Local Water Supply, Sanitation and Sewage in the Mediterranean Partner Countries

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General Context

- Population growth
- Improving living standards
- Drought, over-abstraction, water pollution
- Industrialization

By 2025 more than 3 billion people in the world will face water scarcity

Millennium Development Goals - secure access to improved water supply and sanitation

EU Water Framework Directive (WFD) 2000/60

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Water scarcity in the Mediterranean region

- A country can be considered "water stressed" when its total renewable freshwater resources lie between 1,000 and 1,700 cubic meters per person per year.
- A country can be considered "Water-scarce" when it have an average of less than 1,000 cubic meters of renewable fresh water per person per year.
- Twelve of the world's 15 water-scarce countries are in the Middle East and North Africa region (MENA). [1]

[1] Source: Peter Gleick, *The World's Water 2000-2001, The Biennial Report on Freshwater Resources*)

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Millennium Development Goals

- *"The MDGs critically highlight the link among improved water supply, safe sanitation, better hygiene, and poverty reduction. With the strong political process backing the initiative, the MDGs represent a once-in-a-generation opportunity to make significant progress in the sector."* [1]

- **Goal 7. Ensure environmental sustainability.**

Target 10. Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

Indicator: proportion of the population with sustainable access to an improved water source.

Target 11: Halve, by 2015, the proportion of people who do not have access to basic sanitation. [2]

Indicator: proportion of people with access to improved sanitation.

[1] WSP – Water and Sanitation Program

[2] This target was amended at the World Summit on Sustainable Development held in Johannesburg in 2002.

EU Water Framework Directive 2000/60

The purpose of the EU Water Framework Directive are among others:

- *"the provision of the sufficient supply of good quality surface water and groundwater as needed for sustainable balanced and equitable water use"*
- "*ensures the progressive reduction of pollution of groundwater and prevents its further pollution* "
- *"Member States shall take account of the principle of recovery of the costs of water services, including environmental and resource costs, having regard to the economic analysis conducted according to Annex III, and in accordance in particular with the polluter pays principle*."

Studied Countries

Mediterranean Partner Countries included in the study are:

- Algeria
- Cyprus
- Israel
- Jordan
- Lebanon
- Malta
- Morocco
- Palestine
- Tunisia
- Turkey

