



# FINAL REPORT

## *Stakeholder Interviews*

# TECHNEAU

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## **Title**

TECHNEAU WA 6  
Report: Stakeholder Interviews

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# Contents

Contents .....	4
<b>1 Introduction.....</b>	<b>6</b>
1.1 Aims .....	6
1.2 Approach .....	6
1.2.1 Case Study Selection .....	6
1.2.2 Interviewees .....	8
1.2.3 Nature of Interviews .....	10
1.3 Scope and Limitations.....	11
<b>2 Case Study One: Limassol, Cyprus .....</b>	<b>12</b>
2.1 Introduction.....	12
2.1.1 General facts about Cyprus .....	12
2.1.2 Cyprus urban water supply .....	12
2.1.3 Limassol drinking water supply.....	13
2.1.4 Stakeholders .....	13
2.2 Findings .....	14
2.2.1 Water Sector Issues.....	14
2.2.2 Consumer Issues.....	16
2.2.3 Engagement and Interaction .....	21
2.3 Summary of Findings for Case Study One.....	25
<b>3 Case Study Two: Gothenburg, Sweden.....</b>	<b>26</b>
3.1 Introduction.....	26
3.1.1 General facts about Sweden .....	26
3.1.2 Urban water supply in Sweden .....	26
3.1.3 Gothenburg drinking water supply .....	27
3.1.4 Stakeholders .....	28
3.2 Findings .....	29
3.2.1 Water Sector Issues.....	29
3.2.2 Consumer Issues.....	29
3.2.3 Engagement and Interaction .....	35
3.3 Summary of Findings for Case Study Two .....	38
<b>4 Case Study Three: Accra, Ghana.....</b>	<b>40</b>
4.1 Introduction.....	40
4.1.1 General facts about Ghana .....	40
4.1.2 Ghana urban water supply.....	40
4.1.3 Accra drinking water supply .....	41
4.1.4 Stakeholders .....	42
4.2 Findings .....	43
4.2.1 Water Sector Issues.....	43
4.2.2 Consumer Issues.....	46
4.2.3 Engagement and Interaction .....	50
4.3 Summary of Findings for Case Study Three.....	56
<b>5 Case Study Four: South-East England .....</b>	<b>58</b>
5.1 Introduction.....	58
5.1.1 General facts about South-East England .....	58
5.1.2 South-East drinking water supply .....	58
5.1.3 Stakeholders .....	59
5.2 Findings .....	60

5.2.1 Water Sector Issues.....	60
5.2.2 Consumer Issues.....	61
5.2.3 Engagement and Interaction.....	68
5.3 Summary of Findings for Case Study Five.....	76
<b>6 Case Study Five: Amsterdam, the Netherlands.....</b>	<b>78</b>
6.1 Introduction.....	78
6.1.1 General facts about the Netherlands.....	78
6.1.2 Dutch drinking water supply.....	79
6.1.3 Amsterdam drinking water supply.....	80
6.1.4 Stakeholders.....	82
6.2 Findings.....	83
6.2.1 Water Sector Issues.....	83
6.2.2 Consumer Issues.....	84
6.2.3 Engagement and Interaction.....	89
6.3 Summary of Findings for Case Study Five.....	95
<b>7 Case Study Six: Lisbon, Portugal.....</b>	<b>97</b>
7.1 Introduction.....	97
7.1.1 General facts about Portugal.....	97
7.1.2 Lisbon drinking water supply.....	97
7.1.3 Stakeholders.....	98
7.2 Findings.....	98
7.2.1 Water Sector Issues.....	99
7.2.2 Consumer Issues.....	99
7.2.3 Engagement and Interaction.....	108
7.3 Summary of Findings for Case Study Six.....	112
<b>8 Case Study Seven: Riga, Latvia.....</b>	<b>113</b>
8.1 Introduction.....	113
8.1.1 General facts about Latvia.....	113
8.1.2 Urban water supply characteristics.....	114
8.1.3 Riga urban water supply.....	114
8.1.4 Water quality issues in Riga.....	115
8.1.5 Stakeholders.....	115
8.2 Findings.....	116
8.2.1 Water Sector Issues.....	116
8.2.2 Consumer Issues.....	119
8.2.3 Engagement and Interaction.....	124
8.3 Summary of Findings for Case Study Seven.....	128
<b>9 Overview and Conclusions.....</b>	<b>130</b>
9.1 Overview.....	130
9.2 How Do Stakeholders View Consumers?.....	130
9.3 How Do Stakeholders View the Behaviour of Consumers?.....	133
9.4 How Do Stakeholders Know What Consumer Views Are?.....	135
9.5 Models of Engaging with Consumers.....	136
9.6 How is Trust and Confidence Represented by Stakeholders?.....	137
9.7 Future Directions.....	140
<b>10 References.....</b>	<b>141</b>

# **1 Introduction**

## **1.1 Aims**

This report forms deliverables 6.1.6 and 6.2.6 reporting on stakeholder interviews conducted during the summer of 2007. This report provides the rationale for the interviews and the key findings from stakeholder and end-user interviews held within our seven case study sites.

The purpose of this study was to investigate stakeholders' understandings and views about the consumer issues within the drinking water sector. The study was designed to explore stakeholders' perceptions of the key consumer related issues within the sector and to investigate their processes of engagement with consumers, particularly with reference to interactions with consumers and the underlying organisational principles that drive communication and regulatory practices. The study also explored the ways in which stakeholders view, relate to and collaborate with other (consumer oriented) organisations operating within the drinking water sector.

Given the broad consumer focus of Work Area 6 (WA6), an additional aim of the interviews was to inform and guide the next phase of the project – that is, to identify those issues of concern to end users and stakeholders that should be researched further in the focus group and survey studies that are to be conducted later on in the TECHNEAU project.

## **1.2 Approach**

Prior to selecting stakeholders, the first phase in our approach was the selection of case study sites.

### **1.2.1 Case Study Selection**

In selecting sites the global aim was to select sites where the nature of the water supply, the regulatory arrangements and the problems facing the industry differed considerably. We wanted to sample widely differing supply contexts thus criteria for case study selection resulted from ongoing desktop reviews in conjunction with collaboration with members of WA's 1 and 4 regarding key issues and indicators within the water sector. Sites were selected on the basis of a number of criteria and four distinct scenarios that vary in management structure, water resource challenges, and capital stock value and consumer behaviour were used to characterize the case study sites (see Figure 1).

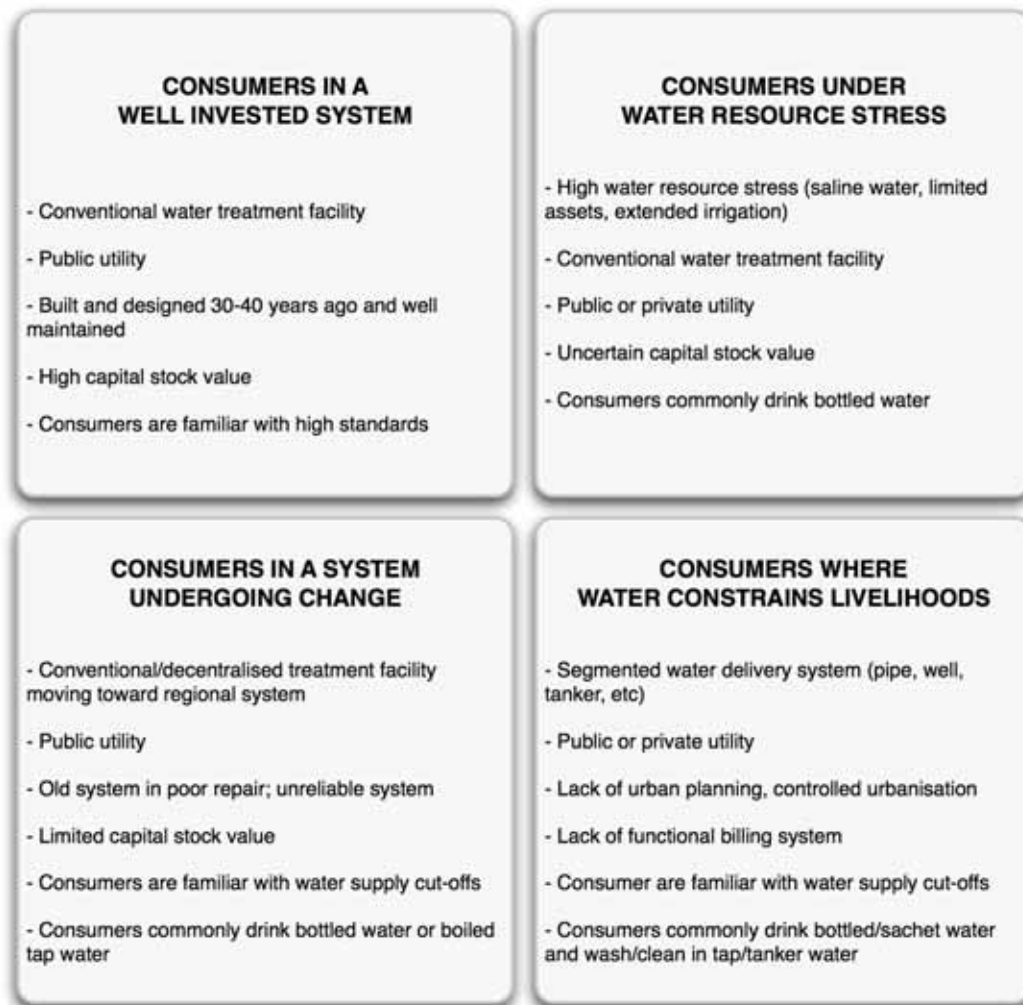


Figure 1: Case Study Scenarios

1. *Consumers in a well invested system* refers to cases where the current water supply functions well and people are satisfied with the management of their water as far as can be inferred from levels of complaints and existing survey data. The taste and quality of the water is considered good and people mainly drink tap water. In this case the treatment and water delivery infrastructure is well invested and maintained by a public utility that strives to keep abreast of the continuous required maintenance of pipes. Challenges ahead in the well invested system include handling new microbial contaminants and securing the system based on identified risks (such as climate change and unexpected incidents/accidents), reducing chlorination by implementing membrane filtration in the treatment process and implementing the EU Water Framework Directive in terms of integrated water management. While not implying that such systems are beyond improvement those sites falling within this category can be thought of as a benchmark for others to aspire to.

2. *Consumers in a system undergoing change* refers to cases where the water system is going through substantial change, or as an emerging conventional system. Large investments are being made to expand the system in size and quality to meet consumer and regulatory demands, possibly going from decentralized systems

toward a regional/centralized system. Consumers are familiar with delivery cut-offs and water quality deficiencies. Such cases could be either a private or public utility and an urban or peri-urban area.

3. *Consumers under water resource stress* refers to cases where water resources are limited and under stress, creating added challenges for water management and the supply system. In such cases, technologies for treatment of saline source waters may be on the agenda to secure future water supply. Extended irrigation and/or industrial consumption compete with drinking-water production and methods such as rainwater harvesting and wastewater recycling for drinking-water production are possible future scenarios. Drinking bottled water is a common practice and water restrictions for consumers are usual.

4. *Consumers where water constrains livelihoods* refers to cases where consumers need to put valuable time and effort in getting drinking-water from a tanker service, shared standpipe, well or river. Some may have their own household tap but water cut-offs are frequent and waterborne disease is common due to poor water quality and/or post-tap domestic hygiene practices. The current pipe-borne infrastructure for water supply is limited and the supply may be segmented. Large investments and proper planning and management in the water sector are required. Development is needed urgently, driven by uncontrolled internal migration and urbanisation.

In addition to populating the four scenarios, case studies sites were also selected on the basis of data availability and end-user expression of interest. This resulted in 7 case study sites.

case study scenarios	site
Consumers in a well invested system	<b>Gothenburg, Sweden Amsterdam, The Netherlands South East England Lisbon, Portugal</b>
Consumer in a system undergoing change	<b>Riga, Latvia</b>
Consumers under water resource stress	<b>Limassol, Cyprus</b>
Consumers where water constrains livelihoods	<b>Accra, Ghana</b>

Table 1: Case Study Sites

### 1.2.2 Interviewees

Stakeholders from organisations that had key relationships with consumers were asked to participate in interviews for each of the case study sites. In each site various organisations were contacted; water suppliers, regulators, policy makers, those involved in consumer relations in water companies, and consumer groups that operate in the water sector. Interviewees were then selected in order to provide a



variety of these stakeholder perspectives and on the basis of their expressions of interest and availability.

The following table provides an overview of the organisations that participated in this study.

study site	type of organisation	interviewees	organisation
Cyprus	Water Supplier	2	Water Board of Nicosia
Cyprus	Water Supplier	1	Water Board of Limassol
Cyprus	Regulator/Supplier	2	Water Development Department
Cyprus	NGO	1	Cyprus Consumer Association
Cyprus	NGO	1	UNDP - ACT, Action for Cooperation and Trust
Gothenburg, Sweden	Regulator	1	Gothenburg Environmental Board
Gothenburg, Sweden	Water Utility	1	Gothenburg Water (the operator)
Gothenburg, Sweden	Water Supplier	2	Dept of Sustainable Water & Waste Management
Gothenburg, Sweden	Consumer Organisation	1	Consumer Guidance Office
Uppsala, Sweden	Regulator	2	National Food Administration
Accra, Ghana	Water Supplier/Grantor		Ghana Water Company Ltd (GWC)
Accra, Ghana	Water Supplier/Contractor	4	Aqua Vitens Rands Ltd on behalf of GWC
Accra, Ghana	NGO	1	Consumers Association of Ghana
Accra, Ghana	Regulator	2	Public Utilities Regulatory Commission
Accra, Ghana	NGO	2	WaterAid
South-East England	Regulator	1	Drinking Water Inspectorate
South-East England	Regulator	2	Ofwat
South-East England	Consumer Body	2	Consumer Council for Water
South-East England	NGO	1	National Consumer Council
South-East England	Water Supplier	1	Southern Water
Amsterdam, Netherlands	Consumer Organisation	1	Waterbond
Amsterdam, Netherlands	Regulator	1	VROM
Amsterdam, Netherlands	Consumer Organisation	1	Consumentenbond
Amsterdam, Netherlands	Water Companies' Assoc	1	VEWIN
Amsterdam, Netherlands	Advisory Body	1	RIVM
Amsterdam, Netherlands	Water Supplier	1	Waternet
Lisbon, Portugal	Regulator	1	IRAR
Lisbon, Portugal	Water Distribution Company	1	Aguas de Portugal
Lisbon, Portugal	Consumer Body	1	DECO
Lisbon, Portugal	Water Supplier	2	EPAL
Lisbon, Portugal	Environmental Organisation	1	Quercus
Lisbon, Portugal	Industrial Representative Body	1	APDA
Riga, Latvia	Water Supplier	1	Riga Water Company
Riga, Latvia	Consumer Organisation	1	Latvian Association of Water and Gas consumers
Riga, Latvia	NGO	1	Baltijas Vides Forums
Riga, Latvia	Regulator	1	Riga City Public Utility Regulator
Riga, Latvia	Regulator	1	Public Health Agency, Ministry of Health
Riga, Latvia	Regulator	1	Dept. of Investment, Ministry of Environment

Table 2: Participating Organisations for the Case Study Sites

For each of the seven case study sites 6-8 interviews were conducted. In some cases, more than one representative from an organisation participated in the study, in order to reflect their differing roles and responsibilities within those organisations, for example, water company/board representatives, consumer association members, regulators, and industrial body representatives.

