

# Local Water Supply, Sanitation and Sewage

## Country Report

### Malta

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November 2005

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MEDA Water



**SOGESID**  
SOCIETÀ GESTIONE IMPIANTI IDRICI



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## 1. SUMMARY

<b>LOCAL WATER SUPPLY, SANITATION AND SEWAGE MALTA</b>
<b>GENERAL CONTEXT</b>
<ul style="list-style-type: none"> <li>• Average Rainfall: 530 mm/ yr</li> <li>• Area: 316 sq km</li> <li>• Population (est. 2003): 399,867<sup>1</sup> latest figure 417,868</li> <li>• Population Growth rate per year (est. 2003): 0.73%<sup>2</sup></li>   <li>• Currency: 1 Maltese Lira (Lm or MTL) = 2,1190 € =100 cent =1000 mils</li> </ul>
<b>INSTITUTIONAL SETTINGS</b>
<p><b>Policy Setting:</b>  <b>Executive / Regulatory Level:</b> Malta Resource Authority(MRA) – Within authority 3 directorates. “Directorate for Water Resources Regulation”, dedicated to water resources.  <b>Local User Level:</b> National Water Utility – Water Services Corporation (WSC). Independent, fully owned by the government. WSC has six sub-departments. There are current proposals for WSC’s privatisation in the near future.</p> <ul style="list-style-type: none"> <li>• <b>Private Sector Involvement:</b>            For the last six years, the Sant’ Antrnin Sewage Treatment Plant (SASTP) operations have been the responsibility of a private contractor.</li> </ul>
<b>WATER STRATEGY</b>
<ul style="list-style-type: none"> <li>• Included in the “The National Action Plan”<sup>3</sup> As a water strategy the implementation of a water policy can be considered more of a water strategy than the national Action Plan. This is currently being formulated within the MRA and Ministry for resources and Infrastructure.</li> </ul>
<b>WATER BALANCE</b>
<ul style="list-style-type: none"> <li>• Total Water Resources:           <ul style="list-style-type: none"> <li>• Groundwater: FAO 1997. estimated that the total natural renewable groundwater is 40 Mm<sup>3</sup>/year</li> <li>• Surface Water: (no surface water except for tiny freshwater pools which are important for their ecological status)</li> </ul> </li> <li>• No. of consumers (2003): Population Served 417.268<sup>4</sup></li> <li>• Total Potable Water Supplied (Bulkwater) (2003-2004): 34,017,613 m<sup>3</sup><sup>5</sup> <ul style="list-style-type: none"> <li>• Groundwater: 15.155.621m<sup>3</sup></li> <li>• Desalination: 18.801.982 m<sup>3</sup></li> </ul> </li> <li>• Potable Water Supplied (2003): 223 l/cap/day<sup>6</sup></li> <li>• Unaccounted for Water (UFW): Total Leakage: 22 968 m<sup>3</sup> / day = approximately 8.4 Mm<sup>3</sup>/year or 25% of total water supplied<sup>7</sup></li> </ul>

<sup>1</sup> Source: National Statistics Office, Malta, News Release No. 235, 2004

<sup>2</sup> Source: National Statistics Office, Malta, 2003

<sup>3</sup> Source: The first communication of Malta to United Nations Framework Convention on Climate Change, April 2004

<sup>4</sup> Source: Water Service Cooperation - Annual report 2004 - Operations - WSC Web Page

<sup>5</sup> Source: Water Service Cooperation - Annual report 2004 - Operations - WSC Web Page

<sup>6</sup> Source: Water Service Cooperation - Annual report 2004 - Operations - WSC Web Page

<sup>7</sup> Source: Water Service Cooperation - Annual report 2004 - Operations - WSC Web Page

<p><b>WATER SUPPLY</b></p> <ul style="list-style-type: none"> <li>Population served by public drinking water networks: 100%<sup>8</sup></li> </ul> <p>Potable water consumed per capita: 223 l/cap/day</p> <ul style="list-style-type: none"> <li>Total Billed Consumption (1999-2000): 49%</li> <li>Real Losses= 33% and Apparent Losses = 18%<sup>9</sup></li> <li>Service Continuity:</li> </ul> <p>Estimated Rate of Population with access to Improved Water sources through Household Connections:<sup>10</sup></p>
<p><b>SANITATION &amp; SEWAGE</b></p> <ul style="list-style-type: none"> <li>Rate of Population connected to public Sanitation <sup>11</sup>: Nearly 100% <ul style="list-style-type: none"> <li>Urban: 95%</li> <li>Rural: 84%</li> </ul> </li> </ul> <p>Wastewater:<sup>12</sup></p> <ul style="list-style-type: none"> <li>Total Volume of Wastewater: approximately 19 Mm<sup>3</sup>/yr (collected 98%)</li> <li>Rate of Wastewater undergoing treatment: 20% (NB: values can be lower during the wet season. It depends on the local amount of rainfall.)</li> <li>Waste water undergoing treatment: <ul style="list-style-type: none"> <li>Physical:</li> <li>Biological:</li> <li>Advanced:</li> </ul> </li> <li>Rate of population served by waste water treatment plants in total population:</li> </ul> <p>Estimated Rate of population with access to improved sanitation<sup>13</sup></p> <ul style="list-style-type: none"> <li>Urban: 95%</li> <li>Rural: 84%</li> </ul>
<p><b>FINANCE AND INVESTMENT</b></p> <ul style="list-style-type: none"> <li>Total Income WCS / National GDP: 0,69 %<sup>14</sup></li> <li>Total Investment in the Water Sector:</li> <li>Investment in Water Supply: In 1999 the Government expenditure on water supply amounted to 2.6 million Maltese Liri.</li> <li>Total Investment in Sanitation and Treatment %:</li> <li>Private Part of Total Investment %:</li> <li>Innovative solutions for financing investments:</li> <li>Responsible for Investments in Water Works: MITTS (Malta Information Technology and Training Services)</li> </ul>
<p><b>TARIFFS</b></p> <ul style="list-style-type: none"> <li>Turnover from Sale of Water and Service Bills: 11.686.305 Lm<sup>15</sup> = approx. 24.8 M€</li> <li>Total Operating Costs: 17.674.570 Lm<sup>16</sup> = approx. 37.5 M€</li> <li>Rate of O&amp;M costs covered through tariffs:</li> <li>Tariff system:</li> <li>Different water tariffs levels: Meter Rent and different tariffs per m<sup>3</sup></li> </ul>

