Seine-Normandy Basin, which is the highest in France, is of 0.46 euro in average over the 2007-2009 period. Over the same period, it is annually of 0.25 euro for mainland France.

The Senate report of 13 November 2012 on decentralized cooperation<sup>70</sup> suggests the creation of a national fund putting in common a percentage of the resources mobilized by water and sanitation public services as well as by water agencies. This fund would have a double advantage. It would allow southern communities to use this fund in order to finance projects for which they cannot find French partner communities, especially for network

68 As well as electricity and gas ones

69 « La coopération décentralisée dans le secteur eau et assainissement, Bilan 2012 » [Decentralized cooperation in the water and sanitation sector, report 2012], FDA and PS-Eau, June 2013

70 Information report realized on behalf of the delegation to local authorities and decentralization on decentralized cooperation, by Mr Jean-Claude PEYRONNET, registered on the Senate on 13 November 2012



extensions. It would also allow the poorest communities to take part in more important financial projects by aggregation of small projects.

A project to extend this measure at the European level is currently being developed<sup>71</sup>. It could allow to mobilize 120 million euros a year<sup>72</sup> according to the programme PS-Eau. Many European countries initiated similar approaches in Europe: the Netherlands, Switzerland, Great Britain, even though they do not rely on the same institutional, legal and financial forms. The Global Water Solidarity platform initiated an international Chart to promote the mechanisms of decentralized solidarity, supported by the UNDP.

In its resolution 2012/2552(RSP) relative to the sixth World Water Forum of March 2012, the European Parliament thus “*reiterates its call on the Commission and the Council to encourage EU local authorities to devote a proportion of the levies collected from users for the supply of water and sanitation services to decentralised cooperation measures; draws attention to the principle of ‘1% solidarity for water’ adopted by some Member States as a possible example to promote*”. The European Parliament is preparing a White Paper on this topic which should be presented in the summer 2014. The definition of a legal common framework at the European scale would allow to better coordinate international solidarity actions in this field and give more visibility to the projects supported. A “Memorandum of Understanding” could be signed between the European Commission, the Union for the Mediterranean and Mediterranean local authority networks such as Avitem or the Mediterranean platform United Cities and Local Governments to the make development of this measure easier for SEMCs.

### Other forms of solidarity contributions

A “Blue Print” fund supplied with the solidarity contributions of companies exploiting and marketing natural mineral water sources in the Mediterranean could be created following the example of the “Product Red” label, developed in the healthcare sector. This fund could also be supplied with the implementation of a deposit for plastic bottles in SEMCs. A third source of financial resources could be a tax on the production of non-biodegradable plastic bags in SEMCs.

### The “Product Red” initiative in the healthcare sector

This initiative was created by the group U2 and the DATA (Debt, AIDS, Trade, Africa) to collect money for UNITAID. “Product Red” is a brand licensed to partner companies. Each partner company creating a product with the “Product Red” logo commits itself to donate a percentage of its own profits on the product to UNITAID. The initiative has generated a total amount of 190 million dollars since 2006.

<sup>71</sup> According to the report of the Commissioner-General for Sustainable Development, the UNDP and the United Nations Habitat programme are also contemplating the implementation of a similar mechanism at a global scale

<sup>72</sup> See table in appendix





Another form of solidarity contribution studied is the implementation of private individuals' micro-donations on their bank transfers. According to the French Ministry of Foreign Affairs, if 300,000 people subscribed to this programme, the amount donated would reach 36 million euros a year.

## Financial tools with a leverage effect

### Green bonds

Green bonds are bonds aiming at financing investments in infrastructures resilient to climate change or projects aiming at preserving biodiversity. They are used to finance important investments so as to get a medium or long-term profitability. By issuing a green bond, States or international institutions provide information to investors on the use that will be made of the funds. The innovative character of green bonds lies in the allocation of the bond yields to eco-friendly investments. They can serve to focus the investment of the diaspora willing to contribute to the sustainable development of their country of origin, through a profitable banking system.