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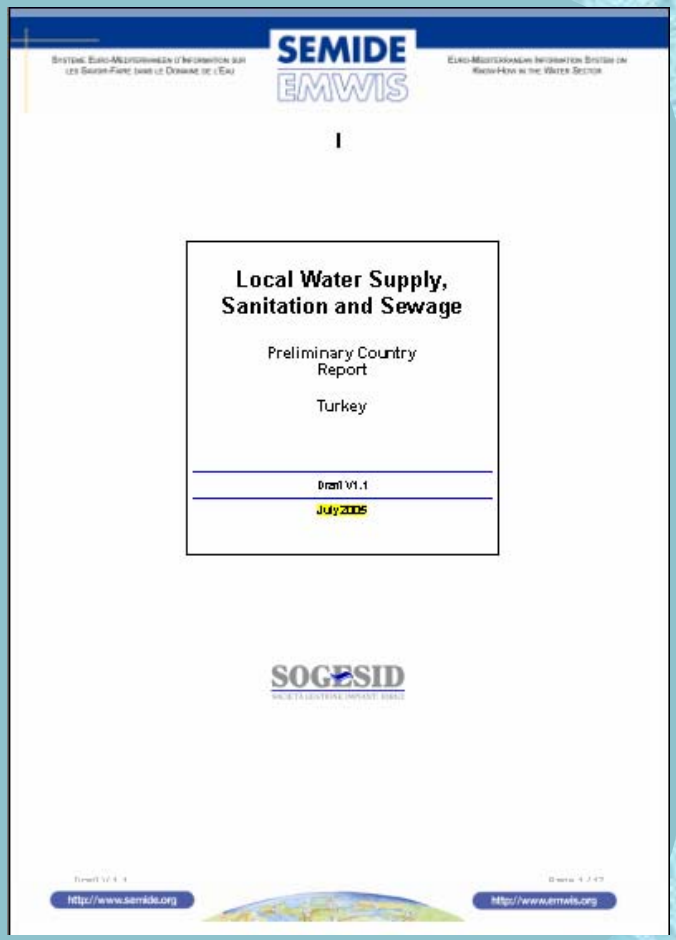
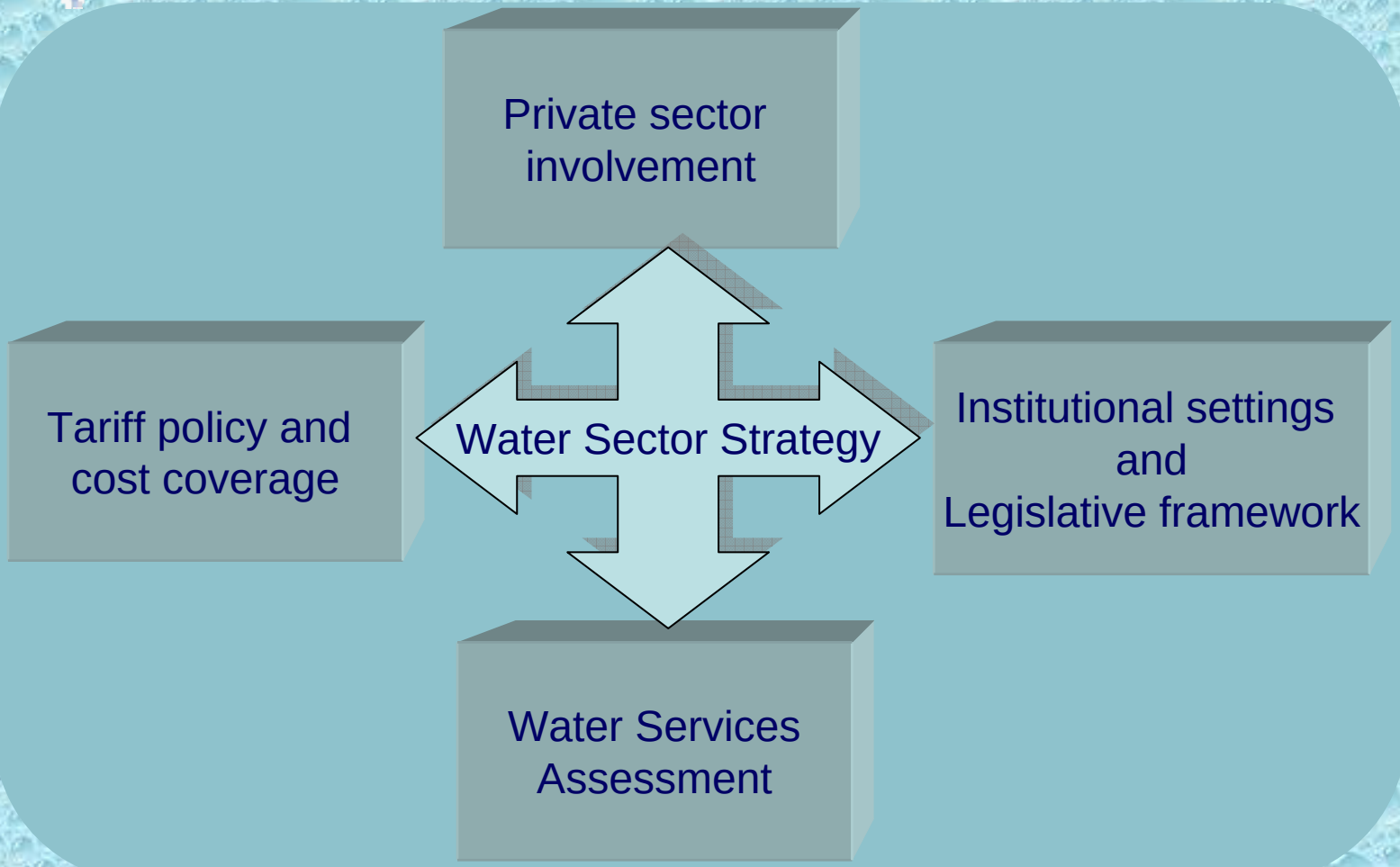
Study Method

- Bibliographic analysis
- Preparation of country reports
- Review of country reports by NFP
- Preparation of synthesis analysis
- Publication of results on a dedicated section at the EMWIS website
- Forum and dedicated section at the EMWIS web page.