### 1.2.3 Nature of Interviews

Based on our previous desktop reviews, a generic interview protocol was devised in order to identify interviewees' understandings of the following issues within each case study site:

#### Consumer related water industry issues

- a) The issues and challenges facing the drinking water sector that will have implications for consumers
- b) What drinking water related issues are most important to consumers, and why (e.g. preferences and priorities)
- c) Whether consumers have any grounds for concern about their drinking water supply
  - whether there is any discrepancy between what they think consumers are concerned about versus what they think consumers should be concerned about
  - details about any specific incidents which have served to affect relations between consumer and stakeholder
- d) What drinking water issues are planned within the next 5 to 15 years
  - how consumers will be expected to react to these challenges, and why
- e) What drinking water issues are going to be most important to consumers in 20 years time (and beyond)
  - how consumers will react to these issues and why
- f) Whether consumer use of bottled water is regarded as an issue for the drinking water industry
  - suggested reasons why consumers choose bottled water over tap water

#### Engagement with consumers

- a) Appraisal of the relationship between the stakeholder/organisation and the consumer
  - details of how this relationship evolved
  - how they think consumers view their organisation
- b) Reasons why consumers initiate contact with the organisation
  - details about the range of opportunities available for consumers to initiate contact
  - details about how consumer contacts are handled
  - whether there are any perceived communication problems between the organisation and consumers
  - whether there are any specific areas where they would like to involve consumers but are not currently doing so
- c) How the organisation initiates contact with consumer
  - details about the processes through which the organisation initiates contact with consumers
  - whether these processes are evaluated
- d) How the Water Framework Directive is being addressed by the organisation, especially with regard to encouraging public participation

- e) Whether the organisation is, or has been engaged in consumer research and monitoring
  - what is the underlying basis for their beliefs about consumers
  - details about types of research conducted by, or on behalf of the organisation
  - how the results are fed back into the framework of the organisation

#### Relations with other stakeholders

- a) How stakeholders interact with other relevant stakeholders in the drinking water sector, and whether this is regarded as a challenging or rewarding process
- b) How they would like to see their relations with other stakeholder develop in the future

The interviews were carried out between May and October, 2007.

With the exception of Cyprus all interviews were conducted in the interviewee's native or official language, digitally recorded, and later transcribed and translated into English. Where possible we have tried not to make alterations to the quotes in order not to impose our interpretations on what people have said. In some cases either the translation process or the use of English by the speaker may not be entirely clear so we have entered text in brackets ([ ]) to clarify the meaning. We hope that where this has been necessary we have not altered the intended meaning of the speaker.

### **1.3 Scope and Limitations**

This report will present findings from Cyprus, Sweden, Ghana, South-East England, the Netherlands, Portugal and Riga. For the purpose of this report, the analysis will focus upon stakeholders' understandings and perceptions of consumer related issues and engagement with consumers.

## 2 Case Study One: Limassol, Cyprus

### 2.1 Introduction

#### 2.1.1 General Facts about Cyprus

Cyprus is the largest island in the Eastern Mediterranean and covers an area of 9251 km<sup>2</sup> of which 1733 km<sup>2</sup> is forested. The Troodos mountain range occupies one third of the island and affects all aspects of life on the island. In 1960 Cyprus became independent of Britain as the Republic of Cyprus. Cyprus has 1,004,000 inhabitants (in 2006) with more than two-thirds of the population being urban. Health standards are high. Between 1960 and 1973 Cyprus achieved a standard of living higher than most of its neighbours. This progress was substantially assisted by various agencies of the United Nations (UN), the World Bank and the International Monetary Fund in the form of loans for specific development projects, including urban water supply and sanitation systems. The free-enterprise economy is mainly based on agriculture and trade (Encyclopædia Britannica, 2007).

<b>Fact and figures</b>	<b>Cyprus</b>
Government	Constitutional republic Independence from the United Kingdom in 1960
Accession to the European Union	1 May 2004
Area	
- Total	9 251 km <sup>2</sup>
- Water	Nominal
Population	855 000 (Greek Cypriot )
Population Density	90 /km <sup>2</sup>
GDP (PPP) Per capita	\$31,053
Human Development Index	0.903
Capital	Nicosia

Table 2.1: Facts and Figures of Cyprus

The climate is Mediterranean, characterized by hot, dry summers from May to September and rainy, somewhat unpredictable winters from November to March. Precipitation records of the last 100 years have indicated a 15% decrease in the mean annual precipitation. The inter-annual variation in precipitation is considerable with below average rainfall that has affected the annual water resources of the island quite significantly (Constantinou, 2002-2003).

#### 2.1.2 Cyprus urban water supply

Over the past fifty years the water demand in Cyprus has been met through ground water. Over the decades there has been saline intrusion, decline of coastal aquifers, as well as deterioration of underground water storage space. Furthermore, over-pumping has caused depletion of inland aquifers and increases in boron content. In addition, intensive agriculture, coupled with under irrigation and over-fertilization has increased nitrate contents, especially in coastal areas.

In light of these issues, and in order to increase water resources, the Government embarked upon various programs. Most significantly, the Cyprus Government signed contracts for the construction of two desalination plants on a BOOT basis and reverse osmosis with an annual production of 33 Mm<sup>3</sup>. An additional source of water is recycled water.

The total annual water demand and use in the government controlled area is estimated to be 266 Mm<sup>3</sup> with agriculture being the main user (70%) followed by domestic use (20%) tourism (5%) and industry (1.5%). The demand for domestic water supply for the year 2000 was estimated to be 67.5 Mm<sup>3</sup> of which 53.4 Mm<sup>3</sup> was for inhabitants and 14 .1 Mm<sup>3</sup> for tourism (Constantinou, 2002-2003).

### 2.1.3 Limassol drinking water supply

Limassol is the largest municipality in Cyprus, and after Nicosia is the second largest city on the island. The Water Board of Limassol is a semi-governmental non-profit organisation responsible for the supply of potable water to the greater area of Limassol. Bulk water is provided by the Water Development Department (WDD). The organisation, established in 1951, is self financed and the turnover of the water board is based on water revenues.

Facts and figures	Limassol
Raw water source:	Surface water
Water works:	Bulkwater provided from public treatment plant
Water supplier (private/public):	Water Board of Lemesos, public utility. Bulk water provided by Cyprus Water Development Department.
No water supplier employees:	46
Bulk water provided:	13 Mm <sup>3</sup>
Length of pipe network:	794 km
Water sales:	11 Mm <sup>3</sup>
Unaccounted for water:	18,98%
Number of consumers:	70 200
Water consumption:	219 litres per capita and day
Household/domestic consumption:	148 litres per capita and day

Table 2.2: Facts and figures of Limassol Water Supply System

### 2.1.4 Stakeholders

Representatives from the following organisations participated in this study:

#### Water Development Department

The Water Development Department (WDD), under the Ministry of Agriculture, Natural Resources and Environment, is in charge of all freshwater resources and the production of potable water through four public treatment plants (~ 50% of total) and two private desalination plants (~ 50% of total). Governmental incentives related to water and national water saving campaigns and the like are managed from WDD

in collaboration with local/regional water boards and community boards. The WDD provides bulk water to the Water Boards who operate domestic water supply locally. Water rates are set by the parliament.

The Ministry of Public Health is the main institution responsible for drinking water quality standards. Through their inspectorate division and governmental laboratory they perform audits and monitoring of local compliance to national standards. Drinking water quality monitoring is also carried out by the WDD at production plants and by the local/regional water boards in the distribution network.

### **Water Board of Nicosia and Water Board of Limassol**

Regional water boards such as Water Board of Nicosia and Water Board of Limassol are boards under the Ministry of Internal Affairs responsible for operating and managing the drinking water distribution at regional/local level. This includes collecting revenues, maintaining and expanding the network etc. Urban water consumers refer to their water board for requests or information.

### **Cyprus Consumer Association**

The Cyprus Consumer Association is a non-profit, non political, non governmental organisation that deals with all aspects of consumer rights, consumer legislation, consumer protection and consumer complaints. Its main objective is to be an advocate for consumer issues and to safeguard consumer rights in issues that affect the daily life. Consumer offices are located in Nicosia, Larnaca and Paphos. The association takes part in discussions with the parliament committee and represents the consumers of Cyprus in the European Consumer Consultative Group in Brussels. As members of the Consumers International, discussions are also held on a global level.

## **2.2 Findings**

### **2.2.1 Water Sector Issues**

#### **Water Shortages**

From the perspective of the water supplier, the major challenge within the water sector is water shortage. Water shortages were described as occurring in the past and the present and as being likely to occur in the future. Due to the geographical nature of Cyprus and low rainfall, the general outlook is that water demand outstrips supply and that there are interruptions to the supply.

Cyprus will face and is facing water shortage. And it is not a recent phenomenon this...the water sources [freshwater resources] of the island was and still is limited.  
WS 1

In recent years the demand has been increasing disproportional to the supply. So we end up in situations where we have years of low rainfall, of a minimum of rainfall where you know we cannot meet the basic demands. And therefore, you know, we ended up with water cuts, providing water to the consumers only a few hours per day. And of course this has a major impact on the lifestyle and on the standard of living.  
WS 1

It was also observed that shortages have been exacerbated by leakage problems.

[Leakage] is 20 % of the input of the water that goes in to the network. WS 3

Because of the lack of water we have the problem of quantity and we try to eliminate the leakage. WS 2

### **Desalination**

In response to water shortages, the government of Cyprus has constructed desalination plants.

Solutions you know are available, already the government of Cyprus have built two desalination plants, one in 1997 and the other one in 2001...which are basically used for supplying potable water to the main towns of *Nicosia* and *Larnaca* and to the area. Of course the plan is that more desalination plants will be constructed so that the main urban centres are independent of the weather phenomenon. In my view this is a solution which under the circumstances seems to be a reliable solution. It seems to be a logical solution. WS 1

However, the water supplier noted that desalination has not been viewed positively across the board, rather this has been a short-term solution and that an overhaul of the entire water management structure is needed in the long-term.

There are others who argue that well, this [desalination] is a panic solution in the sense that we need to apply proper water management in the sense of integrated fashion and take into consideration all the needs for water, evaluate those needs and see if there are other alternative solutions before we end up having more desalination plants. WS 1

The regulator also noted that although desalination has made some improvements, it has not necessarily provided an overriding solution to water shortages.

Things are a lot better due to the desalination plants. Most of the needs for *Nicosia* and *Larnaka* area are covered by a source which is independent of weather conditions. So things are better these days. But you could not say that we have solved the problem. R 2

Also, the consumer association representative noted concerns about the long-term ecological impacts of desalination.

The desalination plants is not the ideal solution in the sense that yes we are getting water, drinking water from the sea but we are creating a dead sea through these desalination plants so they have to take proper measures to send the too salty water in to the wide sea and not in the area so close to the coast. Because if it is too salty the fish would die and we would have a dead sea in the end where we have one of the best seas in the Mediterranean in Cyprus. CA 1

### **Tension between Users**

In addition, some tension was noted between different water users, such as the agriculture, industry, domestic and tourism sectors. It was noted that agricultural uses of water amount to 70% of the total.

There are great differences in the opinions as to how we should manage water on the island... and we have something like the rest 30% to industry, domestic, tourism. So the farmers, the agricultural people are lobbying and pushing all the time that they need this water. WS 1

Agriculture which is the case I believe all over the world, takes up a huge amount of water. Here on the island it takes about 70% of the total means. WS 1

Farming is the major user of water in Cyprus. More than 70% of the water is used by agriculture in Cyprus. So they are the major stakeholders of water in Cyprus. R 1

In terms of water conservation, it was observed that the agricultural sector itself may need to be restructured.

I do not think they are managing very well. Even though they have the best irrigation systems and all these things, I mean they are the major users and they are usually the most effected by water shortage. It is a very sensitive political issue. I mean, because they want them to still keep on working on land to avoid other problems... They need the water because they have all these fields that they are irrigating. I mean they have to come in with a new concept with irrigation I think. They should maybe consider to plant new plants that need less water. R 1

I think they should address the subject from a different view now. Because they have tried with irrigation systems now and managed to a very large degree to save water but I mean there is a limit. I mean they can not save as much because the farms are there and the plants are there. So they can not save more. I guess a shift to a different cultivation maybe they should consider. But this is my view. R 1

Indeed, other stakeholders stated that an overhaul of the water management framework is needed across Cyprus.

In my view there is lack of a comprehensive strategic plan. Because what has been happening I think now is a kind of a reactive process, and by reactive I mean that we are waiting for something to happen and then we do fire fighting. In my view we should have a proactive approach...we need to have a plan. We need to have strategy. We need to have a vision. We need to have goals in order to meet the vision. There are many scattered thoughts all over the place. WS 1

What we need to have is a comprehensive strategy, a plan that we will have to respect and that we will have to follow. This plan needs to be you know from a to b. I believe there is the need to establish an independent body. Name it what you like, whether water authority, whether water entity, whether I do not know, regulator. And this body will have the authority to deal with all the water matters. And basically to act proactively and have the legal backing to enforce their decisions. WS 1

From a regulatory viewpoint, the major challenge facing the water sector was management of resources.