A partnership between various financial institutions such as the African Development Bank (ADB) and the Islamic Development Bank could be contemplated to launch green bonds aiming at financing large infrastructures of access to water and sanitation in SEMCs.

### The African Development Bank issues its first green bonds

On 10 October 2013, the ADB issued its first green bonds of 500 million US dollars. The product of the green bonds supports the financing of projects with a low carbon footprint and adapted to climate change, in compliance with the ADB's long-term strategy. The projects to be financed particularly concern the production of renewable energies and energy efficiency.

Investors who favour socially responsible investments greatly supported this operation and acquired 84% of the bonds. The proportion by investor type was as follows: 43% for asset managers, 28% for central banks and official institutions, 28% for insurance companies and pension funds and 1% for private and retail banks. 52% of the bonds were placed on American accounts, against 39% for Europe, the Middle East and Africa and 9% for Asia.



### **Broadening the range of potential money-lenders via micro-finance**

Micro-finance seems to be an efficient tool to finance access to basic water and sanitation services for fragile populations, especially in poor urban areas, in rural areas or for community projects. Up to now, the use of micro-finance in this sector has been limited. Donors and International Financial Institutions should make an effort to raise awareness through their activities of capacities reinforcement or by associating micro-finance to other financial tools for the projects they support.

Three types of micro-finance products could be developed in the water sector: loans to private individuals to make access to water and sanitation easier, loans to SMBs for small investments regarding water supply and loans to improve urban services and shared infrastructures in cities and agglomerations' poorest districts. In 2008, the Bill Gates Foundation evaluated the potential market of microfinance in the water and sanitation sector in 38 African and Asian countries at 12 billion dollars and 125 million borrowers by 2020.

### **The development of thematic SRIs**

The main characteristic of SEMCs is the near-monopoly position of commercial banks on voluntary saving defined as “saving that is either collected by banks or invested in the stock market or the saving that is invested in life insurance premiums”<sup>73</sup>. The financial tools offered for the investment of these savings are quite limited in SEMCs. The approach of thematic funds or SRIs (Socially Responsible Investments) or environmental participative funds (crowd funding) almost does not exist.

Pension funds and management companies active in the region could develop SRI devices with a thematic approach in the water sector and invested in stocks of companies active in the Mediterranean region. Such investments could be quite attractive for the part of the diaspora looking for linking support to local businesses to the protection of natural resources in the region. The development of this funding could improve the social acceptability of infrastructure projects in the water sector and accelerate investment operations.

### **Citizen funding of green infrastructures: a tool to develop?**

The French Inter-ministerial Delegation for the Mediterranean launched a programme of definition of the reference terms of a “crowd funding” platform in green infrastructures. It should especially meet the financial needs for medium-size projects, between the maximum of the loans granted by the IFMs and the maximum of bank loans (between 2,000 and 100,000 euros). The private experience carried out by the investment fund “Energie partagée” [Shared energy] in 2010 to gather private individuals ready to invest in the energy transition grouped together 3,000 people for a 6.2 million euro capital.

<sup>73</sup> Georges Corm, “Cooperation and financing for sustainable development in the Mediterranean region”, June 2005, Plan Bleu



### Thematic SRIs on the water sector

Thematic funds dedicated to water are quite recent, even in Europe. Pictet launched the first “water” fund in 2000. Among existing funds, we can mention KBC Eco fund water, Sarasin sustainable water fund, Amundi Funds Aqua Global, Palatine or Bleu and Sam sustainable water fund.

The fund BNP Paribas LI Equity World Aqua combines the normative exclusion approach (companies non-compliant with Global Compact) and the thematic approach (environmental funds). It is invested in international companies bonds which realize at least 20% of their turnover in an activity linked to water management: water treatment, saving and recycling technologies; installation, maintenance and renovation of water supply networks and sewage water sanitation. The companies are also assessed from an ESG (Environment, Social and Governance) point of view.

### Implementation of a tradable permit system in the water sector

The carbon market is the most famous example of emission trading system. The European system fixed for each State a CO<sub>2</sub> emissions quota which itself has an impact on national activity sectors and economic players according to their impact in terms of CO<sub>2</sub> emissions.