<sup>8</sup> Source: National Statistics Office – Malta News Release No. 235, 2004

<sup>9</sup> Source: A water policy for the future, Malta Resources Authority, March 2004

<sup>10</sup> Source: WHO / UNICEF Joint Monitoring Programme for Water Supply and Sanitation, Coverage Estimates Improved Drinking Water, Updated in July 2004 Malta

<sup>11</sup> Source: National Statistics Office – Malta News Release No. 235, 2004

<sup>12</sup> Source: National Statistics Office – Malta News Release No. 235, 2004

<sup>13</sup> Source. WHO / UNICEF Joint Monitoring Programme for Water Supply and Sanitation, Coverage Estimates, Improved Sanitation, Malta, Updated in July 2004

<sup>14</sup> Source: Water Service Cooperation - Annual report 2004 – Financial Statement- WSC Web Page

- Medium Tariff for water supplied by WSC is Lm 1,1 for 1m<sup>3</sup> of water. Preferential tariffs are however available for certain uses and certain steps in the quantity used.<sup>17</sup>  
Es. Domestic Consumer<sup>18</sup>: 0-11 m<sup>3</sup> Lm 16c5/m<sup>3</sup> = approx. 0.34 €  
> 11 m<sup>3</sup> Lm 1.1 /m<sup>3</sup> = approx. 2.33 €
- Metering frequency: Since 2005, the water meters are read every 2 months, every third bill will be based on actual readings.<sup>19</sup>

Responsible institution for setting water tariffs:

- Water Services Corporation. Tariffs are regulated by regulation 12 of the Water Supply Regulations, 1999. WSC responsible for meter readings

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<sup>15</sup> Source: Water Service Cooperation - Annual report 2004 – Financial Statement- WSC Web Page

<sup>16</sup> Source: Water Service Cooperation - Annual report 2004 – Financial Statement- WSC Web Page

<sup>17</sup> Source: A water policy for the future, Malta Resources Authority, March 2004

<sup>18</sup> Source: Malta Resource Authority -Water Tariffs - 1999

<sup>19</sup> Source: Water Service Cooperation - Annual report 2004 - Operations - WSC Web Page

## 2. GENERAL CONTEXT

### 2.1. Geography<sup>20</sup>

Located in the Mediterranean Sea, just south of Sicily, the Maltese archipelago basically consists of three islands: Malta, Gozo and Comino.

Area of the Maltese Islands: 316 sq km.

Malta is characterized by a series of low hills and slopes towards the North East and low lying land to the south. Malta has no mountains (the highest point is 252 metres) or rivers.

### 2.2. Climate<sup>21</sup>

The islands have around 300 days of sunshine each year. The summer is dry and the winter mild. The total annual rainfall is approximately 500 mm. It rarely rains during the summer months.

### 2.3. Social Context<sup>22</sup>

Total population (2003)<sup>23</sup>

	Total area	Population	Persons per 1 Km <sup>2</sup>
<b>Maltese Islands</b>	<b>315.2</b>	<b>399,867</b>	<b>1,269</b>
Malta	246.5	368,250	1,494
Gozo and Comino	68.7	31,617	460

#### Population Growth Rate (2003):

Population growth is estimated to 0.73% (2003)<sup>24</sup>.

#### Currency:

1 Maltese Lira (Lm or MTL) = 2,1190 € =100 cent =1000 mils

<sup>20</sup> Source: "Seawater and Brackish Water Desalination in the Middle East, North Africa and Central Asia" - Final Report. Annex 5 - Malta. The World Bank Bank-Netherlands Water Partnership. December 2004.

<sup>21</sup> Source: "Seawater and Brackish Water Desalination in the Middle East, North Africa and Central Asia" - Final Report. Annex 5 - Malta. The World Bank Bank-Netherlands Water Partnership. December 2004.

<sup>22</sup> Source: "Seawater and Brackish Water Desalination in the Middle East, North Africa and Central Asia" - Final Report. Annex 5 - Malta. The World Bank Bank-Netherlands Water Partnership. December 2004.