It is the management of the resources. That it is the main concern of this department I think. And having scenarios for different situations, under drought conditions, we have these programs and the other aim of the department is to try to have enough quantities of water no matter what the rain falls are which means storing water. That is why we built all these big dams. And also the desalination plants. The third sector is reuse of treated effluent water which is used only for irrigation and not for domestic use. So managing the quantities of the water we have is a big effort. R 2

## **2.2.2 Consumer Issues**

### **Challenges**



When asked about the key consumer related issues, the water suppliers stated that their challenge was first and foremost concerned with quantity of water, and to a lesser extent by its quality.

I think in Cyprus because we have this problem with water shortage, I think the consumer is concerned about having enough water. That is the main problem we have and even our clients which are the intermediates between us and the people, they are worried about having enough water to give to the people. And all the phone calls we get, most of the time have to do about not having enough water. I think that the people in Cyprus are fairly happy or confident that we get good quality water. R 2

Water is an issue for the customers. Not only for their potable needs but because water is scarce in Cyprus due to the climate. WS 3

Our challenge is to provide a sufficient quantity of water in order to meet [citizens'] requirements. And secondly good quality. WS 3

It was noted that, prior to the introduction of desalination plants, both quantity and quality were considerably poorer.

There were water shortages until 2001, before the construction of the desalination plants. So during these years the water supply was not continuous, so each household received water some days a week. Apart from the problems of not getting the right amount of water for their needs there was the problem with the quality of water. WS 3

With regard to water quality issues, the general view was that consumers should be satisfied with the service they currently receive.

I believe that we supply a reasonable quality of water at a sufficient quantity and at a reasonable price. I am sure there will be exceptions. You know we are dealing with the network and I am sure that there will be people that have some sort of complaint whether that is taste, whether that is quantity, but on the whole I think the *citizens of Limassol* should be happy. WS 1

However, it was reiterated that, in serving the needs of the consumer, the major challenge for the supplier is quantity.

The big problem is if we have water to supply to them. It is our major problem. And as there are now some other villages outside *Nicosia* that want to join us [i.e. connect to the Nicosia pipe network] we have problem about them and the amount of water that we have. WS 2

### **Consumer Priorities**

Consumer priorities as defined by the water supplier, were quality, quantity and to some extent price.

Quality and quantity. If these aspects are met the customer does not make any complaints. WS 3

Quality, quantity and price...I do believe that if we refine those then our mission will be accomplished. And that is our mission, to satisfy the customer. And if they are satisfied that means that we are doing our job well. WS 1

It was also stated that, in essence there is a hierarchy of consumer needs, beginning with quality as the first priority, followed by quantity. It was stated that the supplier ought to acknowledge these priorities when managing the water supply.

Quality is number one as far as I can see on the customer's agenda and it is their prime priority. Once the quality is satisfied, we go a little bit along the lines of Maslow, the hierarchy of needs, you know, so here we have the first basic need which I believe is good quality. Then once we have satisfied the quality then comes quantity. They would not like to have water say like 12 hours a day. They want 24 hours. So when they have 24 hours then they want water also for their garden. And then they want water for their swimming pool. And so on. WS 1

[these drivers] should be the main driver for the water utility. WS 1

The price of water was designated to the bottom of the hierarchy of consumer needs.

... And at the end there comes the payment. So once we have good quality, sufficient quantity, then the customer would look into price. WS 1

Indeed, according to the water supplier, willingness to pay was *not* regarded as a key issue in Cyprus.

I feel that the consumers have never, never said to us that they are not willing to pay. But to pay what is reasonable, provided by two conditions, that they get water when they want, and as much as they want. WS 1

This viewpoint was also held by the regulator.

I cannot think about something that the general public in Cyprus would be worried about. If you want a good quality, I am not thinking about pricing because generally the water in Cyprus is not expensive. If you compare the bills in an average household in Cyprus, electricity, telephone and water, water is by far the cheapest. R 2

Willingness to pay in Cyprus was explained in terms of the nature of the water industry, particularly lack of competition, and effective regulation.

Because the system is such that [consumers] have accepted that we are the only providers of potable water, there is no competitor, so irrespective to whatever they do there is no way that things will change. And in our case we cannot change our water rates...So it is heavily regulated in that sense...However as a non profit organisation we have to set our rates so that we will cover our costs. And not to make a profit. So the public are protected in a sense. WS 1

Since we are working for the government the price is fixed. And we are not allowed to make profit out of it. Just cover our expenses and the maintenance of the system. So the price is very low. WS 2

### **Consumer Awareness**

Although it was observed that consumers are aware of water shortages, one water supplier felt that if the public were to be consulted about the matter, they would have a negative outlook about the failure of the government to respond the issue in an effective manner.

If you ask ordinary people on the road 'tell me about water' they are aware you know that we have a problem. I am sure they will have an opinion as to the possible solutions. And what I think you will get as an answer to the question is 'is the government doing enough?'. I think that maybe there you would get a negative answer. Enough is not done. Maybe this is because we do not have a strategy; maybe we are reacting to problems rather than to be proactive. WS 1

In the case of water conservation, the regulatory spokesperson did not think consumers were aware of how much water they consumed as part of their lifestyle.

I think, because they open their taps and it runs all the time, I do not think people realize that we have a problem of water amount, I mean of having the available amount that they need every day. R 1

I do not think many people have a feeling of how much running a full laundry, with their washing machine spends and how much if they run it half empty or compare even. Also the shower and the bath and these things. Maybe they need also some indication of how much water is wasted or that there are ways that you can conserve water without affecting your lifestyle. R 1

### **Future Issues**

Water shortages and water provision were seen as likely to remain the primary concern though the difference in drinking water quality (i.e. taste, odour etc) from the use of different raw water sources was also noted as an emerging issue by the water supplier.

The major issue is quality, which we need to be very careful of. Quality is the first thing the consumer wants once water is available....And going to desalination, there again it is not the best water that one can have, there is no substitute to spring water so we have to basically pay great attention to quality, it is something that you really should be in our long term plans. WS 1

Concerns were also raised about the environmental impact of desalination in the long term, given that it is an energy consuming process.

Even if we build these desalination plants, how far down the line are we going to go, because desalination needs energy. WS 1

It was not felt however, that the majority of consumers would be overly concerned about environmental issues.

I think there will be a reaction from certain sections of the consumer society who is sort of environmentally more aware of what is happening. However if you take the majority of people, what they really want is to have water to be able to maintain their standard of living and their lifestyle. WS 1

### **Consumer Reactions to Desalinated Water**

As for the issue of providing drinking water through desalination, the water supplier described consumer reactions as reluctant.

Reactions, well, of course they are very reluctant to use it. WS 1

Reasons for such reluctance included a general lack of information about water shortages, as well a general lack of inclusion of the public in the participatory sense.

They have not been properly informed about desalinated water. And by that I mean not whether it is good for you or bad for you, but why we ended up having to have desalinated water. And the fact that this water chemically is as good as natural water. Of course it cannot replace it in the sense of taste, you know natural water, but I think that in the absence of water this is the best alternative. So people were not really, you know, informed. They are, they have been and are now being kept away from these things. I am not quite sure about, you know, for the reasons why this is happening. I can guess public participation is something which really has been promoted very recently in our country and it has been promoted from the water framework directive. WS 1

From the consumer association's point of view, the main impact of desalination on the consumer is cost.

They will have to pay a higher price. It is a matter of cost. We are going to have more desalination plants. CA 1

However, as previously, the water supplier did not regard willingness to pay to be a key issue with regard to consumer acceptance of desalinated water.

In our situation here on the island, if we say to them 'right well we do not have enough water, you know it does not rain so we have to use desalinated water' they accept that. They will accept that. Because they see that it does not rain, they know that we have no other choice and if we prove to them also that we are not misusing water, we are not throwing water away, we are not losing water. Then I do not think that they will be opposing paying higher price you know for water. Which possibly with the desalination we will sort of pay higher. WS 1

In addition, in the past one stakeholder observed some NIMBYism<sup>1</sup>, noting the opposition of some residents to the nearby location of desalination plants, although it would clearly be of benefit to them and others in the long term.

They are thinking of constructing another [desalination plant] now. They planned to construct one three years ago but there were people arguing about it. Because unfortunately even though they lived with their problem, the lack of water, they lived without water, imagine having water two or three days a week....But when we got to the decision and constructed the desalination plant, people wanted a plant but 'not in my village or on my property', somebody says. WS 2

Other grounds for public opposition to desalination noted by the stakeholders included ecological and environmental concern.

[people were afraid that] the salt water will become saltier [and thought the fish would die]. Also about noise coming out of the desalination plants. WS 2

However, it was also acknowledged that, owing to the recent drought, people now have a reasonable understanding as to the benefits of desalination, thus indicating a sway in levels of public acceptance.

Now this year, because we have a very serious drought problem. *A very serious drought problem.* And because they have seen that all the fears they had about the

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<sup>1</sup> Not In My Backyard

desalination plants were unnecessary and they were not true. Because now we have something, they know and they see what impact it has on the environment. And they see on the other hand the problem of not having water. So I think they are going to construct another one. WS 2

### **Consumption of Bottled Water**

In general terms consumption of bottled water was not regarded as a challenging issue for the water industry in Cyprus.

It would be [an issue] if we were profit oriented. Probably. WS 2

Some stakeholders thought that demand for bottled water was mainly driven by tourism and that locals themselves consume mainly tap water.

It is not competing with tap water. [Bottled water] provides service to the people when they are visiting. If you go down to the shopping mall in *Nicosia* and you need to find water, you do not look for a tap but bottled water. And if you go on holiday in a sea resort in Cyprus you do not go to find tapped water you go to provide some bottles of water with you in order to satisfy your needs. They are parallel organisations. WS 3

### **2.2.3 Engagement and Interaction**

Generally, relationships with consumers were regarded as being positive.

[our relationship with consumers] is very good. They are very pleased with us, there are only a few complaints. I have been here four years and there have been just two people complaining feeling strongly about it. But mainly they are very pleased. WS 2

When asked about the basis of these positive relationships, there was a suggestion that trust has evolved over time. It was also stated that the fact that the water supplier is a non-profit making organisation with few ulterior motives other than to serve the consumer needs has also aided relations.

Maybe it is because we are not a profit making oriented organisation. We are working for the government and our main object is to serve the people. We want our consumers to be pleased at any cost and unfortunately, or fortunately, money is not that important for us. And the other thing is that it is our way of seeing things. But mainly it is that we try to eliminate all complaints at any cost. Because we are here to serve the people. WS 2

### **One-Way Interaction**

Amongst the water suppliers, the dominant model of consumer engagement in Cyprus is one-way interaction, to the extent that when stakeholders were asked what channels of communication were in place for consumers to make contact with their water suppliers, responses were oriented around the idea that if consumers need to, they will telephone the organisation.

We understand their needs. In order to come in touch with us, he may have a problem, so he complains and this complaint is dealt with correctly he may provide a letter and require a formal answer. There are various ways. WS 3

We inform them about how to contact the water board in the newspapers. There are telephone numbers. Each person, each citizen, can easily find the telephone number according to the town they are living in they can contact their water board. WS 3

Most existing forms of communication therefore consists of information bulletins provided with bills.

Through the bills we try to inform them about the water scarcity in order to avoid the water waste. WS 3

It was noted by some stakeholders that in cultural terms, it is not in the nature of Cypriots to complain. It was stated that even in instances where consumers call their water supplier to inform them of interruptions to their water supply, consumers are not overly reactive.

This is the good thing about Cypriots. Most of them do not even complain. And the others are OK, if you just tell them that it will take time to fix it and you will have water in the afternoon or even tomorrow, they are OK, they do not react. It is just in our way of thinking. WS 2

It is the Mediterranean way of living your life. Leave it as it comes....Most of us think that we just wait and we always get water soon. And this is because usually this is how it is. When they have problems, we fix it and they will get water soon. The only problem was about seven, ten years ago and we did not have water. And even then there were no people complaining. WS 2

### **Evaluation and Monitoring**

Some differences were noted in how water suppliers engaged with consumers. One stated that, payment related issues aside, they have very few interactions with consumers. With regard to evaluation and monitoring consumer views, one water supplier stated that they administer questionnaires from time to time to monitor consumer views about water shortages and conserving water in the home.

Other stakeholders who were not currently engaged in any evaluation processes did acknowledge that surveys might be useful to ascertain consumer views.

Maybe it would be nice if we would send a questionnaire every now and then...to find out their opinion. And because from what I told you, people are very easy going. Maybe using a questionnaire would be nice because even though you have people who are not saying anything, maybe you force them to say something. WS 2

When prompted about what types of issues they would like to explore, responses included basic needs such as the supply and quality of water, as well as restrictions and rates.

### **Public Information Campaigns: Water Conservation**

The regulators discussed how they were in the initial stages of developing information campaigns, particularly in the case of water conservation. For example, a television slot is broadcast in order to inform consumers about the value of water

and the merits of conserving water. However, this campaign is more reactive rather proactive, given the current situation regarding water shortages.

The concept is trying to get into [consumers'] conscience. Is that water is essential in life and that we have to take care of it. So I think that this is what the concept of doing it is and why we are doing the film also. So [the narrator in the slot] says that there is 70% water, that we depend on water, there is no life without water, and she concludes like this, so it means water, take water in your hands and it is like a phrase. R 1

It was acknowledged that this was the first campaign of its nature and that further research would be devised to evaluate the efficacy of such campaigns.

I want to see how efficient this thing is but we have not yet set down something that can give us a measure. I do not think that we can see a significant reduction of water like use at the domestic part...But I think [we will develop] some questionnaires and set up some meetings to see whether this is possible. I will also try to see how other people did it. And I will try to get some guidelines and directions of how to measure the effect of the campaign. R 1

Other campaigns discussed by the regulator included visits to schools.