Various experiences were carried out at a local scale on this principle in the water and sanitation sector. Negotiable rights aiming at reducing the flows of nutrients were implemented in the case of the Taupo in New Zealand for example. Israel, without going as far as a market logic, implemented a system of drinking water quotas for irrigation, which can be exchanged by the farmers against treated effluent water or brackish water with an extra 20% water volume.

Given the existing or upcoming water stress situation in most of the region, a system of limit and quota exchange of drinking water, especially from renewable sources, could be implemented. The pricing of water for agriculture is a measure that should be contemplated to limit intensive use of water.

Such an approach could only be implemented in the medium term and would require the definition of consumption limits taking into account the socio-economic needs and structures of each country, the determination of the market players (States, management services, local authorities, economic players, households) and their importance in the use of resources, the definition of mechanisms for the allocation of quotas and exchanges between players. The revenues collected could allow to finance the extension and maintenance of water and sanitation infrastructures in the region, as well as actions of institutional support and capacity reinforcement on these issues.



### **Mechanisms determining funding provision: the OBA**

The output-based aid (OBA) is a mechanism linking part of the public funding to the obtaining of effective measurable results supplied by service providers. The OBA's objective is to supplement the main source of revenues of service providers, the pricing, without replacing it. In the water sector, it can be used in four different ways: improving access for target groups via consumption subventions, extending water and sanitation networks via connection subventions, making pricing easier by covering the costs and developing sewage water treatment.

Dedicated to large-scale programmes given its high level of governance and the transaction costs it arises, this aid can be a good management tool for large sanitation projects by using the leverage effect of private sector funds that usually pre-finance a large part of the costs. It was used in India in particular in the context of the National sanitation campaign.

### **Pool funding: a good example of mechanism with a leverage effect**

Contrary to the OBA, the creation of pool funding is directed to small borrowers, often small operators of the water and sanitation sector. This kind of funding is ideal for the decentralized water sector. The grouping allows easier access to repayable funding thanks to a scale effect, with the combined use of guarantees to improve the credit. To this day, they have mainly been used as a basis for issuing bonds in countries with relatively mature financial markets. The EIB used this kind of approach in Turkey.



## CONCLUSION

### The necessity of a better water governance in the Mediterranean

There are innovative funding, that can partly cover the financing gap in the sanitation sector or make access to water and sanitation easier for unprivileged populations. Some obstacles to their development must be overcome: high transaction costs of some mechanisms, administrative and legal obstacles, articulation with other mechanisms, fragmentation and complexity of the financing offer etc. The implementation of coordination mechanisms, the development of normative convergence between SEMCs and a transversal approach of these issues should solve the problem.

As the United Nations underlined in 2012, “the achievement [of innovative funding potential] implies new types of international agreements and a change in global governance”. Thus, the main challenge for innovative funding to succeed in the water and sanitation sector lies in the equity between the different sectors concerned and a balance between local, national and regional needs. This objective requires to create a partnership between the two shores to optimize financial flows and make sure they are directed to the right target, so that they contribute to a sufficient access to quality water resources for all, while creating a virtuous economic circle in terms of employment and social development. Therefore, this objective requires in the first place a real political will, which will have to be approved by a dedicated agreement. The definition of the Water Strategy for the Western Mediterranean, currently carried out in the context of the dialogue of the 5+5 by Spain and Algeria, could be the basis of such a partnership.

A concerted management of innovative funding must then be defined on the basis of this political will, in the respect of Mediterranean common interests, but taking into account the specific needs of each sub-region and country. In the 2003 report “Financing water for all”, Michel Camdessus insisted on the necessity of a “radical shift in the financial architecture” and on the implementation of a “control tower, the mission of which would be to give information to a group of independent observers and ensure a quick and appropriate decision making.” This management organization could be hosted by a Mediterranean water agency, in which countries would be represented in a logic of North-South equity. The creation of such a structure will require the collection and verification of the information given not only in terms of water management and funding but also in terms of normative convergence and partnerships between the concerned players (States, local authorities and civil society). This structure will have to define the innovative funding on which it will base its activities.