<sup>23</sup> Source: National Statistics Office – Malta - News Release No. 235, 2004 -

<sup>24</sup> Source: National Statistics Office – Malta - News Release No. 235, 2004 -

### 3. INSTITUTIONAL SETTINGS

With the creation of the Malta Resources Authority, the responsibility for Local Water Supply and Sewage has been divided between Malta Resource Authority (MRA) and the Water Services Corporation (WSC). MRA has the functions to regulate and supervise activities while WSC is responsible for the operations. With the incorporation of the Drainage Department, naming it the Wastewater Unit, WSC has become responsible for the whole water cycle in Malta and Gozo.

Level	Institution	Comment
Policy Setting Level	The Ministry for Resources and Infrastructure	It is mainly responsible for major infrastructure works and projects that are carried out throughout the Maltese Islands. Its portfolio is vast, and includes the responsibility for promoting and managing major construction projects, public cleansing and for safeguarding the interest of the construction industry in general.
Executive Regulatory	Malta Resource Authority (MRA) <sup>25</sup> through the Directorate for Water Resources Regulation <sup>26</sup>	<p>The Malta Resource Act (2000) establish the Malta Resources Authority as an autonomous an independent regulator. MRA responsibilities essentially involve regulation of water and energy utilities, industrial enterprises exploiting resources and private abstractors of groundwater, retailers, operators and tradesmen in the regulated sectors.</p> <p>MRA has 3 directorates. The Directorate for Water Resources Regulation is responsible:</p> <ul style="list-style-type: none"> <li>• to ensure the proper and sustainable use of all water resources</li> <li>• treatment, storage, disposal, use or re-use of sewerage, waste-water, sludge and storm water run off, provision of public sewerage systems, re-use of treated effluents and disposal of sewerage.</li> </ul> <p>encourages the national water utility (WSC) to improve its efficiency and service standards whilst ensuring fair and reasonable pricing of its services to the consumer</p> <p>secure, in the long term, the most proper use of all water resources, both conventional and non-conventional ones whilst ensuring environmental protection</p>
User Level	National Water Utility - Water Services Corporation (WSC) <sup>27</sup>	The Water Services Corporation Act (1991) grants exclusive rights to state owned public utility, WSC, for the acquisition, production, sale, distribution and disposal of domestic, commercial and industrial water. <sup>28</sup>

<sup>25</sup> Source: "Water Framework Directive - First Consultation Paper" - 04 September 2002 - Malta Resource Authority

<sup>26</sup> Source: Malta Resource Authority – Web Page

<sup>27</sup> Source: Water Services Corporation - Annual Report 2004 - Financial Statements – WSC Web Page - Year ended 30<sup>th</sup> September 2003

<sup>28</sup> Source: Water Services Corporation - Annual Report 2004 - Financial Statements – WSC Web Page –Year ended 30<sup>th</sup> September 2003



Other Institutions	Malta Environment and Planning Authority -EIA <sup>29</sup>	<p>The Environmental and Planning Authority was formed when the Environmental Protection Department merged with the Planning Authority to form a policy formulating, regulating and monitoring body that, in collaboration with other agencies, endeavours to achieve sustainable development in Malta.</p> <p>The responsibilities of the Malta Environment and Planning Authority are defined under the Environment Protection Act of 2001.</p>
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### 3.1. Water Services Cooperation Organisation

“We supply water reliably, and dispose of wastewater safely, to recognised standards of quality, aiming to satisfy the expectations, of all sectors of the community, using resources affectively and economically, whilst safeguarding health and the environment.” <sup>30</sup>

There are several units under WSC responsible for different operational activities:

- **Ground Water Operations – (GWO Unit)**

The GWO unit is responsible for water production process. The main activity of the GWO Unit is to ensure the continuous operation of the various pumps and electrical equipment installed. GWO is responsible to ensure safe drinking water. Apart of this the GWO manages the energy consumption, drilling activities and boreholes maintenance. <sup>31</sup>

- **Gozo Technical Operations and Maintenance**

The main areas of operations within the Unit are distribution works and control, production operations, engineering services, quality, billing and administration. <sup>32</sup>

- **WSC Wastewater Unit – ex Drainage Department**

1. Sewer Maintenance Section - The purpose of the Sewer Maintenance Section (SMS) is to ensure the efficiency and sanity movement of wastewater up to the sewage treatment plants and pumping stations. The preventive Maintenance Program of this section is to make sure that the sewer mains remain in proper working order and that any problem can be prevented before they occur. Large parts of the sewer system is inspected every year and to minimize operational costs SMS carries out repairs to sewers lines whenever possible by direct labour. Private contractors selected through a bidding process handle large scale replacements and upgrades to the system.
2. Sewers Extension Section - The activities of the SES involves mainly new extensions, renewal and Civil Engineering

- **WSC Works**

Practically all works during 2003 were carried out on behalf of the Works Division, Ministry for Human resources and Infrastructure.

- **Malta Desalination Services**

Between August 2003 and July 2004, Pembroke, Cirkewwa and Lapsi Reverse Osmosis (RO) Plants produced 18,901,992m<sup>3</sup> of water. Data for water production over the last seven years show that production has increased by 3.70%. <sup>33</sup>

<sup>29</sup> Source: “Seawater and Brackish Water Desalination in the Middle East, North Africa and Central Asia” - Final Report. Annex 5 - Malta. The World Bank Bank-Netherlands Water Partnership. December 2004. DHV Water BV, the Netherlands. BRL ingénierie, France.