Every year this is done through the schools, so we go to the schools and make lectures to the children about water conservation and the importance of water in our lives and how much we need to be careful with its use. R 1

These types of educational based campaigns involving children were noted as being more effective than television advertising.

I think we get more response than with TV ads...because you know that children usually are more susceptible to this type of information and they are more sensitive. And especially if something comes from a grown up at school. Usually they have the time to sit down and think of what may happen without water and it is like that so they usually come to their house and they urge their mothers and fathers not to waste water and tell them to do that or this to protect water. So I think that through the schools we are making a good point to the people about water conservation. R 1

I think the best way of valuing this resource is to think about it as something that we maybe will not have next year. Maybe our children will not have it. R 2

The regulator believed that the key to changing behaviour resides in a change in cultural practices.

Maybe something broader, something like kind of a culture, a culture of conserving water, of protecting the environment. R 1

It was acknowledged that alarmist tactics were not necessarily the best way forward, rather it was believed that a slow steady campaign would be more fruitful in the longer term.

We are trying to get through that road and not trying to get people scared that we will fine them for spending water or for wasting it. But if we do not take care of it, we are going to die of thirst. OK, this is also a way to do it, I think, and it can work. But maybe by the next two years it is going to rain and we are not going to have problems with available water. And people tend to forget. But if we start to do it slower but

steadier an effort it will be more lasting. Especially with the children because they are going to bring these efforts into their houses and say that water is a valuable resource that we should protect. R 1

### **Water Conservation Initiatives**

The regulators are also engaged in incentive based initiatives designed to encourage more people to conserve water at household levels.

And there are a few programs which are subsidized by the government and these have to do directly with the consumer. It is a private bore hole in their garden which they can use for watering their plants. This is subsidized by the government directly to the consumer. And also if the bore hole is connected to the toilet flushing system, this is subsidized again, and there is a program which has to do with the grey water treatment and reusing this water for irrigating the gardens. R 2

We are planning to, we give some money out to people that want to put water conservation systems in their houses. .... So we sort of advertise this in a leaflet. So this leaflet is going to go to every house through their water bill. R 1

According to the regulators, these types of initiatives were said to have generated consumer interest.

This year the subsidy has gone up so there is more interest... There are more applications this year. R 2

### **Need for more Dialogue**

One water supplier felt that generally, although water shortage is an important issue across Cyprus, there is not enough dialogue about the subject. Allied to this, they observed that there are not enough strategies in place to inform people about the subject.

In my view it is a major issue and we need to discuss it regularly. You need, as I said, to have a strategy, you need to inform people. It is not that when you turn on the radio that you hear a commercial on water. I do not know, maybe organisations do not want to throw money down that road. WS 1

It was acknowledged by the water supplier that currently, other than sending information with bills, there are few two-way communication strategies in place.

There are no sorts of open channels of communication between our organisation and the customer apart from leaflets you know which we send with the bills from time to time informing them of either that we have sort of shortage of water and that they should conserve water or that you know that there is a need to increase the cost of water. WS 1

Also, this stakeholder discussed the implementation of two-way engagement or public participation, suggesting that it would not be a very valuable exercise. This perception lead to the view that one-way forms of communication through the provision of information would be more favourable.

In my view, I would be against of holding if you like a one to one participation with the public...let us say that we choose randomly, people you know in order to sort of inform them of what you are doing. I would not think that it would be productive....Perhaps every four months we can have leaflets in there to inform them



of our activities and about what we are doing, maybe about water rates. So there is if you like a broad understanding of what we are doing. So we are not something strange to the public. We are not just a bill. And secondly I believe we should publish more of our activities through TV campaigns and radio. WS 1

Whilst recognizing the merits of public participation, the water supplier discussed how it had not been actively involved in many strategies.

For the moment...our water board has not entered into any public participation debate or anything like that. Our only experience is this to take part in a couple of seminars and workshops organized by the water development department. And they felt that in their view the water development department deals you know with the development of natural resources, and with the management in the broadest sense of the water on the island. So they felt in their case that public means the organisations, buy water from them, like farmers, water boards, community boards, so they have not actually gone down to the level of the citizen. The average person you know in the street. WS 1

[the water development department] are the department responsible under the Water Framework Directive which has become national legislation, to have sort of, these meetings you know with the public. And as I said for them public means the organisations. So I am not sure whether, if they were not forced by the legislation to have this, whether they would go that road. WS 1

### **2.3 Summary of Findings for Case Study One**

The main water concern in Cyprus is water resource scarcity: this formed the hub for stakeholder reflections in this study. The scarcity situation has worsened throughout the years due to over exploiting of raw water resources and, judging from the interviews, stakeholders do not expect the scarcity situation to improve, since climate change, less rainfall and saline intrusion is well documented

Managing water resources in a sustainable and efficient manner, between regions and customer groups (i.e. domestic, agriculture, industry), is thus the main challenge for the sector. Although all participants in this study point out water scarcity as the main issue, the plan on how to tackle the problem remains unresolved. Furthermore, establishing desalination plants seems to be the main activity in practice to combat water scarcity. The water supplier representatives felt that the problem is not being taken seriously enough, nor is it being addressed by the necessary perspectives by the authorities. Suppliers thus call for proper coordination of measures through a declared comprehensive strategy that stakeholders are seen to follow. The suggested reasons for the lack of a common plan include uncertainty within the sector on where the overall responsibility lies, as well as a need to re-organise the water sector.

Amongst the interviewed stakeholders there is a perception that consumers are satisfied with the water supply service and have trust and confidence in the supplier. The consumer concerns mentioned by interviewees were quality, quantity, cost and reliability. From the supplier's perspective water quality was the main consumer priority. Bottled water usage is common but it is not thought to be a problem for the water sector *per se*.

Water resource scarcity as a consumer issue was seen as mainly a function of agricultural water consumption (i.e. through irrigation) as opposed to domestic water use in households. The scarcity issue however affects households in that there is prohibition on using tap water in a wasteful manner (i.e. watering lawns, washing pavements etc.) and incentives are in place to encourage tap water saving installations in households (i.e. grey-water reuse, borehole digging etc.). The regulator engages with consumers through strategies that aim to shift consumer behaviour through increased awareness. This also includes information provision via media campaigns and schools, military camps etc. Information is perceived most effective when conducted during times of water rationing. The most common channel for information between the water sector and consumers is leaflets sent out together with bills. The stakeholders indicated that current communication and interaction levels are insufficient in order to create proper consumer awareness about the problem and welcome improvements in this area.

## 3 Case Study Two: Gothenburg, Sweden

### 3.1 Introduction

#### 3.1.1 General facts about Sweden

Sweden occupies the greater part of the Scandinavian Peninsula, with an area of 449 964 km<sup>2</sup>. The land slopes from the high mountains along the Norwegian frontier eastward to the Baltic Sea and the landscape features many lakes. Local government is allocated to the *kommuner* (municipalities), each with an elected assembly and the right to levy income taxes and to charge fees for various services including the water supply and sanitation (Encyclopædia Britannica, 2007).

Fact and figures	Sweden
Government	Constitutional monarchy
Accession to the European Union	January 1, 1995
Area	
- Total	449 964 km <sup>2</sup>
- Water	8.7 % of total area
Population	91 428 174
Population Density	20 /km <sup>2</sup>
GDP (PPP) Per capita	\$32,200
Human Development Index	0.951
Capital	Stockholm
Freshwater availability	20 000 m <sup>3</sup> /cap

Table 3.1: Facts and figures of Sweden

#### 3.1.2 Urban water supply in Sweden

By law, water supply and sanitation coverage is a municipal responsibility in Sweden. Today, Sweden has about 2000 water works and 67000 km water pipes operated by about 6000 people working in the water sector (Lannerstad, 2002).

The manufacturing industry uses more than 60% of the total 2 631 Mm<sup>3</sup> fresh water volume (Statistiska Central Byrån, 2005). About 20% (561 Mm<sup>3</sup>) is used by households. The majority of the water, 70 %, is produced from surface water. Groundwater amounts to 18% (Statistiska Central Byrån, 2005).

Today, all large Swedish municipalities cover all their costs for water and wastewater services through water revenue. Traditionally the municipalities have water supply and sewage disposal as part of the local administration. In the 1990s a new trend to establish limited companies, multi-utility or sole water companies, started and today 38 of 289 municipalities have organized in this form. Two municipalities have entirely or partly private ownership.

Efficient wastewater treatment, good drinking water quality, low water charges and a reliable supply make the Swedish water sector more or less invisible to the public. People take a functioning water and sanitation service for granted and, thus, consumer-oriented water organisations do not exist. Strong self-government and municipal responsibility also makes the issue uninteresting for national politicians (Lannerstad, 2002).

### 3.1.3 Gothenburg drinking water supply

Gothenburg is located on the west coast of Sweden. Water supply is managed by the municipality. The Department of Sustainable Water and Waste Management is responsible for the overarching planning and billing while Göteborg Water is the operating utility in charge of the supply service. Decisions are made by their respective political boards.

Gothenburg is supplied water by surface water from the Göta River. The 2000 litres/s of raw water abstracted represents 0.5 % of the total flow in the river. The water supply system is designed for an average consumption of 600 litres per person a day, based on calculations made in the 1960s of future water consumption. This is much higher than 185 litres that the average person in Göteborg is using today.

The people of Göteborg pay less than 1 öre per litre of water used. The cost of sewage treatment is included in this price. A family living in a private house pays around 375€ (3600 SEK) for water and sewage each year. The water tariff was raised by 4% on the 1<sup>st</sup> of January 2007, hence an average household will pay around 0,05€ (0,40 SEK) more for water per day.

<b>Facts and figures</b>	<b>Göteborg (Sweden)</b>
Raw water source:	100% surface water , extracted from the Göta Älv river.
Water works:	Two water works supply the area; Lackarebäck and Alelyckan
Water supplier (private/public):	Göteborg Water , public utility
No water supplier employees:	264
Water production:	58,9 Mm <sup>3</sup>

Length of pipe network:	1711 km
Water sales:	48,5 Mm <sup>3</sup>
Unaccounted for water:	21%
Number of consumers:	484 993
Water consumption:	316 litres per capita and day
Household/domestic consumption:	175 litres per capita and day

Table 3.2: Facts and figures of Gothenburg

### 3.1.4 Stakeholders

Representatives from the following organisations participated in this study:

#### **Department of Sustainable Water and Waste Management**

Water, wastewater and solid waste handling is managed by this body. Decisions are made by the political board while the department operates the management i.e. prepares decisions and puts them in practice. As for drinking water, the department is in charge of planning, billing (revenue collection) and procurements within the sector. It also informs the public through campaigns and other information channels.

#### **Gothenburg Water**

Gothenburg Water, supervised by the political board of Gothenburg Water, is the operator for drinking water supply, responsible for operation and maintenance of the two waterworks in Gothenburg, including the full pipe network.

#### **National Food Administration**

In Sweden drinking water is regarded as synonymous with food. The National Food Administration (NFA) with its Food Control Department is responsible for the regulation (Food Regulation Division), monitoring (Food Inspection Division) and safety from when the raw water enters the waterworks until it reaches the consumers tap. At a national level, this includes development and adoption of new regulations, monitoring rule of law, water quality inspection, emergency management and so on. The operative administration is on the local level (municipality). In Gothenburg the Department of Environment, supervised by its political board, is the inspectorate body at the local level.

#### **Consumer Guidance Office**

The Consumer Guidance Office in Gothenburg is a service provided by the municipality to the consumers of Gothenburg and its surrounding areas. Their mission is to provide information to the public, carry out awareness building campaigns and answer to individual questions and requests on issues concerning the rights and obligations of consumers. This includes serving as support through a complaint process or in a decision related to several options (energy supply etc).

## **3.2 Findings**

### **3.2.1 Water Sector Issues**

From the perspective of the water supplier, the key water sector related issues involve strategic planning for the future, involving investments in the water networks, and pipe-replacement schemes.

We have a need for more investments in our water networks and water works, which we have identified in, amongst other things, risk analysis; and long-term 50-year plans, that highlight an increasing need to change the pipe network; and re-building and development of the water processes at the water works to cope with future demands and risks. So, of course we need more money coming in for water and sewage operations in Gothenburg. WS 1

We also need to increase the rate at which replacements are made in the pipe network. We don't really have an old network today – the median age is 40 years – but, if you look back in time at the rate of aging, then the network will gradually age. So with the replacement level we have today, we think that the pipes will keep for 200 years, but we don't believe that. So in the coming 50 years, we have to increase the rate at which we replace water pipe, and even more when it comes to sewage pipes; so that we can gradually have a replacement rate that is equal to the technical lifespan that we think the pipe network has – 100 to 150 years. WS 1

Preserving water quality was regarded as the main challenge for the water sector, through general maintenance and upkeep of the system.

The big challenge is to guarantee the quality of drinking water....To do this, we need to increase the capacity of both water works; and the municipalities have agreed on this and there is a project in the pipe-line for the coming 10 years, which will cost about 100 million. We will increase the capacity of the water works; as well as the processes to give us more opportunity to deal with bacteria and viruses, through a so-called ultra-filter, which has been tested here on a small scale. WS 1

It was noted by the water supplier that systemic changes should not affect consumers.

The users are not supposed to notice when we make changes in the operations. That is our job. So, if we are re-building a water works – we have done fairly major work to the water works during the last 10 years; we have undertaken fairly many projects during which we have closed the water works for several hours. But it is our job to plan these projects so well that the users don't notice anything – we can't take any risks. We have managed this so far, touch wood. So re-building should not affect the consumer. But, the user can be affected if the decision to undertake the project is taken too late and we don't get the money. In this case things can happen that wouldn't have happened if we had re-built. That is why we want to do some of these projects – so we don't face the identified risks. WS 1

### **3.2.2 Consumer Issues**

On the whole, the stakeholder interviews demonstrated that there are few critical consumer related issues. Few interviewees perceived consumers as having cause for concern or worry, providing they have a reliable product and service. From the

perspective of the water suppliers and the consumer association, the provision of such a service was viewed as a necessity.