Today, the Global Fund to fight AIDS, Tuberculosis and Malaria (UNITAID) is the only fund for which the major part of resources come from an innovative source, in this case the airline tickets solidarity tax. Indeed, the United Nations are strongly committed to promote innovative funding and have a special Councilor on innovative funding for the Secretary General as well as an “innovative funding for development” pilot group.

In this context, could not we contemplate to promote to the United Nations the notion of preservation of “Mediterranean common goods” and the implementation of a “Mediterranean fund for sustainable development”? This fund would be supplied partly by the innovative funding identified earlier and coastal states would have the responsibility to supply this fund according to their financial means and wealth, as Georges Corm already suggested in 2005<sup>74</sup>. This integrated approach would prevent a fragmentation of the help structure by “gathering development funding mechanisms in less numerous institutions with larger mandates but clearly defined, coordinated to one another and putting in common the resources of various origins (traditional and innovative ones)<sup>75</sup>.

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74 Georges Corm, “Cooperation and financing for sustainable development in the Mediterranean region”, June 2005, Plan Bleu,  
75 “World Economic and Social Survey 2012 – In Search of New Development Finance”, 2012, United Nations



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## APPENDIX 1. SYNTHESIS OF PROPOSED INNOVATIVE FUNDING

INNOVATIVE FUNDING	OBJECTIVES		COMBINATION WITH OTHER MEASURES	EFFECTS		FINANCIAL MOBILISATION CAPACITY: ESTIMATION IN MILLION EUR	APPLICABILITY	LIMITS
	RAISING NEW PUBLIC RESOURCES	LEVERAGE EFFECT		MOBILISATION OF FINANCIAL RESOURCES	BEHAVIOUR CHANGE			
<b>FUNDING</b>								
<b>MICRO-TAXES</b>								
MARITIME NAVIGATION	X			X	X	TAX ON CRUISE PASSENGERS: 78.4 TAX ON TRADE SHIPPING: 52,000 TAX ON CO <sub>2</sub> EMISSIONS: 6,000	Adapted to ensure stable and appropriate revenues to the water sector and guide these sectors towards eco-friendly behaviours	Can cause adverse effects (decentralisation, decrease in competitiveness) if the tax does not fit into the national productive fabric and is not the object of a regional approach
TOURISM INFRASTRUCTURES WITH HIGH WATER INTENSITY LEVELS	X		INCENTIVE SUBVENTION	X	X	-		
LAND USE OF COASTAL AREAS	X		INCENTIVE SUBVENTION	X	X	-		
SANITATION OF COASTAL CITIES	X		INCENTIVE SUBVENTION	X	X	-		
<b>VOLUNTARY CONTRIBUTIONS</b>								
LOUDIN-SANTINI ACT	X	X		X		120	Adapted to countries having a well-defined water pricing structure and a public water governance	The cooperation arbitration is carried out on a local basis (from a community to another one) rather than in a general regional dynamic
"BLUE PRINT" FUNDS	X			X		-	Adapted to raise awareness in consumers	Limited capacity of financial mobilisation
MICRO-DONATIONS	X			X		36	Adapted to countries where the banking system and ICT are accessible to all	Limited capacity of financial mobilisation and necessity of social acceptability by sometimes "fragile" populations
GREEN BONDS		X		X		-	Adapted to diaspora populations	Relatively small public, necessity of a mature and stable financial system
MICROFINANCE		X		X		-	Adapted to small investments in contexts characterized by a mediocre or under-developed commercial banking system	Lack of visibility of microfinance funds with traditional investors
SOCIALLY RESPONSIBLE INVESTMENTS		X		X	X	-	Adapted to diaspora populations	Requires a financial and entrepreneurial system sufficiently mature to integrate ESG issues
CITIZEN FUNDING		X		X		-	Adapted to small and medium scale projects	Requires quality governance and a mature civil society
TRADABLE PERMITS SYSTEMS		X		X	X	-	Adapted to economies mature enough in terms of governance (political will, institutional capacities, association to complementary measures of support to fragile populations...)	Requires the suppression of distortions from subsidies on targeted consumer goods Can impose a too heavy burden on some sectors if temporary support measures are not implemented
<b>TOOLS</b>								
OUTPUT-BASED AID		X		X			Adapted to countries where entrepreneurs are capable and willing to take the risk of pre-financing	Does not suppress the necessity of a pre-financing for small water service providers High transaction costs requiring the implementation of specialised institutions
POOL FUNDING		X		X			Adapted to the financing of decentralised service providers operating at a small scale	Applicable in countries with mature financial markets Requires a legislation update