Main Topics of the Study



Water Strategy

Before:

Main focus on exploring new water resources increasing supply through large infrastructure works

New approach:

- Private Sector Involvement
- Demand Management
- Economical performance & costs recovery
- Decentralisation
- Integrated Managemet
- Improved Water Governance
- Non conventional water resources - desalination and reuse of wastewater
- Environmental aspects protecting water resources from over-abstraction and pollution

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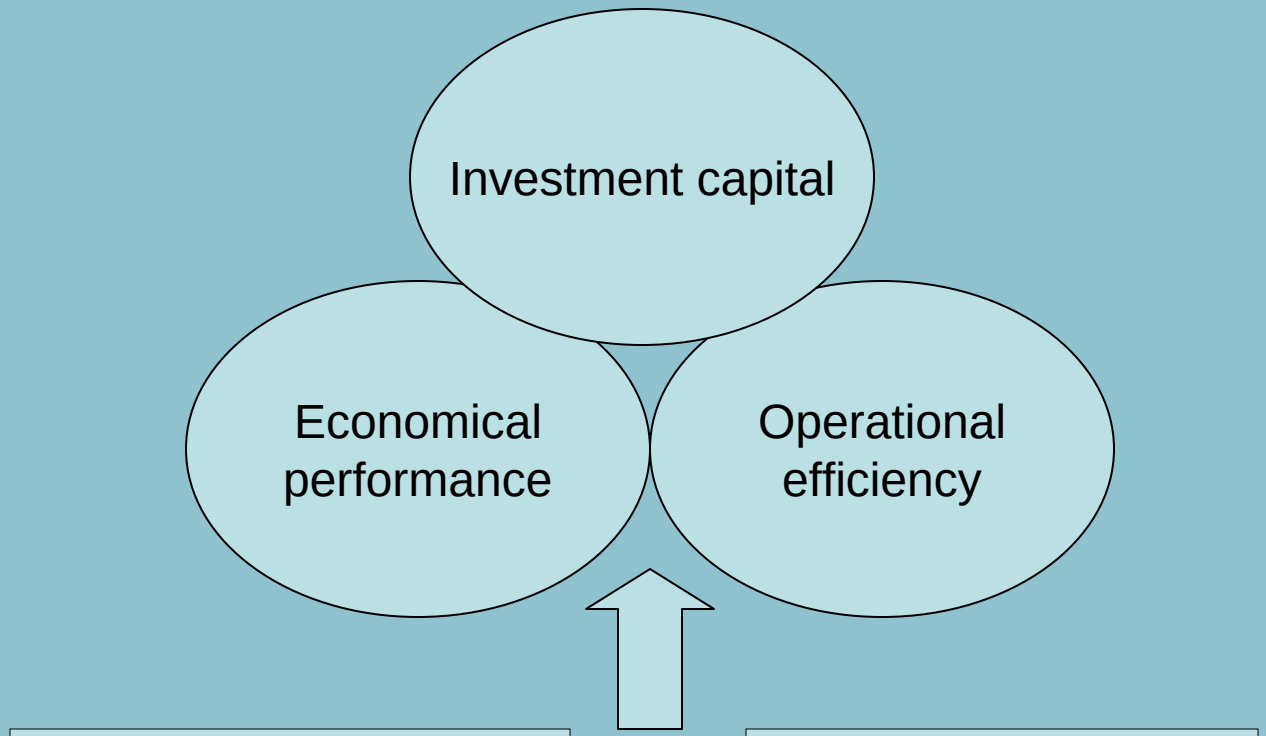
Private Sector Involvement



Private Sector Involvement

Private sector involvement considered strategic - example of management contract

Private sector involvement considered strategic – example of BOT and BOOT

No example of private sector involvement

Opening to private involvement	
Algeria	
Cyprus	
Israel	
Jordan	
Lebanon	
Malta	
Morocco	
Palestine	
Tunisia	
Turkey	

Institutional Settings

- Fragmented institutional settings with consequent complex coordination mechanisms and inefficiency, are a major obstacle for sustainable water management in the MPC.