<sup>30</sup> Source: Water Services Corporation - Annual Report 2004 – WSC Web Page

<sup>31</sup> Source: Water Services Corporation - Annual Report 2004 – Operations - WSC Web Page

<sup>32</sup> Source: Water Services Corporation - Annual Report 2004 – Operations - WSC Web Page

### **3.2. Regional Responsibility and Set-up** <sup>34</sup>

In October 2003, the WSC established a new regional set-up. Three regions were established to replace the existing nine districts. Each region is responsible for the operations and maintenance of the distribution network within their predefined physical area.

The primary objective of the regions are to improve the service given to customers and to reduce water losses to a minimum economically acceptable level. set-up of performance indicators.

The WSC regularly review the indicators since they are instrumental in the controlling and monitoring of all operations by the Regions.

The Regions are headed by a Regional Engineer, closely assisted by an Operations Manager who manages the day-to-day operations. Together they organise a wide range of works, encompassing such activities as installing water supply piping and meters, major infrastructure projects and replacing or extending the distribution network.

### **3.3. Private Sector Involvement**

Private sector involvement is limited because of the exclusive rights given to the Water Service Commission. There are some examples of private involvement regarding private abstraction and production of water.<sup>35</sup>

The management of the Sant Antnin Wastewater Treatment Plant is outsourced to an external contractor.

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<sup>33</sup> Source: Water Services Corporation - Annual Report 2004 – Operations - WSC Web Page

<sup>34</sup> Source: Water Services Corporation - Annual Report 2004 – Operations - WSC Web Page

<sup>35</sup> Source: "Current Status of Water Sector Restructuring in Malta", September 2003

## 4. LEGAL FRAMEWORK

The legal and institutional framework on Malta is well developed in order to cope with the severe water scarcity problems the island has faced for a long time. The most important laws regulating local water supply and sanitation are:

Law	Argument	Comment
Water Services Cooperation Act, XXV -1991. Chapter 355 <sup>36</sup>	The establishment of a public body to be known as the Water Services Corporation	The Water Services Corporation shall perform functions related to the acquisition, transformation, manufacture, distribution and sale of potable and non-potable water, and, as appropriate, to the treatment and disposal or re-use of sewage and waste water, and re-use of stormwater run-off.
Sewerage Discharge Control Regulations (LN8/93) more importantly (LN 139/2002)	This law regulates all discharges into the sewerage system	
Malta Resources Authority Act, 2000 XXV	This act establish the Malta Resources authority and its responsibilities	Chapter 423 states Malta Resource Authority should regulate and monitor all practice, operations and activities relating to water (including groundwater and storm-water), energy and mineral resources, with the obligation of formulating and implementing resource management strategies.  The law specifically mandates it to secure and regulate the conservation, of water resources and the sources of water supply and to establish measures for the protection of the environment in the practices relating to water. MRA has also the responsibility to ensure that international obligations entered into by the Government relative to water regulation are complied with.
Environmental Protection Act, 2001		Malta has in place a comprehensive environmental legislation with an Environmental Protection Act, issued in 2001, and further 74 associated legal notices. Enforcement of this legislation is under progress.
L.N. 357 of 2004 FOOD SAFETY ACT, 2002 (ACT NO. XIV of 2002) <sup>37</sup>	Water Supplies Intended for Human Consumption Regulations, 2004	These regulations apply to the registration of private water supplies intended for human consumption and shall include all water, either in its original state or after treatment, intended for drinking, cooking, food preparation or other domestic purposes, which is not distributed

<sup>36</sup> Source: Water Services Cooperation - Legal Matters - Water Services Cooperation Act, 1991 - WSC Web Page

<sup>37</sup> Source: L.N. 357 of 2004 FOOD SAFETY ACT, 2002 (ACT NO. XIV of 2002) Registration of Private Water Supplies Intended for Human Consumption Regulations, 2004

		through a distribution network, and it shall also include water produced through a private treatment plant, including a reverse osmosis plant, and water supplied in tankers or any other method of conveyance other than a distribution network, used by an authorized water undertaker.”
Water Supply and Sewerage Services Regulations, 2004 <sup>38</sup>	Define categories with regards to water suppliers and sewerage services operators and their functions as services operators.	Service providers, offering any service or operating any system mentioned in the regulations, shall apply for a licence.
Water Policy Framework Regulations, 2004 <sup>39</sup> - a Water Policy for the Future.	Framework for water protection and the provision of EU Directive 2000/60/EC.	The purpose of these regulations is to establish a framework for the protection of inland surface waters, transitional waters, coastal waters and groundwater and to transpose the provisions of Directive 2000/60/EC of the European Parliament and of the Council.”