I don't think [consumers] think about it [water] that much. I think you think about it when there is something wrong. Of course water should flow when you turn on the tap; and if it doesn't then you think about it. I think this is the case; and so it should be – it should be a natural part of every day life. WS 1

Water should be available, it should flow from the tap and in your shower, it should be of high quality, you shouldn't need to boil it before you drink it and it shouldn't taste weird. CA 1

A common theme amongst stakeholders was that, providing drinking water meets their expectations, it tends to be taken for granted by consumers, unless something is 'wrong' per se.

As long as the quality of the water is OK – it tastes OK, looks OK, doesn't have a bad odour and comes out of the tap – people don't think about the fact that water exists. But, people react as soon as something happens with the water. So, they take it for granted – maybe that's the problem. It should just be there; and they don't think about the fact that a lot is required before it gets to the tap. R 1

However, the fact that consumers take water for granted was viewed as somewhat negatively by one regulator, who felt consumers may not necessarily value the service provision that they receive.

Water is just supposed to exist - nothing should happen; people don't think it's very interesting; it's just supposed to exist. That's the way it is, and it's a shame. They take it for granted. I don't think they realise that there is a lot of work behind the scenes to ensure that everybody gets it. R 2

I think that it relates to interest – they have never thought about it. The water comes, they are happy and they pay their bill. R 2

### **Priorities and Preferences**

When prompted, stakeholders felt that the key priority for consumers was good water quality.

The water should be aesthetically good – it shouldn't be coloured, it shouldn't have an odour, it should taste good. R 2

People want clean, clear, fresh, tasty tap water, that they can use to cook with, drinking and shower in. That is what people want. R 2

Some interviewees equated the provision of good quality drinking water with the notion of trust.

I think that the most important issue for the user is to the right quality of drinking water. The quality of drinking water is always the issue that is prioritised first....But if the quality isn't good and people became ill – I think this is the issue that has most impact on the level of trust. And it is this issue that we prioritise. WS 1

The consumer association also linked high quality drinking water with trust, whilst concurrently suggesting that consumers may take the service they receive for granted.

Water should be of high quality; one should be able to trust the water supplier has checked the water so it isn't polluted. Having trust in the tap water in your house or apartment, is an individual consumer question. So quality is important. We know that the water in Gothenburg is of high quality, but I don't know if people in general know this. CA 1

Aside from quality of water, access and safety were also noted as consumer priorities.

That it is available and that the supplier systems are safe and don't break, or that the taps are suddenly dry. I think this is an important issue. CA 1

Cost was not regarded as a key priority for consumers, although one water supplier suggested that any potential rise in costs would lead to some degree of consumer concern.

We also know that the price of water services is an issue that people engage in. I know, for example, that there was a public outcry when we announced the fact that we were going to increase the rates a few years ago. At the time, I made a comparison - in the same way that house owners do - between various municipalities; and we found that the price of water in Gothenburg was about average - it was neither extremely expensive or extremely cheap. But then we were criticised by angry consumers for highlighting this. The price had increased and they wanted an explanation. So there are people who engage in this issue and ask which costs are necessary; and they try to check these prices and say: no it isn't allowed to cost this much, it is too expensive. So this aspect is important to some consumers. WS 2

However, other stakeholders noted that, in comparison to other sectors, cost was not regarded as a key issue for consumers.

I think people have come to realise that water constitutes a very small percentage of household costs. Energy has come to dominate; and even other costs. WS 1

### **Consumer Concerns**

There was a high degree of consensus amongst the stakeholders that consumers are not particularly worried about their drinking water. This lack of concern was attributed to high levels of trust.

They trust it. And my experience is that people worry more about other foods. R 1

I don't think people in Sweden worry about [water]. No....water is almost like air, it just exists. I don't think that either the quality of access is - we take it for granted. CA 1

It was also stated that, in comparison to other sectors, consumers are not concerned about water related issues.

Water supply is a bit like an instrument that plays itself - people don't worry about it; they turn on their tap and water flows. We notice this when we meet our customer groups or panels, in which there are 10 to 15 property owners. But when we meet, water questions take up only about 0.1 per cent of the time - there aren't any issues that they are worried about or that they wish to discuss. On the other hand, they can discuss refuse issues - recycling stations, why refuse isn't collected - for hours. The water sector has been relatively free of such discussion. WS 2

Things have flowed smoothly, without any major problems; and therefore, water isn't an issue that they are worried or think about. If you asked people in the streets what they worry about today, I think that getting drinking water would come 75<sup>th</sup> after climate change etc. WS 2

There were some general reflections about how consumers perceive their water, that they focus more upon aesthetic issues, which may give grounds for concern. However, these were viewed as isolated examples, and not necessarily indicative of the broader population.

I think people almost worry about [aesthetic issues] more – they worry more about things they can see, such as if the water is brown because it has iron in, than they do about things they can't see, like bacteria. Unfortunately I think this is the case. R 1

A few people worry about the fact that it smells of chlorine, or that there has been radiation in the water. But, I can't say that they are general concerns. Some are not health trends – sometimes it says something, you know, they read about it ...R 2

### **Knowledge and Awareness**

One water supplier discussed that there was probably more work to be undertaken regarding consumer knowledge about water sources.

Even if I haven't seen any evidence of it, there is apparently still a group of relatively educated people who think that the water that comes from Gryaab goes directly back to the pipes... There is apparently such a misconception, not only among the low-educated sectors, which maybe don't have a good understanding of language and technology. But apparently, according to those who work with information, there are even well educated sectors which have this misconception. But I haven't seen any evidence of this. This isn't good and we should work more to improve the knowledge. WS 2

Also, one regulatory body felt that, although most consumers are aware about the source of their water, they are not particularly aware of the processes involved in water provision.

I think many people in Gothenburg know that it comes from Göta Älv, but they don't have that much knowledge about the process and things like that. R 2

### **Bottled Water Consumption**

From the water suppliers' perspective, the fact that consumers choose to drink bottled water is somewhat perplexing and they had been engaged in initiatives to communicate the merits of tap water. Also, there was some indication that the water supplier representative assumed that consumption of bottled water equates to lack of trust in tap water.

[People] unfortunately buy and drink a lot of bottled drinking water, which costs 1000 Crowns more. It is a riddle to us. We have worked quite a lot together with the Eco-Water Cycle office to give out water bottles – we did it last summer during the European Championships, to try and send out the message that tap water is both tasty and cheap; and that there is no reason to buy bottles as this destroys the environment. But at the same time it is a bit contradictory – in the questionnaires they say that they have a high level of trust in our drinking water system, but



obviously that not everybody does. And then there are probably many people who buy bottled water because you can get it carbonated and flavoured – I think so. WS 1

There are people, I think, who think that bottled water is better – you think that tap water isn't good and therefore you buy bottled water. This can have an effect the water – there is less trust in our system, just because they think bottled water is better. It's not logical, but... WS 2

Other stakeholders felt that flavouring and carbonated options were appealing to consumers.

I think that people want carbonated water; and it is after all relatively cheap. It is too cheap, in relation to the environmental damage it contributes to. But that is my personal opinion. It shouldn't be possible to buy one litre of carbonated and flavoured water from France in Sweden, that doesn't cost more than milk. People don't react – you think: it tastes nice, it is carbonated and it doesn't cost that much. But in relation to tap water, it is very expensive. I think that this is how people think. WS 1

Of course it is tempting to go into [shop] and buy a bottle. It's not that strange. And they have products that we don't have – we don't have lemon flavoured and Mondays and orange flavoured tap water on Tuesdays. That would have been a good idea, but we don't have it. In that respect it is difficult to compete. But as I said, it's not a commercial problem. WS 2

From the regulatory perspective, the view was that there had been a consumer backlash against bottled water, on the grounds of environmental issues. Here, the view was that Swedish people value their tap water.

In Sweden, people expect to be able to drink the water. And I think that we value that in Sweden, even if bottled water has increased – although it seems as though the trend has turned... And the fact that they are even producing bottles with the name tap water now. People are becoming so conscious of the environment, that they don't want to buy water that has been transported. Rather, they want to drink water from the tap. And I think that is deeply rooted in Nordic people. R 1

On the whole, consumption of bottled water was not viewed as a threat to the water industry. Rather, the water company exhibited more concern about the environmental impact of bottled water consumption, and communicating this message to consumers.

It's nothing to do with us being afraid of losing income. Rather, it's more of a general environmental issue that we want to engage in given that we produce and supply water. So we want to tell users that: it tastes good, drink it; and contribute to a healthier environment. It is more this side. WS 1

It is not commercial. It is an environmental policy – we need to try to reduce the stress on the environment, such as transporting bottles from France to Sweden. We can't stop people from buying bottled water, but we can raise the question and get people to think about it; they don't always need to buy bottled water. WS 2

However, although it was noted that the bottled water industry is not necessarily a threat to the water sector, it was acknowledged that some water companies are responding to the issue by launching their own bottled water products.

I don't think that it is a problem for the water sector. A number of water works are starting to bottle and sell their own water, to be a bit trendy. R 1

## Trust

Trust was a recurrent theme within the stakeholder interviews and was regarded as a key priority for consumers, aside from the actual properties of water itself.

Amongst the water suppliers, it was noted that although the water system is secure, it was a challenge to maintain levels of trust.

Trust is a high priority...Ensuring that consumers feel safe must be the most important issue. I think this will be more important in the future. You never know, the problems might increase in the future; and one should be prepared to deal with such problems. So there is a lot of work to do in this area. I call it: selling a sense of security. It's a classic marketing phrase. WS 2

The challenge for us is to create this sense [of trust], even though the system is secure. WS 2

The regulatory body felt that levels of trust between consumers and authorities were positive.

I think, that within drinking water, there is a lot of trust in the authorities in terms of their responsibility for competence and development. R 1

It was also acknowledged by the water supplier that there are high levels of trust between themselves and consumers. However, it was also noted that trust takes time to develop, yet it can be eroded quite quickly.

Our vision is to maintain a high level of trust in our operations among the users. From the user surveys that we have done over the last 15 years – the last of which have been undertaken by the Eco-Water Cycle office – we have been able to construe that the level of trust the users in Gothenburg have in us, is quite high today. But that can collapse quite quickly; and then it takes a long time to re-build it. WS 1

I think the drinking water quality has the biggest impact on users' trust; and if you have recurrent problems with the quality then I think you lose the trust, quicker than if the water is turned off. WS 1

Quality is important of course; and as we said earlier the sense of security – we have been spared from diseases or serious shut-downs on the system due to severe pollution. But on the other hand, this can have the consequence that we aren't equipped to deal with this type of situations. If this happens, the media changes their angle. Everything has worked well and then something happens, which causes people's trust to diminish. The media would manipulate such a problem, which would worsen the situation – the trust diminishes quicker than it would do otherwise. This situation could arise. So, we need to work more with the issue of trust...It's possible that we don't do enough in this area and that we don't work enough with journalists, for example, to sell this sense of security. WS 2

The water suppliers felt that these positive levels of trust were manifested in strategic long-term planning and risk management on their behalf, coupled with few adverse incidents.

I think we have got there partly because, in my opinion, this operation has always been very serious and taken our job very seriously. We have always worked with long-term plans; we have always thought about the risks – risk analysis is now very popular I think it is a very good instrument; but I think we have been thinking about risk for very many years, which is probably why we have – touch wood – not had any big incidents. And then it works. WS 1

On average people in Gothenburg go without water once every 10 years – most people can't even remember when they were last without water. I think we have had one serious incident in the last 20 years, which affected drinking water quality. And I think this is most important – we have long-term plans and think about the risks. WS 1

One regulatory body felt that consumers feel assured, that even when incidents do occur, their needs are met.

Occasionally something happens and a water tanker is sent out, which people can come and get water from. But generally, I think that people feel assured. It would be if a problem arose – we in the whole of Sweden have been spared from that. Of course incidents happen, but they are usually sorted out, which is lucky. R 2

The consumer association also attributed levels of trust to few incidents and good levels of service provision.

I think it is because it has always been this way – [water] has always been available and there haven't been any problems. Those problems that arise – now and then there are problems in the pipes and leaks – are delivery related. But, there haven't been any big problems or problems that people know about. So it's just the way it has been. I think so. CA 1

The water supplier felt that their positive attitude towards consumers was also beneficial in fostering a sense of trust.

Another reason, I think, is that we take the consumers and users very seriously. I am sure everybody does, but in my experience – we have registered every complaint since 1985 in a database; we handle the complaints – we have many routines, manuals; and quite a strict code of practice when it comes to complaints. I think this has made all the co-workers very dedicated. Many of our co-workers who meet the users; and I think how we treat the user on the phone or in a letter, is the most important factor. We have co-workers who are very good at doing this; and I think maybe that it is thanks to this. WS 1

However, the water supplier also demonstrated concern with respect to maintaining levels of trust, particularly in the light of financial constraints.

I feel quite worried that the trust will be undermined, if we don't increase our income to do the work that needs to be done. It will be good to do the investments that need to be done, but at the moment we don't have enough money. WS 1

### **3.2.3 Engagement and Interaction**

#### **Communication and the Role of Trust**

The role of trust also featured in stakeholders' reflections about the importance of communication. For example, the water supplier discussed consumers who had encountered flooding. Here, it was stated that levels of trust were dependent upon clear communication and a degree of responsiveness on behalf of the company.

[Trust is developed] by informing – knowledge and information. There is no doubt more work to be done on this, to ensure a trust in the system. WS 2

There are always some people [who are] are very vulnerable. And unfortunately, it is usually when your house is on land that is too low; or it can happen if we have a blockage in our system. But the rain affects those people who on low land; and unfortunately, this means that they can have reoccurring problems. Their level of trust is much more dependent on how we go about communicating with them, and how we take care of the technical measures and how fast we undertake these measures – this is to say our direct service to them. That probably has a big impact. WS 1

I think this is a huge challenge for us; and we need to work on making sure that house owner has as few negative thoughts as possible – he should feel that he is satisfied with our help, that we listen to him and we really do what we can to ensure that it doesn't happen again. This is very important. Many people have been really frustrated, because getting sewage water in your basement is obviously a personal catastrophe. Ensuring that we have the energy to understand every property owner and their problems is a big challenge for us; and we have spent a lot of money on doing this. But it is difficult; and everybody is different - some people are angry and scream, others are upset and cry, and others are very understanding and rational. So it is a psychological challenge to take look after them. And we have to do this, I think. WS 1

The supplier also discussed the importance of clear communication on the onset of other incidents, and the importance of preserving levels of trust during such events. Referring to one particular bacteriological incident in the 1990's, the representative discussed how the organisation learned from the event, and changed their communication strategy accordingly.