- A more effective institutional structure and an appropriate legislative framework supporting it is needed.

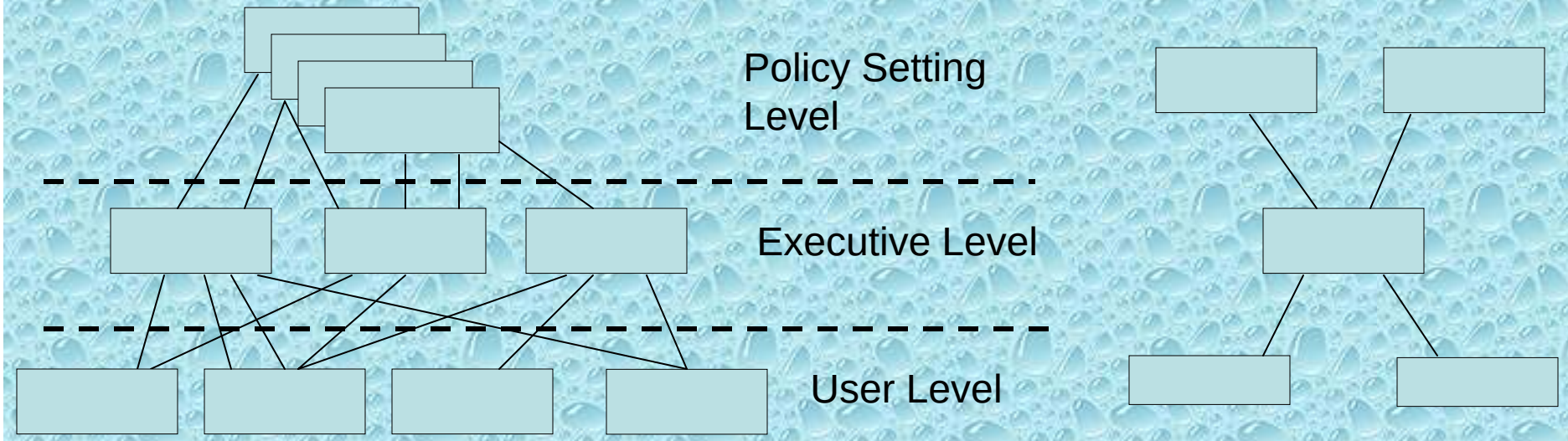
- The trend in the MPC is to consolidate responsibility for water services and resources into one regulatory body and to decentralise and integrate management of water services.