<sup>38</sup>Source: L.N. 525 of 2004 Malta Resources Authority Act (Act No. XXV of 2000) Water Supply and Sewerage Services Regulations, 2004

<sup>39</sup>Source: L.N. 194 of 2004, Malta Resources Authority Act, 2000, (Act No. XXV of 2000) Environment Protection Act, 2001 (Act No. XX of 2001) Water policy Framework Regulations, 2004

## 5. WATER STRATEGY

- **The National Action Plan** <sup>40</sup>

Water resources:

- Demand-side management of water resources: curbing abuse to limit the need for potable water production.
- Encouragement of the use of alternative water sources for activities that can be satisfied by non-potable supplies.
- Creation of an educational and awareness campaign on efficient use of water.
- Enforcement measures and possibly a revision of water tariffs on the basis of usage
- Sustain efforts to reduce water losses by way of leakage and repair detection, meter repair/maintenance and pressure management systems.
- Enhancement of groundwater recharge to improve the groundwater/reverse osmosis water production ratio by curtailing illegal groundwater abstraction.
- Monitoring and assessment of the impacts of sea level rise on the groundwater aquifer.
- Development and finalisation of an integrated storm water management plan that comprises a flood mitigation system and improved methods of harnessing storm water (increasing retention times and conserving infiltration areas to enhance groundwater recharge, improving rainwater catchments and storage through the use of more numerous and higher capacity water reservoirs for irrigation).
- Promotion of the use of suitably treated effluent according to international standards especially in the industrial and agricultural sectors.
- Use of treated effluent in areas that fall outside the groundwater protection zone.
- Improvement of irrigation techniques and their engineering.
- Development of more energy efficient infrastructures in the water production and water supply sectors and wastewater treatment and disposal, including benchmarking of key parameters to establish feasible targets and assess levels of improvement.
- Encouragement of on-site treatment of sewage and reuse of treated effluent by major consumers.
- Reduction of loads on the sewerage system by restraining water consumption as well as through the elimination of illegal water discharges.
- Ensuring that the sewerage system will operate under aerobic conditions, by providing proper design and maintenance.
- Introduction of tariffs for sewage disposal on the basis of water consumption volumes.
- Implementation of the provisions of the Sewerage Master Plan for Malta and Gozo in respect of sewage treatment.

The Sewerage Master Plan drawn up in 1992 envisages the setting up of three new sewage treatment plants (STP), two in Malta and one in Gozo. In addition, upgrading of the supporting sewerage network in the south of Malta will enable SASTP to operate at full capacity. <sup>41</sup>

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<sup>40</sup> The first communication of Malta to United Nations Framework Convention on Climate Change, April 2004

<sup>41</sup> The first communication of Malta to United Nations Framework Convention on Climate Change, April 2004

## 6. WATER ASSESSMENT

### 6.1. Water Resources

Among the Mediterranean Countries Malta has the lowest level of natural water resources per capita. The country has no rivers and lakes. The main source of freshwater are two aquifers.

Service Coverage	Local drinking water supply is available to all inhabitants on Malta <sup>42</sup>
Water Production 2003	34.017.613 m <sup>3</sup> <sup>43</sup>
Potable Water Supplied Per Capita , 2003	223 l /cap/ day <sup>44</sup>
Domestic Demand	Approx. 15 Mm <sup>3</sup> per year
UFW	Approx 25 %

Sources for water production 2003<sup>45</sup>:

Water Production capacity in Malta and Gozo is approximately 145 000 m<sup>3</sup> per day. Of this some 58% is produced by seawater desalination using reverse osmosis and 42 % from groundwater sources.

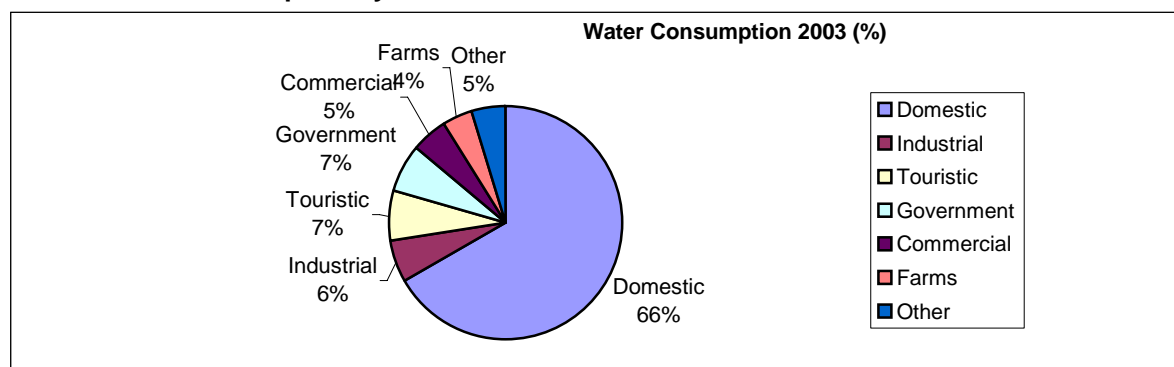
The table below shows a breakdown of water production according to source. The percentage of desalinated water of the total water produced has continued to increase. This is in line with the WSC's policy to control groundwater extraction and improve the quality of drinking water.