## APPENDIX 2. EXAMPLES OF INNOVATIVE FUNDING DEVELOPED IN EUROPE AND IN THE WORLD

### Decentralised cooperation in the water sector in Europe

#### ITALY

##### THE WATER RIGHT FOUNDATION

Since 2002, Publiacqua S.p.A, the company in charge of the integrated management of water services in the Val d'Arno drainage basin, in Tuscany, has been carrying out cooperation projects in the water sector. By taking one euro cent per cubic meter consumed by users, a fund called "L'Acqua è di tutti" (water belongs to everyone) was created to finance interventions in countries where access to water and water management are insufficient.

In 2005, with the support of local authorities and in cooperation with the civil society and the scientific and university communities, the society created an association to manage this fund: the Water Right Foundation. The Water Right Foundation supports cooperation projects, activities of information and awareness on the right to water and the sustainable management of water resources, activities of environmental education in schools, research projects with the University of Florence and training workshops on the maintenance of infrastructures realised thanks to these projects.

The Water Right Foundation can take part in two ways:

- As a sponsor only: by attributing subventions to projects submitted by third parties (associations, NGOs) to the Fund "L'Acqua è di tutti"
- As a project operator: with an active participation on complex projects requiring a specialised expertise both on the management of the project cycle and on technical questions.

These projects are developed with the implications of Publiacqua collaborators. To this day, the Fund contributed to €2,450,000 by co-financing projects for a total amount of more than €4,500,000. About one million people benefited, directly or indirectly, from projects co-financed by the Fund "L'Acqua è di tutti".

##### OTHER INITIATIVES IN ITALY

- Acqua bene comune (2004): this Fund was also constituted by taking one euro cent per cubic meter of water consumed by the 630,000 inhabitants of the Venice and Treviso provinces, to finance projects of access to water in Africa and South America.
- Solidarietà a Torino (2004): the Province of Torino grants a thousandth euro per water cubic meter charged to specific projects of international cooperation aiming at implementing sustainable models of water resources management.



## SWITZERLAND

### SOLIDARIT'EAU SUISSE

Solidarit'eau suisse is an initiative and a platform designed by Swiss local authorities and water supply companies aiming at building a sustainable cooperation in the sector of drinking water and basic sanitation with developing countries' local authorities. In order to finance the appropriate infrastructures and the development of technical organization capacities, Solidarit'eau suisse must mobilize complementary funding for the water sector through a voluntary debit by the Swiss local authorities.

Solidarit'eau suisse was created in 2007 by the Swiss Agency for Development and Cooperation (SDC) in partnership with NGOs, the Group Aguasan (water and sanitation expert group in developing countries), water supply companies and local authorities.

Solidarit'eau suisse is an online platform linking Swiss NGOs and their partners, and local authorities and water companies wishing to take part in solidarity actions. Water and sanitation projects that will be implemented in developing countries will be submitted by various Swiss NGOs to the Solidarit'eau suisse Secretary.

All project propositions are assessed by an independent expert from the Group Aguasan (a Swiss interdisciplinary group gathering a wide range of specialists of the sector particularly interested in developing countries). The selected projects are then presented on the Solidarit'eau Suisse online platform. Local authorities and water supply businesses examine the propositions and choose the project that is better suited to the town's interests. Then, NGOs and local authorities negotiate the financial contributions that the local authority will grant to the project. NGOs report the state of work and the impact of the project directly to the local authority that finances them.