Regulatory body

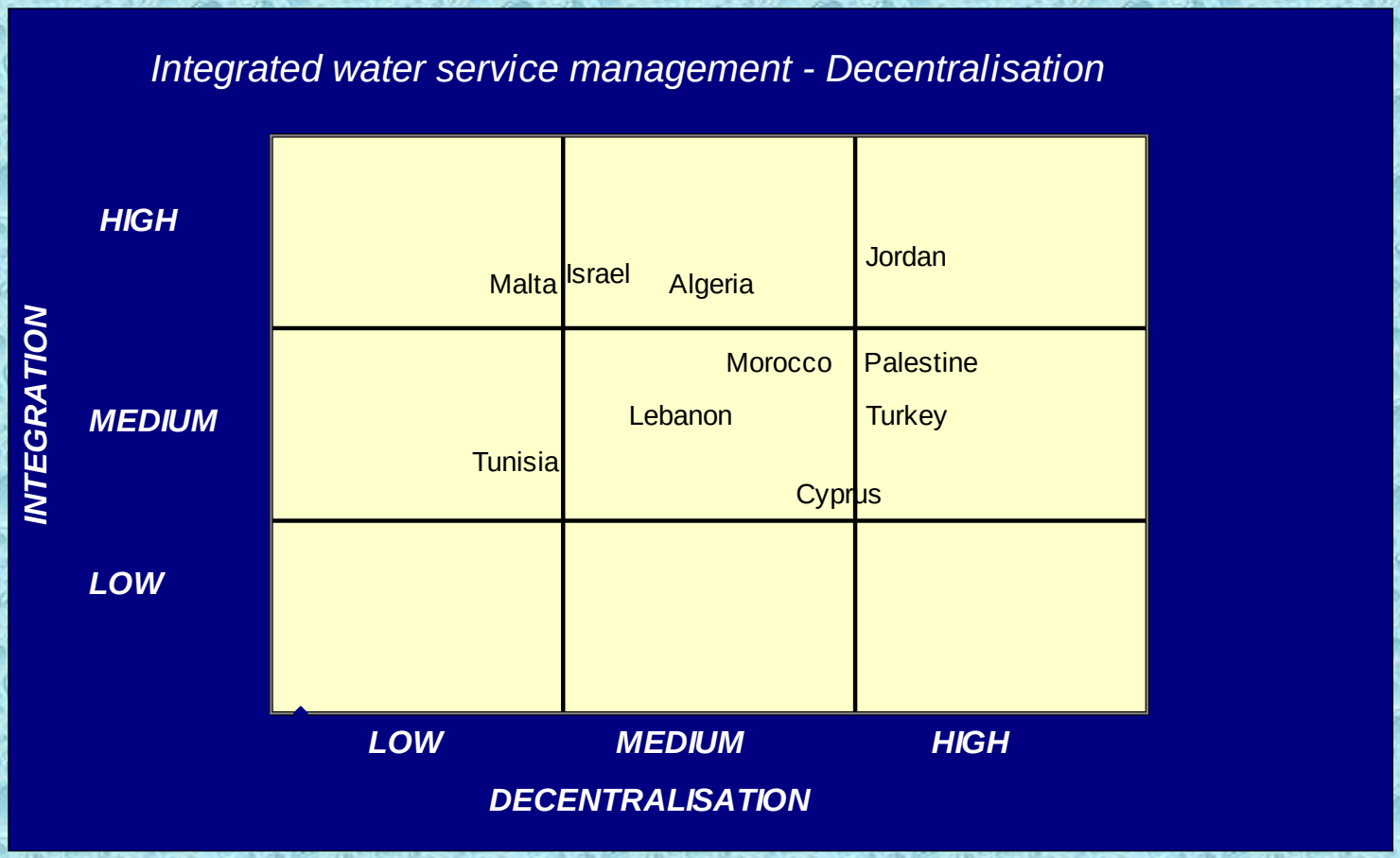
Generally the responsibilities for water services was divided between many different ministries and public bodies.

TREND

Integrate policy setting and supervising responsibilities into one regulatory body, decentralize operations and maintenance and merge water utilities into larger units.



Decentralisation and Integration



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Water Resources

Water Scarcity		*Average*
Population Growth Rate	0,7% - 3,5%	1,7%
Average Annual Rainfall	25 mm/yr - 850 mm/yr	406 mm/yr
Average Annual Renewable Water Resources Mm^3	1 country with more than 220 000 Mm^3/yr, 2 countries with more than 14 000 Mm^3/yr 7 countries with less than 5 000 Mm^3/yr	34 000 Mm^3
N. of countries **2005** with less than 1000 m^3 / capita / yr renewable water resources [1]	7 countries out of 10	430 m^3/cap/yr 946 m^3/cap/yr
N. of countries **2025** with less than 1000 m^3 per capita / yr renewable water resources - Medium Projection [1]	8 countries out of 10	355 m^3/cap/yr 775 m^3/cap/yr

[1] Population Action International (PAI : Resources (2005))

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Water Resources

	Population Growth	Average Annual Rainfall mm/yr	Average Annual Renewable Water Resources Mm^3 [1]	Renewable Water per Capita 2005 m^3 [1]	Renewable Water Per Capita 2025 - Medium Projection m^3 [1]	Total Water withdrawals, All Uses Mm^3 [2]
Algeria	1,22%	89	14.000	426	330	6.074
Cyprus	1,40%	470	1.000	1.230	1.121	266
Israel	1,20%	25	2.000	299	233	1.830
Jordan	2,80%	92	1.000	174	123	866
Lebanon	2,60%	822	4.000	1.064	878	
Malta	0,73%	530				
Morocco	1,54%	346	29.000	919	712	12.607
Palestine	3,45%	500	1.000	262	145	225
Tunisia	0,99%	230	5.000	498	415	3.030
Turkey	1,30%	643	229.000	3.124	2.573	40.000