I think it is important to have plans for this type of incident, because if you can get through such an incident by having clear information at an early stage, then you can probably get through it without losing people's trust. WS 1

We learnt a lot from the serious incident, so we have changed some information routines as a result – so we report any such incident, with the aim of teaching ourselves what we can do so it doesn't happen again, and how can we handle it better if it does happen again...I think that we handled it quite well. And maybe we were lucky that no one became ill etc. WS 1

On a more operational level, the water supplier discussed how informing consumers about interruptions to supply is routine work for them. Information is disseminated through the internet, notices, and the media.

We inform our users and customers when, for example, we are going to turn off the water to repair a leak. We have about one per day, so that's about 300 a year. So, this is part of our daily work; and we always put information up on the website – we have done this for the last 2 years – and we plan when we will turn it off and put up notices....We put up notices in stairwells to say that: the water will be turned off between these hours. And if it affects large areas, then we inform through the radio – we can't put up notices if 1 000 properties are going to be affected. So it works quite well. WS 1

The regulatory viewpoint with respect to communication was centred around the notion of transparency, that it is their duty to inform consumers about their activities.

It is a general trend that the authorities have to be more transparent; and we work for the consumers, so we have to tell them what we do. R 1

Above all, I think that the principle of publicity is imprinted in us, so we don't need to hide things. It is a positive thing. R 1

### **One-Way and Two-Way Information Provision**

One water supplier distinguished between consumers, by referring to them as 'users' and 'customers'.

Customers pay bills; and users use our system. There are about 600 000 users in Gothenburg and around 50 000 consumers. WS 2

Some users are customers and others aren't. Everybody drinks tap water, but some pay us for it. The difference is simply economic. WS 2

This stakeholder explained how they have different communication strategies for 'users' and 'customers'.

We have a relationship and a broad contact with the customers, but not with the users....I would describe it as a one-way contact – we send information. WS 2

We have a two-way relationship with the customers, because we have quite a lot of contact with them – meter reading, ownership change, etc. But with regards to the users, our only contact is through the information we send out. But we have a lot of contact with the consumers with regards to drinking water; regarding installations and bills. WS 2

### **Complaints**

According to the stakeholders, it was felt that should consumer complaints arise consumers are generally satisfied with the response they receive from the company.

In general we experience that they are very positive. We get a lot of calls in the operational department and it is very seldom that – it can happen that I get a call or email from someone who thinks they have been badly treated. That has happened twice in 2 years, since I came here; and I don't think this is very much given all the calls we get every day. So I think that they are usually very satisfied with the service they get. WS 1

Complaints were regarded as a key aspect of monitoring consumer satisfaction, and general safeguarding of the system. Complaints are also closely regulated.

We also look at how [water companies] deal with complaints, to make sure that they are taking consumers seriously, since they have a responsibility to the consumers....And this is a way for them to find out if something has happened, for example some kind of contamination – if they get a lot of complaints from one area, then they know that something has happened. So it is important for the producer. R 1

### **Evaluation and Monitoring**

Complaints aside, the water supplier described how they also had contact with consumers through surveys.

Attitude surveys are another form of contact we have with them...Once a year we ask a sample of house owners – usually about 400 out of 40 000. In this we ask them if they are satisfied with the quality of the drinking water and whether the service is worth the money etc. So we systematically gather [information]. WS 2

One regulatory body stated that although they have fora in place for consumers to raise their views, the issue of drinking water is very rarely on the agenda, as compared to other products.

We do have one forum – we have a consumer panel that meets maybe, quarterly, or something like that. It is a group of people, who change now and then, but it is a relatively constant group of people. Our secretary general chairs the meetings, so it is ambitious. But, the questions have dominated are about food labelling; and maybe a few nutritional questions arise. R 1

### 3.3 Summary of Findings for Case Study Two

Urban water supply in Gothenburg is well invested and well functioning both in terms of the technical performance and the supply service. The water supplier operates in a consumer-orientated fashion and interviews show that they view their role as a service to the public, something they take very seriously. Transparency in decision making, a well informed public, consumer dialogue, satisfactory complaints and request handling etc. are regarded as priorities both for the supplier and regulator, and measures are in place to monitor and follow up on these targets.

The level of engagement with consumers is comparatively high and all interviewees thought that consumers have a strong sense of trust and confidence in the water supply, to the extent that they believe that issues related to water supply are taken for granted by the consumers. Bottled water consumption is not considered to be a challenge for the water sector issue *per se*. However, stakeholders perceive it to be an environmental issue of which they have the responsibility to act upon. Also, interviewees indicated that increased bottled water usage may be a threat to future generations' trust in the water supply system, should consumption by any chance increase to the extent that it becomes the common source of water intake. Consequently, the stakeholders are active in informing the public on the environmental impact of bottled water consumption.

The stakeholders felt that few consumers have concerns related to drinking water supply and it is the suppliers' standpoint that consumers should not *need* to have concern or feel worry. Hence, the fact that water supply is taken for granted is not regarded as a current problem for the sector, but rather is perceived as an indication that they are managing their role efficiently and properly, in line with consumer priorities and expectations i.e. safe water quality, reliable supply etc.

The interviewees stated that, from their perspective the key challenge for the water sector lies in ensuring that current levels of positive trust, performance and service are maintained in the long-term. Their stated concerns relate to infrastructure upgrading, proactive management and consumer engagement. Increased activities around the raw water source are affecting raw water quality negatively and the aging pipe network needs a higher replacement rate than of today. Also, since the city has been spared from major drinking water incidents throughout the years, the water sector's experience is currently limited in handling incidents and emergencies. The need for improved risk management was emphasised, linked with potential effects on the water system due to climate change.

There is a call for sufficient investments to be made. The fact that investments may increase water prices to consumers' is identified as an unjustified barrier for necessary political decisions to be made on time. The supplier also stressed the importance of an informed public, fostering consumer trust and confidence in the water sector.

# 4 Case Study Three: Accra, Ghana

## 4.1 Introduction

### 4.1.1 General facts about Ghana

Ghana, located in Sub-Saharan Africa, is a republic and member of the British Commonwealth of Nations. With plentiful natural resources, Ghana has twice the per capita output of other poorer countries in West Africa. Within the Sub-Saharan region Ghana is regarded as a stable country with good economic potential and a strong social capital base. It is also thought to be one of few countries in Sub-Saharan Africa that has a chance to meet the Millennium Development Goals (Bohman, 2006).

Ghana has an estimated population of about 23 million people. The official language is English, but up to 70 native languages are practised. Since 1970, Ghana has maintained an average annual growth rate above the world average. Around 42% live in urban areas. The capital, Accra, has a population of about 5 million (Encyclopædia Britannica, 2007).

The climate is tropical, including dry, hot and humid areas. Lake Volta, the world's largest artificial lake, extends through large portions of eastern Ghana.

<b>Fact and figures</b>	<b>Ghana</b>
Government	Constitutional republic Independence from the United Kingdom in 1957
Area	
- Total	238 534 km <sup>2</sup>
- Water	3,5 % of total area
Population	23 000 000
Population density	93 /km <sup>2</sup>
GDP (PPP) per capita	\$2,700
Human Development Index	0,532
Capital	Accra
Freshwater availability	3,03 m <sup>3</sup> /cap

Table 4.1: Facts and figures of Ghana

### 4.1.2 Ghana urban water supply

Similar to the urban water sector in many developing countries, there are serious constraints to providing adequate water for all urban residents. As of 2004, urban water supply coverage in Ghana was estimated at just 59%. However, in terms of fresh water resources Ghana is well equipped, with Lake Volta being one of the largest man-made lakes in the world. Hence, the water issue in Ghana is not about physical scarcity of freshwater but about production and distribution of potable water. Even those connected to the piped water system frequently suffer from cut offs when the capacity to deliver fails. This creates room for an informal water



market, which serves all those without access to public water services (Lundéhn and Owusu, 2006).

Ghana Water and Sewerage Corporation was established in 1965 under the Act of Parliament (Act 310) with the mission to provide, distribute, conserve and supply water in Ghana for public, domestic and industrial purposes, and to establish, operate and control a sewerage system. The Corporation operated between 1966 to 1<sup>st</sup> of July 1999 when the sewerage and water supply was separated and Ghana Water Company Limited (GWCL) was formed. At present GWCL runs 84 (2 not in use due to operational problems) urban water systems with an average daily output of about 570.000 m<sup>3</sup> per day. The total installed capacity is estimated to 670.000 m<sup>3</sup> per day. The estimated demand is 990.000 m<sup>3</sup> per day; this means that GWCL only distribute about 57% of what is needed. In the Millennium Development Goals (MDGs) it is stated that the coverage should reach 85% by the year 2015 (Lundéhn and Owusu, 2006).

For many years GWCL suffered serious problems with management, high levels of unaccounted for water, and a limited billing system. Accessibility of potable water to low-income and peri-urban consumers was problematic, whilst high rates of urbanisation added additional pressures upon the supplier. Between 1985 and 1995 the Government of Ghana thus tried to improve the management of the water company by donating \$200 million through donor support, but still there were few improvements in the water service. For example the non-revenue, unaccounted for water stayed at a level of more than 50%.

Subsequently, the Government of Ghana decided to enrol in Private Partnership Participation (PPP), and a management contract was signed. Before the Private Sector Participation (PSP) took place the water sector was re-structured. The World Bank advocated the re-structuring process, which meant the separation of rural and urban water distribution and also the separation of water and sewage treatment. The reasons for the rural water supply to be separated from the urban were that the rural areas were disadvantaged and it was also thought that the people living in the urban areas could pay more for their service. During the water sector reform the Water Resource Commission (WRC), the Public Utility Regulatory Commission (PURC) and the Environmental Protection Agency (EPA) were created. The World Bank gave a major grant in January 2005 which enabled large investments in the water sector and the government decided on PSP with a fixed management fee to the contractor. Since 2006 Aqua Vitens Rands Limited (AVRL) is contracted to operate and maintain the urban water supply in Ghana. AVRL is a joint venture with 100% of its' shares owned by two public companies; one in South Africa and one in The Netherlands, hence the partnership is better to be referred to as a Public-Public Partnership (Lundéhn and Owusu, 2006).

#### **4.1.3 Accra drinking water supply**

To a large extent, people residing in Accra and surrounding areas lack water pipe network connections or suffer from dry pipes and thus depend on water being delivered by water tanker services. Pipe-borne water is paid for by meter or by a fixed price according to tariffs. Shared water is from public taps but commonly taps

are run by individuals who store the tap water to secure supply when the pipes are dry, and they charge the consumer additional amounts. Water tankers and trucks loaded with sachet water are also common (Lundehn and Morrison, 2007).

Water source	% of population
Private water access	35.9
Access to shared water source	44.9
Access through water tanker service	7.3
Other (boreholes, rivers etc.)	11.8

Table 4.2: Accra water supply coverage

Accra is supplied with water from two sources; Densu River (Weija Water Works) and Volta River (Kpong Water Works). Surface water is the source of water for both the Weija and Kpong water works. Raw water quality in Weija is poor due to human activities that generate waste, with untreated sewage, fertilizer and pesticide runoff affecting the water quality. The quality of raw water from the Volta River is better due to two large dams that serve as sedimentation basins for the raw water. However, as the population in the surrounding villages continues to grow, the situation is likely to worsen both at Weija and Kpong in the future, with subsequent affects on water quality (Lundehn and Morrison, 2007).

#### 4.1.4 Stakeholders

Representatives from the following organisations participated in this study:

##### **Ghana Water Company Limited**

The ministry in charge of water sector policy formulation in Ghana is the Ministry of Works, Housing and Water Resources. For urban water, Ghana Water Company Limited (GMCL, also referred to as ‘the grantor’) is the asset holder while two private companies, Vitens International BV and Rands Water Services Pty operate in a joint venture, namely Aqua Viten Rands Limited (AVRL, also referred to as ‘the contractor’). AVRL were contracted for the management and supply of urban water in 2006. In AVRL, Rands are mainly responsible for surface water treatment, production and bulk water supply, whilst Vitens handle the distribution, reticulation and commercial management (Management Contract for Ghana urban water between Ghana Water Company Limited and Vitens Rand Water Services BV, Aqua Vitra Limited, 2005).

##### **Public Utilities Regulatory Commission**

Besides the Ministry and its sub divisions, the Public Utilities Regulatory Commission (PURC), established in 1997 as an independent body, is responsible for the regulation of tariffs and quality related matters on water and electricity. The aim of the PURC as a regulatory body is to balance the interests and needs of the service providers versus the needs of the customers (Bohman, 2006).

##### **Consumers Association of Ghana**

The Consumers Association of Ghana, established in 1991, is an independent consumer NGO with regional offices throughout the country and head office in Accra. Their mission is to advocate consumers' rights and be the voice of the consumer in various societal discussions, as well as assisting and informing both individuals and the general public in specific matters. Members consists of volunteers of various professions e.g. journalists, economists engineers, students etc. The number of active members ranges between 60 to 100.

### **WaterAid Ghana**

WaterAid, with headquarters in London, is one of many international NGO's operating in Ghana. Their overall mission is to overcome poverty by enabling the world's poorest people to gain access to safe water, sanitation and hygiene education. In April 2007 WaterAid Ghana launched its new five year country strategy in Accra outlining major strategic orientations of their country programme. Key shifts and additions to traditional core activities relate to the achievement of the UN Millennium Development Goals. Activities include education in schools, awareness building, water and sanitation mapping, data generation (on water and sanitation facilities and access to water sources and sanitation), drawing up local development plans and advocating for support from development partners and the government. WaterAid Ghana operate in seven out of ten regions covering both rural and urban areas.

## **4.2 Findings**

### **4.2.1 Water Sector Issues**

#### **Management**

Water supply management was mentioned by all stakeholders as a key challenge for the water sector in Accra. It was mentioned by interviewees that for years, the water supply management has lacked development, investments, resources and proper management to meet the basic needs of consumers. The importance of improved management and performance was recognized and stressed as a prerequisite for adequate supply and increased consumer satisfaction.