Beyond the possibility to choose a project to support, Solidarit'eau suisse offers support to establish more direct relations with developing countries local authorities by constructing public-public partnerships, to financially help the community and to reinforce its capacities in the water sector. Towns of the southern shore can thus share the know-how of their northern counterparts – which is particularly important in the decentralization context.

Solidarit'eau suisse is managed by a secretarial office hosting the Internet platform, makes contact between towns and NGOs easier and communicates on this initiative in order to mobilize and convince more local authorities and water companies to take part in it.

At the end of 2011, more than 80 local authorities contributed to water projects in developing countries thanks to Solidarit'eau suisse and more than 50 local authorities and water companies received the "Solidarit'eau suisse" certification. About 650,000 CHF are mobilized each year for the various projects implemented by more than 20 Swiss NGOs. A great part of this amount comes from local authorities and water supply companies committed over several years.



Those who invest 1 cent CHF (€0.85) for each 1,000 litres of water consumed/year get the certification “Communauté Solidarité eau suisse”. The certification “Solidarité eau suisse” turns out to be an important motivation factor to stimulate local authorities as well as a good communication tool.

## BELGIUM

### IN WALLONIA

In May 2008, the Walloon government voted for the creation of an international solidarity fund for water. A first attempt to create this fund, based on a debit on the water price, was blocked after a negative opinion of the Council of State. The second attempt led to the creation of a fund supplied by the region's contributions, by water supply companies, by sanitation inter-municipal authorities as well as by donations and legacies. This fund encourages actions of decentralised cooperation focused on access to water and sanitation thanks to municipal partnerships. It became operational at the end of 2010 with funds provided only by the Walloon government. A first call for proposals granted subventions to 6 projects launched in 2011.

In March 2008, the local government of the Brussels area offered to supply and international solidarity fund based on a debit on water consumption, with a variable rate according to the amount consumed. The proposition was blocked by the Council of State that forbade to link international solidarity to a potential increase in water pricing for consumers.

### IN FLANDERS

The Flemish Partnership Water for Development (VPWvO), is a platform created for the 2004 World Water Day. It gathers the Flemish Ministry of the Environment, private and public water players, the university community, along with higher-education schools and NGOs wishing to contribute to the realisation of OMD 7. Flanders gathers six million inhabitants: the objective of this initiative is to give access to drinking water, by 2015, to the same number of people in developing countries. On this basis, the platform makes partnerships easier to have access to co-funding and/or exchange know-how more easily. The Ministry of the Environment grants a budget to the VPWvO, the amount of which is fixed every year, at the Ministry's discretion.

The financed projects are chosen by call for bids and must be proposed to at least two partners and contain the principle of public water management. The proposals are examined by an independent jury. Subventions are granted to approved projects. Water players, inter-municipal structures and private water supply companies complete the funding with voluntary contributions, either financial or in nature, under the form of know-how or expertise contributions. Water users are not directly mobilized but public municipal partners communicate on their actions with their clients and the players on a regular basis.

Between 2005 and 2011, the Flemish Partnership Water for Development carried out 45 quality projects. At the end of 2010, thanks to these projects, about 662,000 people had access to drinking water and 458,000 to a sanitation system. The objective remains to raise more funds to reach 6 million people supplied with water in 2015.



## SPAIN

### ALIANZA POR EL AGUA

Alianza por el Agua was created in Spain at the end of 2006 in order to bring together the different players of the water sector: public central administration, local authorities, companies operating water networks, social organisations and South American and Spanish research and opinion centres. It aims at promoting access to water and sanitation in Central America and improve the management and quality of its services.

The Ecology and Development Foundation, ECODES, spurred the initiative to create the Alliance, with the support of the Spanish Ministry of the Environment, the Spanish Agency for International Cooperation and Development (AECID), the United Nations Office for the Millennium Development Goals and the company Expo Zaragoza 2008.