[1] Population Action International (PAI : Resources (2005))

[2]The data refers to different years (2000 to 2004)

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Water supply for domestic uses

Domestic Water Supply		*Average*
Rate of total water produced allocated to domestic supply	3 countries allocate less than 15% 5 countries allocate around 30%	23%
Rate of total domestic supply from Groundwater [1]	No country less than 23% 1 country with more than 70%	43%
Rate of total domestic supply from Surface Waters [1]	No country less than 21% 1 country with more than 65%	46%
Rate of total domestic supply from Desalination [1]	2 countries cover domestic supply by 50%	n/a

[1] Average based on data for 6 countries out of 10

Water supply for domestic uses

	Rate of total water produced allocated to domestic supply	Rate of total domestic supply from Groundwater	Rate of total domestic supply from Surface Waters	Rate of total domestic supply from Desalination	Rate of total domestic supply from other Sources
Algeria	22,0%				
Cyprus	25,4%	23,7%	21,5%	49,6%	5,2%
Israel	37,6%				
Jordan	32,4%	76,4%	23,6%		
Lebanon					
Malta		44,7%		55,3%	
Morocco	6,8%	39,0%	60,5%	0,5%	
Palestine	34,0%				
Tunisia	13,0%	44,7%	54,0%	1,3%	
Turkey	12,5%	29,0%	70,0%		1,0%

Water Supply Service Coverage

Water Supply Service Coverage		*Average*
Access to improved water resources (MDG) WHO / UNICEF, Joint Monitoring Programme for Water Supply and Sanitation (updated 2004)	Urban: 98% Rural: 88%	93,0%
Population served by public networks (Household connections) WHO / UNICEF, Joint Monitoring Programme for Water Supply and Sanitation (Updated 2004)	Urban: 95% Rural: 68%	83%
Potable Water Supplied (l/cap/day)	No country with average less than 100 l/cap/day	168 l/cap/day
Potable Water Consumed (l/cap/day)	(data available only for four countries)	85 l/cap/day
Average Unaccounted For Water (UFW) %	4 countries with more than 45% UFW	36%
Service Continuity	Only 2 countries resulted having contiunous water supply to the entire population	n/a

[1] All data taken from - WHO / UNICEF, Joint Monitoring Programme for Water Supply and Sanitation – Last updated in 2004

Access to improved water supply

	Access to improved water resources	Urban	Rural	Population served by public networks (Household connections)	Urban	Rural
Algeria	88%	93%	82%	73%	87%	58%
Cyprus	100%	100%	100%	100%	100%	100%
Israel	100%	100%	100%	100%	100%	98%
Jordan	93%	95%	91%	85%	89%	81%
Lebanon	100%	100%	100%	93%	100%	85%
Malta	100%	100%	100%	98%	100%	96%
Morocco	78%	100%	56%	52%	92%	12%
Palestine	92%	97%	86%	77%	91%	63%
Tunisia	89%	98%	80%	77%	98%	36%
Turkey	89%	95%	82%	75%	95%	55%
Average	***93%***	***98%***	***88%***	***83%***	***95%***	***68%***
Good Practice	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***

[1] Source: WHO / UNICEF, Joint Monitoring Programme for Water Supply and Sanitation – Last updated in 2004

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Water supply for domestic uses

	Total Potable Water Supplied Mm^3	Potable Water Supplied (l/cap/day)	Average Unaccounted For Water (UFW) %	Potable Water Consumed (l/cap/day)
Algeria	1.335		40%	
Cyprus	67,5	200	20%	
Israel	688	250		
Jordan	281	125	52%	86
Lebanon	1.261	160	50%	
Malta	34	223	25%	
Morocco	860	150	30%	
Palestine	76,6	100	45%	70
Tunisia	394	104	22%	75
Turkey	5.000	198	41%	110
Average		***168***	***36%***	***85***
Good Practice			***< 20%***	***>100***

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Sanitation and Sewerage

Sanitation Service Coverage		*Average*
Estimated Access to Improved Sanitation 2002(MDG) [1]	Urban: 94% Rural: 76%	86%
Population served by public networks (Household connections) [1]	Urban: 80% Rural: 28%	58%
Access to sanitation services from more recent national statistics	Trend seem positive	88%
Rate of wastewater treated (4 countries out of 10)	1 country treat more than 63%	33%