We find the difficult situation where you can see for years and years nothing has been invested so we see a lot of broken installations, no spare parts in place, actually no tools, no transport, too little staff across the retrenchment, for years not having had attention in relation to promotions or appraisals. So actually this time [i.e. the past 10 yrs] was spent on discussions for what shall we do with the company and in the meantime. WS 1

What do you do you expect in a company where for years there were mainly discussions – with what to do with the company? And everyone said, 'well, we don't know...in fact we can't do anything' and wait until a private firm moves in; and that took, I think, the last 4 or 5 years. WS 1

The major challenge I think in the contract is to.....to manage the business. The business is not managed before, so what we try to do is to start to manage the business. WS 2

I think management issues too, is also a problem, especially on the part of the utility. I think, they are having problems with management of the whole issue. Because

sometimes even customer-care – the way they respond to the consumers – that has also been a problem. And when that happens, it brings about a loss of confidence in the utility, I mean from the consumers perspective, you understand? R 1

The ideal situation is that you have a well performing utility, well resourced, viable, you know; and then also, with reasonably adequate resources and investments, and development of infrastructure and for operations and infrastructure – you know, the systems that are constructed. If you don't have these conditions, it is very, very difficult to provide any satisfactory service. WS 3

In the interviews with supplier representatives, much of the discussion about challenges revolved around the inception of the new management structure, including issues related to the process of change, state of the water system, and issues related to collaboration between the grantor and the contractor. It was evident from the interviews conducted that the recent water sector reform is still in its process of implementation. Stakeholders felt that the reform is bound to include problems along the way, and that advances can not be made overnight. However, frustrations were evident. For the supply operator, about two years (out of five) into the contract, the main challenge to tackle is still the issue of taking over of the task from the previous management.

Imagine...all of a sudden you have 10 French move in, pushing top management aside and saying as from now we decide what's going to happen here. What would happen to your management; what would happen to your staff? WS 1

So, not long ago ....we had to organise a retreat in the whole of the water region, between the granter and the operator, to smooth out certain issues for operation of the contract; issues which would not resolve themselves without elaborate efforts to do so. WS 3

The old management is still in the company so the people responsible for the company for the last ten years are still in the company...It is not easy to work together...the reason the World Bank asked to bring in operators was not for nothing...the situation in the company is not.... we have another approach and ...we like to work in another way than what they are doing for the last years....so that is not easy...WS 2

So if you talk about challenges – where to get the money to get everything up to standard again? Then when you have the money and spare parts and equipment – how to get the people motivated again to work on it. Just to name two business like challenges. WS 1

The supplier representatives articulated a distinction between the grantor and the contractor, however other stakeholders expressed unwillingness to make such division. The contractor felt that unreasonably high expectations were placed on the new management structure, that improvements will take years if not decades.

I don't want to talk about AVRL and Ghana Water, because Ghana Water Company is in charge of the water. How it does it, that's not my problem. It has decided to improve its management by having AVRL; that's fine. R 2

It's really quite a difficult job to start where we are and try to push things forward. And, that's what you see around it and there are very high expectations - oh, when the private operator moves in, then the water will flow. Yes, from what? So a bit deliberately, we try to make clear that we are in a very difficult situation; and people

should not expect improvements just like that. Um, it will take a lot of time, a lot of effort - and then I am talking indeed of not 5 years, but then 10 years comes first and 15 years comes first, before we are at a certain level to say: oh now, now we can talk business. WS 1

All the first discussions started 10 years ago when they wanted to sell the company - nobody interested; lease the company – nobody interested, because it's so in a bad situation. So before you have where we are now – on a situation where they can lease or sell – I think at least it takes 10 years, 15 years, why not. WS 1

And actually, the basic[s] of the management contract here is to bring ... the capacity of the existing systems back to design capacity and try to reduce the non-revenue water, which is about 50 per cent. WS 1

However, on a more positive note, it was observed both from the contractor and grantor, that improvements had been made since the inception of the new management structure, and their adoption of a grassroots approach.

Last year we spent a lot of energy on the senior management of the company, to learn them how to report, how to use ICT, and of course all the old stories from the past why things are not working to skip those stories and to start real discussions about the real reasons why things are not working .....the old thinking and...anyway that is where we spent a lot of energy last year. And this year we are trying to go on grassroots level in the company, to start really to see what happens on grassroots level in the company. WS 2

I like to think that the work culture has been positively influenced by the contract, the operation of the contract; I like to think. Where you have greater focus, greater dedication, people being more competent at what they do. That is my personal opinion that I see around; they look more business like. If you are working in an environment where everybody is serious and driven by objectives, the goal is to succeed and to work well; well you have no choice, you have to fit with them. WS 3

We are looking just for the common good; whatever emerges after all our experiences, it should be for the best interest of everyone. And I hope that commitment and everything goes into a maximum, to make it possible to make a good decision; to make a good decision, to progress without further divisions and conflicts and with certain standards and so on. WS 3

### **Cost Recovery**

On a more operational level, economic challenges were also discussed extensively. Unaccounted for water (also referred to as non-revenue water) was noted as a major issue. The stakeholders stated that in the past capital was not spent efficiently. However, with the shift in management the financial situation was improving.

The water company is...let us say fighting, they have a 45, 50 per cent loss of water, of what they trying to produce, which they can't account for. Because, add that to seepage through broken pipes or leaking pipes, or illegally connected for which no money is being paid. CA 1

I don't have exact figures, but there must be many having 50 per cent non-revenue water. WS 1

We have a target to reduce unaccounted for water by 5 per cent every year. WS 3

We have a customer record of 360 000 customers billed and around 200 000 unbilled customers. WS 2

Things have been improving in recent times - generally things have been improving – and I think cost recovery and so on is well, reasonably underway. WS 3

#### 4.2.2 Consumer Issues

Within the interviews, suppliers and regulatory stakeholders initially discussed consumer issues in a holistic manner in the light of changes within the sector, as opposed to overt references to consumer priorities, preferences, or concerns.

The bottom line is that the consumer wants to get water. You get my point? Yes. The consumer always wants to get water and most consumers don't care how they get it. So if I'm a consumer and you tell me that because government has been unable to secure funding, so that the water could be extended to meet me. Well the question I ask is: why haven't the government been able to secure the funding? R 1

For the consumer, things are not so green at this time...I'll say that things are not so green - you know, lots of investments are going on and in some of the big systems like Accra. Lots of systems are going on; and lots more continues to be done on systems, country-wide. WS 3

#### Consumer Priorities

When prompted about consumer issues, the consumers association made clear reference to poor tap water quality, health concerns and lack of regulation. Consumer priorities mentioned include water quality and reliability of the service.

The Ghana Water Company, which produces the water, who produce good quality water - according to the national standards and norms - at the point of production. But it goes through a pipe, which is 50 years old, before it gets to me here and I turn the tap on. When I turn the tap on, what I get here is the quality of water for me, not the quality of water at the water works. And most people will tell you that, you know, the quality of water that we get at the house water-level – at the consumption end – is not very good. That is what most people will say. Water is supposed to be colourless, odourless, tasteless, but this is not always the case in Ghana – I've had water that is brownish, all kinds of things like that. So, you know; if you drink that type of water and you have a stomach upset, who takes responsibility for that? CA 1

Quality is an issue. Then also the reliability. I mean, if I'm not getting access to supply and I'm not getting a reliable supply. So, the situation in Accra and most of our urban areas is that even though a large proportion of the population has access [i.e. has access to a tap], it is not reliable [i.e. it is often dry]. R 1

Reference was also made to consumer complaints, which included regularity of supply, water quality and billing related issues.

If I would base my response on the common complaints that they make – comments on the regularity of supply, on the frequency and regularity of supply, um, sometimes water quality, sometimes not getting bills on time...sometimes they feel that bills are not fair; they are being billed for very huge consumptions which are resulting from

data inadequacies or deficiencies. Those are the common problems. These have to do mainly with the delivery of the service. So, water quality, water pressure, frequency or regularity or flow; and then the billing aspects - not receiving bills on time or payments not reflecting or bills very high, defective meters. You know, those are the common problems. WS 3

The regulatory body also discussed that they had conducted surveys on consumer needs. The findings indicated that consumers want accessibility, affordability, participation and duty of care (taking the needs of consumers into consideration).

We did a survey in 2001, 2002; and the response – I think we covered about 3000 households in Ghana – and the response...The first was accessibility – yes, they wanted to get access; then affordability was the second; then quality; then we have, um, community participation – well, they said they wanted to be involved in whatever service that is being given to them.... Then, the last thing issue that came up was duty of care; that had to do with consumer issues. R 1

Access to water was regarded as the most critical consumer related priority by the consumers association.

The priority is the access to the water; that water should reach everywhere. And then the regularity, when the water is supplied. Those are the two key things. CA 1

The consumer association also discussed access to water in terms of the development of a pipeline infrastructure to deliver water to other regions in Accra.

Then the next [priority] would be access to the water itself. By that I mean that more of the people should now have access to pipeline water, in the sense that where the water has not reached us yet, it should be extended quickly to those places, which are in urban areas - there are certain parts of Accra which have never had water and it appears will never have water. I think that should change. CA 1

Access to water was also discussed in terms of regularity of supply. Here, it was acknowledged that Western standards of water provision 24 hours a day were not attainable, however there were calls for the supplier to inform consumers about when water would be available.

I think the most important [consumer issue] is the access to the water. You know, on a regular basis – when I say regular I don't mean 24 hours a day, like in Europe, when you come home anytime, day or night, the water is running; I'm not saying that. That is the ideal situation, but we know we are a developing country, we will not reach there. CA 1

But if [the supplier] will tell the people that water will be available 2 hours a day at this time; and the people will go and get the water, then everybody will make provision to, survive until the next time that the water comes. Or they [could] say that water will be available 3 times a week on these days?...Then people will not complain, because then they will have the water and they will know that the water is available at this time on this day; then they will make provision to collect the water in some receptacle and use....But that has not happened - the water is just cut off and you don't know when it is going to come again. CA 1

The contractors also discussed access and provision of water. They acknowledged the challenge of providing water to all people equally in the different areas of Accra.

It's, we consider, quite a big problem to get the water equally divided over as much as possible people... WS 1

Some areas – and I don't know if they are upper or middle or lower class – they have 7 days a week, 24 hours-a-day water; and there are areas who haven't had water for months. So what we do is, take that water from the areas 7 days 24 hours and bring it to other areas. So the people in the 7 24 start to complain and the people who get the water now you won't hear them... WS 1

It's the way they have been doing it. There are still areas with a 24 hours, seven days a week delivery and I am sorry but in these areas we will decrease delivery and bring the water to other areas. WS 2

### **Public Awareness**

With respect to awareness, stakeholders did not think the public in general were aware about the new management structure.

I think the knowledge about the new management is not that widespread – it's only the knowledgeable who know what is happening. Most people don't really know that there is - they may have heard that some outside people have been, a company has been contracted to manage the water. But what exactly that means, most people don't know. CA

### **Unaccounted for Water**

Several stakeholders discussed high levels of unaccounted for water, or non-revenue water in conjunction with illegal practices.

There's a struggle for water and what you see, for instance, when you have an area – a living area...so you open the vault and they will get their water – but all the people say: well, I think I need some water now. They start to operate vaults and try to lead it to their territory. WS 1

One point to make is this scarcity of water. They tried to pass this rationing schedule, because when you don't have enough then you try to divide what you have a bit equally amongst the people, but not all people are satisfied with that. So you see a lot of, mostly illegal practices from customers trying to get their water: And especially when you are in a...say not so economically favourable situation you need water – so what do you do?; well it doesn't matter how, but [customers think] 'I will get my water'. WS 1

The supplier attributed high levels of non-revenue to these types of illegal practices as well as billing related issues, poor meters and illegal practices. In the case of illegal connections, it was noted that although these practices are illegal, they occur with such regularity that they have become normal accepted practice.

I don't like to speculate. I always like to see the facts; to comment on the most feasible facts that I have at my disposal. Unaccounted for water in Ghana, as I know, has a lot of component parts. You have aging pipes in some areas which give way, you know, every too frequently. You have theft of water from the system, theft. You have problems with billing, meters that don't work well or are not read, not read at all. You have moral practices – moral practices on the part of people who deliberately, you know. So take it all as systems for inefficiencies, where you know – therefore this is combined and results in either loss of water from the system or from you not selling the correct quantities of water that, you know, should be paid for by the users. WS 3



I think that's why we have such a high percentage of non-revenue water. So - and it's so normal, so accepted - just totally in day time people dig up a line and they cut the lines and make illegal connections and continue like that - nobody will stop you... But it's [become a] normal accepted practice. WS 1

The situation - the scarcity - is on a level that people indeed struggle to get the water; and a lot of illegal activities are practiced in a way that it's almost accepted nationwide - nobody will stop you - and to change that to, say, more responsible behaviour - use your water wisely, pay your water bill and have legal connections - it's a long way... even if we are able to solve all technical problems, then still we have consumer behaviour. WS 1

The regulator also stated that non-revenue water use resulted from illegal practices.

Through... illegal connections a lot of people are connected to the utility; and the utility company is not aware. So, the water is produced, it is billed, but they only get a fraction of what they have sold. So, I mean, I don't have figures to back it up, but from experience, I believe that that's what is happening. R 1

The consumer association discussed illegal connections from the perspective of the consumer, and suggested that the occurrence of such practices are a response to overcoming technical problems and the delay in response from the water company in providing a connection to the water supply.

...getting the connection to the water - to the pipeline water - is not that easy, straightforward. There are all kinds of bureaucratic and technical headers... which you have to surmount. In some areas... it is difficult to get the water from the main pipe to the household. So, that technical problem has to be resolved. And, sometimes you have a feeling that the water company is overwhelmed by the demand for their services, in the sense that if you apply for a connection, it can take years - maybe this time maybe not years, but months... At that point, people then do the illegal connection. Because then they circumvent all these bureaucratic headers; and then there is somebody - one of the water technicians, technical people or engineers - they do a connection for them to the main pipe. And then they have water in the house, that's it. Because of these illegal connections, there is a lot of unaccounted for water. CA 1

From the perspective of the regulator, the implications of illegal connections are multifaceted. Firstly, the impact on the water supplier is loss of revenue. Secondly, there are various repercussions, such as depriving others from access to water in the short term.