The Alliance is financed at 70% by public subventions and at 30% by its members' subscriptions. The Alliance currently counts more than 330 member associations, to which add collaborating entities. Furthermore, the Alliance has signed collaboration agreements with major sector stakeholders in both Spain (Spanish association of water distribution companies, the national association of public water utilities etc.) and internationally (for instance with the Water Assessment and Advisory Global Network (WASA-GN) and the Swiss Agency for Development and Cooperation).

In 2011, the Foundation benefited from a budget of 300,000 euros.

The thematic subjects around which the interventions are structured are governance, an integrated management of water resources, the efficient use of water and appropriate technologies.

### L'AMVISA (VITORIA MUNICIPAL WATER COMPANY)

The AMVISA is a public local company aiming to supply services of drinking water collection, treatment and distribution, as well as sewage water treatment. It collaborates with the service of cooperation development of the town Vitoria-Gasteiz.

In 1988, Vitoria Gasteiz was one of the first Spanish towns to grant part of its budget to cooperation. In 1991, mainly thanks to the Town Council political will, AMVISA decided to grant 0.7% of its budget to cooperation projects.

At first, AMVISA's cooperation mainly limited itself to financial contributions. Later, collaborators started to commit themselves more and more during the different development steps of the presented projects, both to their company and to the town.

In 2011, AMVISA granted 250,000 euros to cooperation actions.



## THE NETHERLANDS

### THE JANUARY 2009 MOTION OF THE GENERAL WATER ACT

A motion inserted in the General Water Act in January 2009 allowed water supply companies to grant up to 1% of their turnover to international cooperation actions to improve access to water and sanitation for the most unprivileged people.

This contribution can be made via financial resources or via technical assistance. The text specifies that this contribution shall under no circumstances lead to an increase in water prices in the Netherlands.

In 2011, Dutch water companies granted about 0.5% of their turnovers to solidarity actions. An increase in their contributions can be observed each year, converging towards the maximum of 1%.

The larger part of the funds is used through Water Operator Partnerships (WOP). In 2011, 27 WOP were established in more than 12 countries by 9 of the 10 Dutch water companies.

World Water Net works in WOPs in South Africa, Morocco and Egypt.

The two largest water supply companies in the Netherlands, Vitens-Evides, created together in 2006 Vitens-Evides International (VEI). The main activity of VEI is to develop partnerships with water suppliers in developing countries, to help them improve their services and become more autonomous and financially viable, in order to ensure a sustainable service to populations. Vitens and Evides each contribute to VEI up to €1.5 million a year, which corresponds to 0.4% of their turnovers.

In order to supplement these funds, the foundation Water for Life (created by Vitens and Evides since 2009) carries out actions to raise awareness and collect funds with clients, private individuals and companies. Leaflets soliciting their contributions, on a voluntary basis, are sent to the clients along with their water bills. Communication towards clients is essential to ensure a good comprehension of the objectives.

There are two ways for donors to participate: a one-time donation, or a fixed amount per day of 5, 10 or 15 euro cents, which represents a contribution of €18.36 to €54 per year. In 2011, the amount thus mobilized reached nearly €750,000. Since 2007, the amounts mobilized were doubled each year by the NGO Aqua for All.

Currently, 25,000 households, or about 100,000 people, private individuals and companies clients of Vitens-Evides thus take part in their actions and their number keeps increasing year after year.



## The Airline tickets solidarity tax

### LEGAL FOUNDATIONS

The article 22 of the Amending Finance Law for 2005 (n°2005-1720 of the 30/12/2005) implemented, from 1 of July 2006, an increase in the civil aviation tax in favour of the Solidarity Fund for Development.

This fund, managed by the French Development Agency, aims to contribute to the funding of developing countries, especially in the healthcare field. For these reasons, the increase is sometimes called “Airline Tickets Solidarity Tax”. This measure supplemented the article 302 bis K of the General Tax Code with the creation of a paragraph VI.

The solidarity tax is codified in paragraph VI of article 302 bis K of the General Tax Code.

### APPLICATION FIELD, BASIS AND REQUIREMENTS OF THE SOLIDARITY TAX

The increase is perceived according to the passenger’s final destination. It is not perceived when the passenger is in transit.