Table 13. Sources for water production

	cubic metres		
	Ground water	R.O. plants	Total production
Malta	13,015,378	18,969,489	31,984,867
Gozo	2,180,825	-	2,180,825
Maltese Islands	15,196,203	18,969,489	34,165,692
Percentage	44.48	55.52	100.00

Source: Water Services Corporation

#### • Water Consumption by Sector 2003<sup>46</sup>:



<sup>42</sup> Source: National Statistics Office – Malta News Release No. 235, 2004

<sup>43</sup> Source: National Statistics Office – Malta News Release No. 235, 2004

<sup>44</sup> Source: Water Service Corporation Annual Report, 2004

<sup>45</sup> Source: Water Services Corporation - Annual Report 2004 - Financial Statements – WSC Web Page

<sup>46</sup> Source: Malta single programming document 2004 – 2006, Planning and Priorities Co-ordination Directorate, Office of the Prime Minister

- **Desalination Plants<sup>47</sup>**

During the late seventies, a new desalination technology had made great strides and progress. Due to the high fuel prices, the Government turned its attention to a relatively new desalination technology - Reverse Osmosis. It was decided that a 20,000 m<sup>3</sup>/day plant be installed on the SW part of the island - at Ghar Lapsi. This could guarantee water to the worst affected part, namely the central and southern part of Malta where rapid industrialisation and urbanisation was taking place. In 1982, the Ghar Lapsi SW Plant was the largest to be built in the world. A brackish R. O. plant was also commissioned in 1983 at Marsa.

A second seawater R.O. Plant was commissioned in 1986. This was located in the touristic Sliema area at Tigne'. In 1988, yet another plant was commissioned, this time in the North at Cirkewwa. Thus, improved water quality was guaranteed to the North and to Gozo, which up till that time depended solely on groundwater.

There are no current plans for any new seawater desalination plants in the immediate future. Upgrading and improvement of existing plants will continue.

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<sup>47</sup> Source: Water Services Corporation - Evolution of Water Production in Malta – WSC Web Page

## 6.2. Water Supply<sup>48</sup>

Performance Indicators		
Coverage	Unit	Performance Data 2003-2004
Area Served	km <sup>2</sup>	316
Population Served	No.	417.868
No. Of domestic Accounts	No.	184.496
No. Of Business, commercial, agriculture, Industry and other customer accounts	No.	38.831
Tot. No. Of active accounts	No.	224.427
<b>Water Resource Management</b>		
Annual Percipitation	million m <sup>3</sup>	154,3
Total Volume of sea, brackich and groundwater (potable and non-potable) abstracted by WSC	m <sup>3</sup>	449.008
Returned water to the environment (groundwater + birr)	m <sup>3</sup>	28.139.343
Total potable water supplied	m <sup>3</sup>	34.017.613
Groundwater production	m <sup>3</sup>	15.115.621
Desalination	m <sup>3</sup>	18.801.982
Potable water supplied	l/ capita /day	223
<b>Water Auditing</b>		
Total Leakage	m <sup>3</sup> / day	22.968
Total Leakage	l / prop / h	4,6
Total Leakage (including sevice pipes)	m <sup>3</sup> / km /day	8,9
<b>Water Distribution Network Performance</b>		
Total water mains (excluding service pipes)	km	1.796
Water supply mains installed new (extensions)	km / year	5,9
Water mains replaced /rehabilitated (Renewals)	km / year	38,45
Storage capacity of operational reservoirs	m <sup>3</sup>	438.010
<b>Quality of Service</b>		
Internal Quality Audits	No.	28
<b>Corporate Environmental Performance</b>		
Total energy consumption	MWh	127.630
Specific energy - RO plants	kWh / m <sup>3</sup>	5,95
Specific energy - Groundwater	kWh / m <sup>3</sup>	0,74
Chlorine usage	g / m <sup>3</sup>	0,95
<b>Drinking Water Quality</b>		
% tests at consumet taps complying with micro-biological standards	%	100%
% tests at consumet taps complying with chemical mandatory parameters (Legal Notice 116 of 2004, Food Safety Act, 2002 - Schedule I Part B)	%	99%
<b>Financial Performance</b>		
Income Including reimbursement from government for subsidy on water	Lm	21.219.978
Total operating cost	Lm	17.674.570
Debt Service Ratio	Operating Revenu	1,17
Net fixed assets / capital	Lm / capita	45
Labour costs as a proportion of operational costs	%	40
Total Income / National GDP	%	0,69

Source: Water Service Corporation Annual Report, 2004

- **Unaccounted for Water UFW**  
Infrastructure Leakage Control (ILI)<sup>49</sup>.

<sup>48</sup> Source: Water Service Cooperation - Annual report 2004 - Operations - WSC Web Page

<sup>49</sup> Source: Water Services Corporation - Annual Report 2004 – Operations - WSC Web Page



The Prime target for leakage control was achieved for year 2003. The plan was to lower the leakage levels from around 1300 m<sup>3</sup> / h for whole of Malta to around 900m<sup>3</sup> / hr by July 2004. This represents a reduction in the Infrastructure Leakage Index (ILI)<sup>50</sup> from 4.9 last August to a July 2004 figure of 3.6.<sup>51</sup>

The current Infrastructure Leakage Indicator (ILI) in Gozo is 1.5 while in Malta the ILI is 3.5.<sup>52</sup>

Unaccounted For Water: 25%

### 6.3. Sanitation and Sewage

- **Service Coverage:**

The sewerage network covers most of the Maltese Isles<sup>53</sup>  
Nearly 100 % of the households are connected to sewerage and wastewater.

- **Wastewater treatment:**<sup>54</sup>

It is estimated that 98% of total wastewater in the country (approximately 19 Mm<sup>3</sup>/yr) is collected.