[1] All data taken from - WHO / UNICEF, Joint Monitoring Programme for Water Supply and Sanitation – Last updated in 2004

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Access to improved sanitation

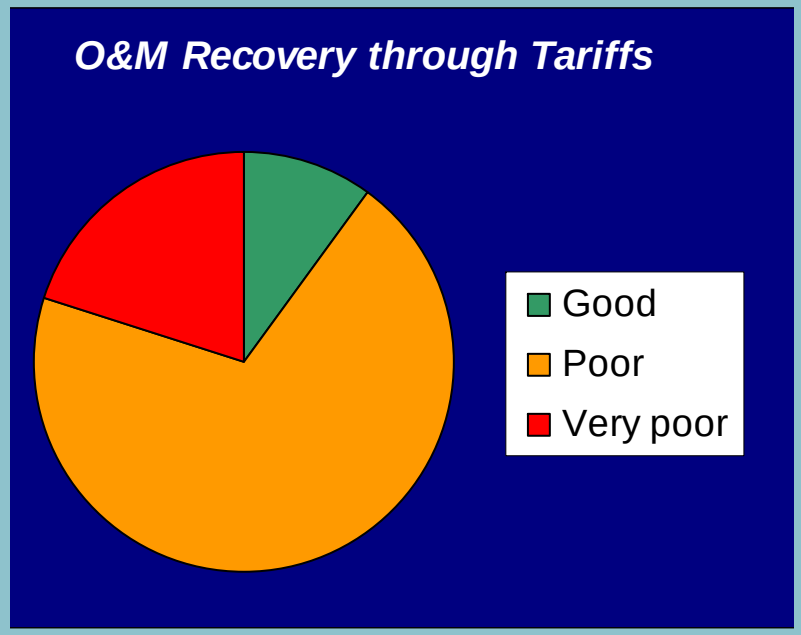
	Access to sanitation services from national statistics	Estimated Access to Improved Sanitation 2002(MDG)	Urban	Rural	Population served by public sewers 2002 (Household connections)	Urban	Rural
Algeria	92%	91%	99%	82%	65%	85%	44%
Cyprus	100%	100%	100%	100%	33%	49%	16%
Israel	100%	100%	100%	100%	81%	91%	70%
Jordan	93%	90%	95%	85%	40%	73%	6%
Lebanon	98%	94%	100%	87%	61%	100%	22%
Malta	100%	100%	100%		95%	95%	
Morocco	61%	57%	83%	31%	49%	81%	16%
Palestine	76%	74%	78%	70%			
Tunisia	80%	76%	90%	62%	50%	64%	35%
Turkey	83%	79%	94%	63%	48%	83%	12%
Average	**88%**	**86%**	**94%**	**76%**	**58%**	**80%**	**28%**

[1] Source: WHO / UNICEF, Joint Monitoring Programme for Water Supply and Sanitation – Last updated in 2004

Tariffs and Cost Recovery

- Almost all countries apply progressive block tariffs.
- Sanitation and sewerage services are still generally charged in proportion to domestic water consumption.
- The majority of the countries still subsidies local water services to some extent.
- Almost all countries apply a fixed part of the tariff independent of the total consumption.
- Meter reading interval varies largely. Between 1-3 months.
- Most countries aim to recover water production costs, at least O&M, and state that all costs should be recovered through tariffs. The objective is still not reached.

Tariffs and Cost Recovery



Conclusions

- The proportion of population with sustainable access to improved water supply can be considered overall sufficient. Recent data (2004) also show an improvement since 2002. The access rate of water supply through a household connection is less but still to be considered sufficient, except for rural areas of some countries, covered by less than 20%.
- The access rate to sanitation services is generally satisfactory except for rural areas of a majority of the studied countries.
- The rate of wastewater undergoing treatment is low and in some countries even very low. Furthermore should be noted that the information regarding sewerage services is scarce and often unreliably.
- The sustainability of water services is still low in the studied countries. Costs recovery of water services, including environmental and resource costs, is still generally low or very low although most countries have the objective to recover at least O&M cost and further on, also capital cost.

Thank you for your attention.

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