A passenger is considered in transit in a given airport if he gathers the three following conditions:

- the arrival takes place by air in the considered airport or in an airport of the same airport system;
- the maximum delay between the planned arrival and departure hours does not exceed twenty four hours;
- the final destination airport is different from the initial departure airport and does not belong to the same airport system.

### TAX PRICING

The tax pricing depends on two elements:

- **the passenger’s final destination**

The final destination is the first landing point where the passenger is not in transit.

The tax pricing varies according to the passenger’s final destination, depending on the two groups mentioned below:

In France, in another State of the European Community (EC), in another State party to the Agreement on the European Economic Area (EEA) or in Switzerland:

- Mainland France and French overseas departments and territories;
- Other EC States: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Ireland, Italia, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom;



- Other States party to the agreement on the EEA: Iceland, Liechtenstein, Norway;
- Switzerland.

Other States: this group includes all the States not mentioned here above.

- **the passenger's transport conditions**

The price varies depending on whether the passenger can benefit or not from on-board services with no extra charge that other passengers could not access for free.

The price increases when the passenger can access on board services with no extra charge: "first class", "business class", etc.

PASSENGER'S FINAL DESTINATION	PASSENGER'S CONDITIONS OF TRANSPORT	APPLICABLE PRICE	
MAINLAND FRANCE, FRENCH OVERSEAS DEPARTMENTS AND TERRITORIES, OTHER MEMBER STATE OF THE ECONOMIC COMMUNITY, OTHER STATE PARTY TO THE AGREEMENT ON THE EUROPEAN ECONOMIC AREA, SWITZERLAND	"FIRST" OR "BUSINESS" CLASS OR EQUIVALENT DENOMINATION	INCREASED	€11.27
	OTHER CLASSES	NORMAL	€1.13
OTHER DESTINATIONS	"FIRST" OR "BUSINESS" CLASS OR EQUIVALENT DENOMINATION	INCREASED	€45.07
	OTHER CLASSES	NORMAL	€4.51

#### DECLARATION AND PAYMENT

- An online form indicates the total number of passengers on board sorted by final destination and by transport class
- The French Civil Aviation Authority created a unique tax bureau in Aix-en-Provence gathering in a single place the management and collection of the 4 aeronautical taxes, among which the solidarity tax

#### DISTRIBUTION OF THE TAX YIELDS

By virtue of the Decree n° 2011-1237 of 4 October 2011 amending the decree n° 2006-1139 of 12 September 2006 on the Solidarity Fund for Development, the present decree adds the Global Fund to fight AIDS, Tuberculosis and Malaria to the list of institutions allowed to benefit from the yields of this tax.

Besides, it suppresses the explicit mention of the percentage granted to each beneficiary, thus guaranteeing a better flexibility in the allocation of the tax yields, while respecting the initial objective to finance in priority access to medicines and health products for the developing world.





*“Article 1. – The yields obtained from the increase in the civil aviation tax fixed by the aforementioned decree of 6 June 2006 allocated to the solidarity fund for development are used to pay back the first loan issue of the International Finance Facility for Immunisation (IFFIm), to finance the Global Fund to fight AIDS, Tuberculosis and Malaria and to make access to medicines easier (UnitAid). The recognized balance on 31 December of a given year is reported to the next fiscal year.”*

A convention between the State and the French Development Agency specifies the modalities of management and follow-up of the solidarity fund for development. This convention is signed, on behalf of the State, by a representative of the French Minister of the Economy, Finance and Industry and a representative of the French Minister for Foreign Affairs.

This steering committee is co-chaired by a representative of the French Minister of the Economy and Finance and by a representative of the French Minister for Cooperation and Development. It is also composed of three members, respectively appointed by:

- The Minister for Foreign Affairs;
- The Minister in charge of Public Health;
- The Minister in charge of the Budget.

The Chief Executive of the French Development Agency or one of his representatives takes part in this committee, without voting rights.

The committee meets as often as necessary and at least once a year upon being convened by its chairpersons.



B U I L D I N G   T H E   M E D I T E R R A N E A N



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