From the total amount of wastewater produced annually approximately 15% is now being treated at the Sant Antnin WWTP. The remaining wastewater is discharged into the sea. Marine discharge of wastewater is estimated to stand at approximately 18.7 million m<sup>3</sup>.

There are plans to treat all wastewater on Malta within 2007

### 6.4. The Sant' Antnin Sewage Treatment Plant (SASTP)<sup>55</sup>

Due to an increase in water demand - satisfied largely through the use of desalination plants - the significant volume of water consumed in the Islands places a burden on the sewerage system. The system is further burdened by tourist arrivals, especially during the summer months. This overburdening results in frequent sewage overflows.

Following the publication of the Sewerage Master Plan in November 1992 several kilometres of sewers in coastal areas have been replaced. The State of the Environment Report (EPD 1999) notes that in 1992, the total amount of wastewater discharged into the marine environment was 23.2 million m<sup>3</sup>. It also records that Maltese waste water has a high organic content in comparison with that of other European countries, due to lack of treatment prior to disposal and relatively lower per capita water consumption.

Currently, the Sant' Antnin Sewage Treatment Plant (SASTP) is the only sewage treatment plant in Malta<sup>56</sup>. Two other sewage treatment plants are in the pipeline, one in Malta near Cumnija and the other in Gozo. These are projected to be completed by 2007.

WSC Annual Report 2004 state that 3,035,011 m<sup>3</sup> of wastewater was channelled to the SASTP for purification purpose, 2,128,976 m<sup>3</sup> of which were delivered for reuse. Approximately 75% is provided to the agricultural sector and the remaining 25% to the industrial sector.

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<sup>50</sup> Infrastructure Leakage Index – ILI- See appendix for details regarding this index.

<sup>51</sup> Source: Water Services Corporation - Annual Report 2004 – Section A – WSC Web Page

<sup>52</sup> Source: Water Services Corporation - Water facts – WSC Web Page

<sup>53</sup> Source: "Seawater and Brackish Water Desalination in the Middle East, North Africa and Central Asia" - Final Report. Annex 5 - Malta. The World Bank Bank-Netherlands Water Partnership. December 2004

<sup>54</sup> Source: "Seawater and Brackish Water Desalination in the Middle East, North Africa and Central Asia" - Final Report. Annex 5 - Malta. The World Bank Bank-Netherlands Water Partnership. December 2004

<sup>55</sup> Source: Malta Single Programming Document, 2004 – 2006, Planning and Priorities Co-ordination Directorate, Office of the Prime Minister

<sup>56</sup> Source: Ministry for the Environment, 2001, EIE Web Page

For the last six years, SASTP operations have been the responsibility of a private contractor. This contractor was partially responsible for the upgrading the Plant during the period 1996-1998.

The WSC is currently in the process of identifying a solution to an aggravating problem that has for several years inhibited the treated effluent produced at the SASTP from reaching the desired quality levels due to the high conductivity levels in the treated sewage.

The SASTP has the capacity to treat approximately 20 per cent of the total wastewater produced in Malta. The remainder is disposed untreated at Wied Ghammieq. The frequent rupture of the 716m long submarine pipeline implies that un-diffused sewage is discharged at a distance much closer to the shore than actually intended (EPD 1999).

In Gozo, 90% of total wastewater is discharged through a submarine outfall at Ras il-Hobz.

## 7. FINANCE AND INVESTMENT

During 2003 – 2004 the Water Services Corporation made a loss of Lm 8,569,048 which is subsidised through a contribution made by the Government.<sup>57</sup>

### Government Subvention

One of the main financial targets of the WSC is to reduce its reliance on government finances. The government subvention to the WSC to subsidise the price of water this year totalled Lm8,569,048. This is the lowest amount throughout the history of WSC. Figure 6 provides a graphical view of the government subvention. For the financial year ending 2004 we are expecting to further reduce this subvention.

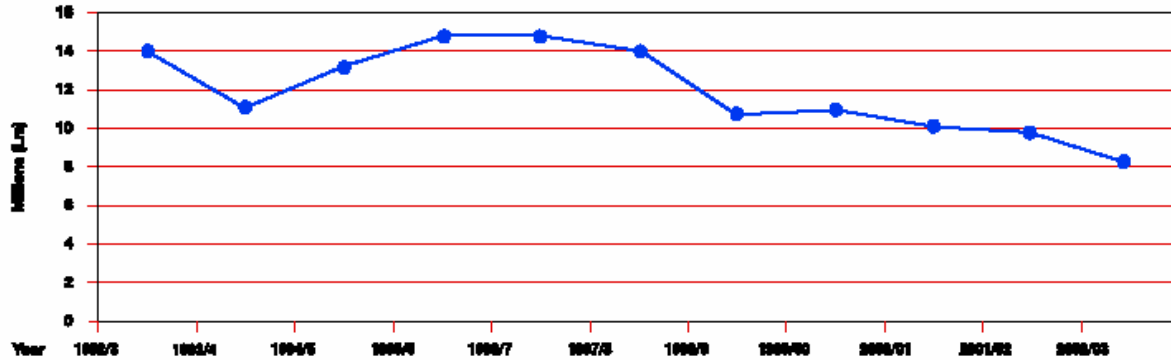


FIGURE 6: Government Subvention

### 7.1. Cost Reduction<sup>58</sup>

The WSC's key corporate objective for 2003 was to achieve overall cost effectiveness in all our operations. All production and support units worked continuously to operate in a cost-effective manner and at the same time reduce costs.

<sup>57</sup> Source: Water Services Corporation - Annual Report 2004 - Financial Statements – WSC Web Page

<sup>58</sup> Source: Water Services Corporation - Annual Report 2004 - Financial Statements – WSC Web Page

## 8. TARIFFS

The “Water Supply and Sewerage Services Regulations, 2004” defines the following regarding fees and tariff structure:

“The water supplier or sewerage services operator shall pay licence fees to the Authority, including fees to be paid on the grant of the licence and licence renewal fees on an annual basis.”

“In the case of water supplied through a public water distribution network or in the case of provision of sewerage services using the public sewage collection system, any water supplier or sewerage services operator shall provide the services in accordance with tariffs and subsidies as approved by the Authority, or if not so established or approved, the water supplier or sewerage services operator shall provide the services in accordance with the tariffs and subsidies in force prior to the Act and saved under article 36 of the Act.”

Provided that the water supplier or sewerage services operator shall keep accounts for services where, in the opinion of the Authority, no effective market competition exists separately from accounts for other activities, in any form or consolidation as directed by the Authority, with the objective of avoiding cross-subsidisation or distortion of competition.

“The Authority may impose tariff structures or mechanisms if necessary to reach objectives of national interest such as consumer protection, fair competition and securing public service obligations taking into account any directions that the Minister may give.”

- **Tariffs for supply of water intended for potable use**

Tariffs for water intended for potable uses are regulated by regulation 12 of the Water Supply Regulations. These tariffs came into force following the publication of legal notice 58 of 1999.

The reference charge for water supplied by WSC is Lm 1.10 per m<sup>3</sup>. Preferential tariffs are however available for certain uses and certain steps in the quantity used. Some preferential rates are below the cost of water production and distribution. The overall result of various tariffs applied to different users is that there is a cross-subsidization of water across various economic sectors.<sup>59</sup>

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<sup>59</sup> Source: A water policy for the future, Malta Resources Authority, March 2004

Summary of charges:

Type of Consumer	Meter rent	Consumption charge	
<b>Domestic</b>	Lm4	0 - 11m <sup>3</sup> /person > 11m <sup>3</sup> /person	16c5/m <sup>3</sup> 110c/m <sup>3</sup>
<b>Social Assistance</b>	Free	0 - 5.5m <sup>3</sup> /person - 11m <sup>3</sup> /person > 11m <sup>3</sup> /person	Free 16c5/m <sup>3</sup> 110c/m <sup>3</sup>
<b>Agriculture and agrofoods</b>	Lm8	0 - 2270m <sup>3</sup> >2270m <sup>3</sup>	18c/m <sup>3</sup> 35c/m <sup>3</sup>
<b>Personal health use in field</b>	Lm4	0 -5m <sup>3</sup> >5m <sup>3</sup>	22.5c/m <sup>3</sup> 60c/m <sup>3</sup>
<b>Industrial</b>	Lm8		85c/m <sup>3</sup>
<b>Food and beverage</b>	Lm8		60c/m <sup>3</sup>
<b>Tourist Flats</b>	Lm8	0 - 84m <sup>3</sup> > 84m <sup>3</sup>	75c/m <sup>3</sup> Lm1.10/m <sup>3</sup>
<b>Hotels</b>	Lm8	0 - 14m <sup>3</sup> /bed >14m <sup>3</sup> /bed	90c/m <sup>3</sup> Lm1.10/m <sup>3</sup>
<b>Laundry</b>	Lm8	0 - 2270m <sup>3</sup> > 2270m <sup>3</sup>	75c/m <sup>3</sup> Lm1.10/m <sup>3</sup>
<b>Sea Craft</b>	Lm8		Lm1.10/m <sup>3</sup>
<b>Government</b>	Lm8		Lm1.10/m <sup>3</sup>
<b>Boat-house, Garden, Garages</b>	Lm4	0 - 10m <sup>3</sup> >10m <sup>3</sup>	85c/m <sup>3</sup> Lm1.10/m <sup>3</sup>
<b>Non-commercial</b>	Lm4	0-57m <sup>3</sup> >57m <sup>3</sup>	Free 35c/m <sup>3</sup>
<b>Commercial and other</b>	Lm8	0 - 57m <sup>3</sup> >57m <sup>3</sup>	50c/m <sup>3</sup> Lm1.1/m <sup>3</sup>

The “social assistance” band is applicable for persons who, irrespective of their age,

- are neither employed nor self-employed; and
- form a single or two person family; and
- are in receipt of an income which entitles them to such assistance.

Applications may be obtained from the Director of Social Security.

These rates are also applicable for philanthropic organisations.

60

### 8.1. WSC Billing System<sup>61</sup>

Since 2005 the billing system changed. With the new system customers will receive a bill every two months based on estimates worked on the actual consumption of the previous year. Every third bill received will be based on actual readings, which will adjust the difference between actual consumption and the earlier estimates.

<sup>60</sup> Source: Malta Resource Authority -Water Tariffs – MRA Web Page

<sup>61</sup> Source: News - Water Services Corporation – WSC Web Page

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