For the utility, it is very easy; I mean, the loss of revenue... In the case of the consumer, if you indulge in illegal connections: one, you are depriving other consumers from also getting access to the water... R 1

The loss of revenue also has an untold effect, another effect on the utility, in the sense that those monies could have been used to also improve on the system... So, more people who don't have access could also be given access; so that eventually there's enough for everybody. Because, those who don't rely, or who don't get their supply from, the utility normally depend on secondary consumers. For instance, the quality of that is undermined, because you are not really sure. R 1

The consumer association also recognized that illegal connections result in water deprivation amongst some communities. According to the regulator this has long-term implications, since loss of revenue leads to less capital for improvements to be

made, and ultimately fewer people have access to water. In some cases this leads to consumption of secondary sources, where water quality is undermined.

Secondly, they buy it at a much, much higher price than what they could have got legally hooked onto the utility... So these are some of the indications; so you deprive others people from access to water and at the same time you deprive the utility from getting revenue that will also stop them from having expansion and improving their services. So, the bottom line is that you don't make others get the water as well. R 1

In addition, the implication of consuming secondary sources means that higher prices are paid as compared to the prices set by the supplier.

According to the consumer association, consumers are aware of their actions. It was suggested that such practices are deemed to be the only solution, if they have no water.

To a large extent they understand that very well. But, you need water in your house, so you are prepared – sometimes, people are prepared to go and pay little price for this illegal connections. Because, you apply [for a legal connection] – usually what happens is that the people apply and..after some time, a friend tells them: But I know this man, he did one for me or he did one for somebody, why don't you talk to him; if you find out where the main pipe is passing you can take it to the house, later on you sort out the bureaucratic this and that. It's what happens. But, there is never a later on. So, they are fully aware that the practice is not correct, but in the situation they find themselves, that is their only way out. CA 1

I think they know that that is not the right thing, because they know that eventually it might be detected. But, in the circumstances in which they find themselves, they believe that that is the only thing they can do, until it is sorted out. OK. Eventually, the water company sends people around to see – to the houses – to see who has a meter and whether there is water flowing there. If you do not have a meter, then they will, take action against you. CA 1

It was also noted that consumers from diverse socio-economic backgrounds engage in such practices.

It's something like survival strategy for them, in the sense that first of all, the water doesn't come regularly - even if you do illegal connections, it doesn't mean that you get the water regularly. So, it's only when it is flowing through the pipe that you get it. So, reservoirs are built everywhere, in both, by, especially by the – what you call it – the well-to-do, they always have reservoirs. So, when the water comes it goes into their reservoir and they take it from the reservoir... So, it's a survival strategy of the weakest people in the society, in the sense that even if it's illegal connection that you have, you need to store water....So, this practice is not only by the poor, but also by the rich. CA 1

#### **4.2.3 Engagement and Interaction**

In terms of consumer relations, it was clear from the interviews that there are few initiatives in place. In the case of consumer engagement, one stakeholder stated that within the current infrastructure there is little opportunity for the voice of the consumer to be heard.

There are a lot of things going on – so there are discussions with the grantor; we have contacts with the regulator, PURC; ministries. But in the meantime the

customers, well yes, they still are there but they actually don't have an opportunity to raise their voice. WS 1

From the regulatory viewpoint, although the regulator has a formal complaints system in place that deals specifically with consumer related issues, it is their policy to refer consumers to their water supplier first.

We have a complaints procedure; and what we normally do is that we encourage consumers to report to the utility first. Yes encourage consumers to report to the utility first and then if the utilities are unable to provide them with a reliable or, let's say, an effective response, then that's when they can come to us. And when they come to us, we usually take up the issue. R 1

We have a formal way of making complaints. But, it has to be written. Yes, it has to be a written complaint. And in case the complainant is illiterate and cannot write, we make an officer in the consumer service, go round there and report, which is recorded – after that it is up to him to make sure that whatever has been read has been written; and then that's fine so we give a thumbprint. Then we send a copy of that report to the utility and normally they are supposed to get back to us within 5 days. R 1

However, from the perspective of the water suppliers, it was stated that consumers resort to other methods in order to get their views across.

They call the radio and make their complaints on the radio, or they call their friends in high places which strike fire with the grantor to get things done with us - so that's more the informal system here. But they don't have voices. WS 1

When they have problems they go to the werewolves. When they have problems, instead of coming to Ghana Water Company or AVRL, they find the next radio station (laughter). WS 3

The consumer association also stated that at times, consumers contact them in relation to billing issues.

[Consumers] will complain to us that, you know, the bills have been coming, they have gone there to talk with the people and they are still not satisfied with the bill. So, what we do is that we accompany them to the place and discuss the issue with them, and usually, it will be resolved. But, most people will go straight to the water company - that is what is advised. If you go to the company first and if you can't resolve it then you go to the next stage. And people will also complain to the PURC, because they have a complaint – what you call it – mechanism, where consumers can complain directly to them.... CA 1

It would appear that the lack of opportunity for consumers to get their voices heard stems from lack of awareness about who to contact. Indeed, the regulator discussed how consumers were not aware about the existence of their organisation.

Most of the people are not aware that that there is an organisation like PURC. R 1

Most consumers, because they are not aware that there is an organisation like PURC, whenever they had complaints they didn't know where to go. Because sometimes they go to the utility and they meet a brick wall; and they don't know how to proceed. And when they don't get any possible response from the utility, it's like they don't have anywhere to go. So, one, that people they are aware that we are here

for consumer protection. Then, when we encourage that when they have problems, they can come to us and we will tackle the issues. R 1

The view held by the consumer association was that communications between the water company and the consumer were problematic, and that in the case of complaints, consumers often did not know who to contact. It was also felt that consumers do not think the company will be responsive.

Usually, most people don't even know what to do... Many people may also feel that if you go to the water company, it's just a waste of time, because their perception of the company: they don't care – they won't do anything anyway, so do you waste your time? Until that perception is eradicated, removed, most people would just rather sit down and wait for the – people will call anyway, that there is a problem with the water and sometimes they will react after a while. But usually, even, you hear on the radio or in the newspapers that some water pipe has burst; and for about one week or weeks, it's still gushing out water. Everybody is passing that major road, they will see it and nobody does anything about it. CA 1

With regard to consumer relations, some water suppliers drew comparisons with Europe, recognizing that there is no infrastructure in place for consumer relations.

Normally when there are complaints or things to report in Europe, you phone the company; and you get some person on the line and an idea that you are heard and action is taken. But that's not in place here. WS 1

However, there was evidence from another water supplier that efforts are being made to put in place a structure that will enable dialogue and the voice of the consumer to be heard. Here, it was noted that the organisation are engaged in setting up a strategy to better serve the needs of consumers.

[We have a] public relations department which handles all of this – we have it at head office; and the operator also has it. And it is also decentralising all the regions – every region has public relations; most regions have public relations officers. Where the region is small in terms of operational scope, it might share this officer with another region. And then, as I was saying, we also have – we also require the operator to provide customer service centres. At the customer service centres, the interaction is more on a one-on-one basis. But with the public relations, it can be mass information, you know. And so these are the requirements. WS 3

[We offer] specialised training for specialised disciplines, of course. Some local, some overseas. And this is all aimed at improving quality of personnel so they can serve customers better. WS 3

Here, responding to consumer complaints in a timely manner was noted to be beneficial in allaying the concerns.

Somebody who usually enjoys but no longer gets it and they say, you know: "why"? It is easier to cope with if you know the factors that are contributing to that, and the efforts that are being made to rectify it. So giving, passing on information in a timely manner can cool down people and kind of set their hearts at ease a little bit. So there is requirement there. WS 3

Similarly, another water supplier stated that they currently did not have a department for consumer complaints, although it was being implemented and developed.

Hardly any customers visits for complaints our offices – when they come it's to settle a bill. And there is no customer complaints system in place – we are developing it now and trying to bring it in place, but it's not operational yet. WS 1

However, when the water supply spokesperson was asked about how the complaints system would be used, the response was somewhat resigned in nature.

Actually so far its not that much use - in my contract we had an obligation to start it and so we do it.... But the only thing you can do is administer it and try, where possible, to do something about it. But, as I said, the situation is rather poor. And, well, you can only do fairly limited things – or when you start the system you know how big your problem is, but you can only do fairly limited. But I am not so very eager to get an idea of how big my problem is – I have enough other problems WS 1

Other stakeholders also discussed the implementation of consumer relations in terms of a contractual obligation.

We have a management contract that is now running; and under this management contract, the operator has generally an obligation – or a performance requirement – to establish customer response and improve customer services, and not allow any complaint from consumers or the public to go unattended for a period of say 48 hours. WS 3

### **Information Provision**

All stakeholders regarded provision of information as a critical issue. The consumer association noted that the water company rarely informs consumers about the availability of water.

Scarcely [will] the water company or whoever go round and tell the people, announce to the people, either in a publication or – once in a while they do that – that they are doing some major works so for the next few days there will be interruption in the water supply. But when you go to the house and there is no water running from the tap, usually no previous announcement is made; and you don't know when water will come again. CA 1

One water supplier felt that lack of information lead to concerns and speculation.

Information definitely is very important; if it's managed properly it serves many, many – but with us, what happens in cases of lack of information is nothing to write about; what fills the gap is rumour mongering, speculation. And then whole lot of negative spirals is made from that and it's undesirable. WS 3

In other cases, although some water suppliers have in place information schemes and incentives, they are not viewed as being particularly helpful.

Of course we advertise, on a regular basis: use your water wisely, pay your bills, have legal connections, report illegal activities, report pipe bursts – like that. It's already done for 4 years, WS 1

The utility is trying to...put up an incentive – that if you report somebody who has an illegal connection, then there is a reward for you. Yes. The utility has, I think, for the past 2 or 3 years they have been doing that. Whoever makes a report to the company for an illegal connection, they get a reward that is given. R 1

We try to communicate as much as possible to send out our message. But it is not...how do you say it...public opinion, you cannot steer it. It is not objective. It is a feeling. So you can do a very good job but, when the public think in another way...or when their interest is in other way...WS 2

When discussing communication strategies in general terms, other stakeholders discussed the critical role of the media in disseminating information to the public.

We have been trying to use the media. But PURC, we are always financed constrained, because we rely on the government, so most of the time, we don't get much to do enough of the popularity. But once in a while we run commercial also, on radio, TV; we have fliers that we normally distribute. Sometimes I go on radio myself to try and educate people on - whenever we get the opportunity, we do that. R 1

It was discussed how the media have the capacity to be alarmist, and therefore the water supplier has aimed to develop positive relations with the press.

We want to call it an interactive relationship...Get people who are knowledgeable in reporting on the issue to talk sensibly on it. Not write damages and things, with no business in the papers; things which tend to press the alarm button unduly - If there's an accident and one person dies, they say: ah, 200 people died. That kind of thing. Don't press the alarm button unduly or unnecessarily. So we've also interacted with the press; to show them our ambition, to invite them to interact with us if they have any questions or any issues there or later subsequently. We can only use the press very effectively to disseminate information. So we need a well-informed press – a very well-informed press. So we are taking steps for that. We've also taken steps to reach out to as many of the stakeholders as possible at the grass-roots level. So we believe that information and knowledge is power. WS 3

### **Evaluation and Other Consumer Related Projects**

From the consumer association's viewpoint, there was a need for the water company to be more proactive, and to consult the needs of consumers. It was felt that this would be beneficial for consumers as well as the company.

The service provider has to be more proactive. It should go to the houses and ask them whether they have a connection or whether they need – if they say no, say: do you need a connection? And assure them that their needs will be attended to. Now, the situation is that the water company waits for you to come and apply. They should be proactive and go to the people – then the people will feel that someone is caring, thinking about them, caring for them. Especially in new development areas – they can send people there, pay them from their resources; and ask them individually. Because the more people they supply water to, the more revenue they will collect. CA 1

One supplier stated that they would be conducting stakeholder polls, including consumers.

We haven't undertaken any stakeholder polls in recent times. We plan on shortly - within the second half of the year. That will give us a very good indication of their perception, generally, of the quality of service...WS 3

A lot of focus on the consumer. A lot of focus on the consumer - that is actually what we need. And we will have that done in the second half of the year; and it will give us a very clear picture of their perceptions and then their perceptions as well of this PSP arrangement – Private Sector Participation arrangement about water supply. WS 3

The supplier acknowledged that a focus on the consumer was needed in order to give an indication of perceptions following the inception of the new management structure.

So now, with the management contract as a reality, we want to have a feel of what their perceptions are now. OK. So that is one of the reasons we are undertaking this; and also to see if in their opinion things have gotten better. We only wish that we hadn't had this extra complication; that things had been straight forward enough for us to really have a fair assessment of the process. WS 3

Although it was felt that other contextual factors may complicate perceptions, the water supplier expressed interest in ascertaining consumer perceptions, in order for them to respond and develop solutions accordingly. However it was stated that consumer views needed to be legitimate and reasonable.

As it is now, there is a bit of an energy crisis in Ghana; and this complication will be a bit of cloud on the whole thing. But that notwithstanding, well, we still want to know how they feel. Reasonably so. So that we can design responses, find solutions to concerns that are legitimate and that are not unreasonable. OK. Concerns which are legitimate and reasonable. So, once we take care of those concerns and the design of our future projects and so one – the bottom line is to move towards customer satisfaction as much as you can. WS 3

In addition to evaluative stakeholder polls, water suppliers are actively engaged in implementing projects and pilot studies to better serve the needs of consumers. The two are regarded as distinct from one another.

In one case, we are trying to have a feel, because feeling and perceptions are the way things are going on; that's the stakeholder poll. And in another case we are positively identifying people in a certain category; and sending them services to improve their situation. WS 3

Thus the water suppliers are engaged in projects involving technical solutions such as public standpipes, yard connections and individual house connections.

A mega project that we are undertaking has got with it, for that matter, a socio-economic survey, which was conducted to nevertheless paint some – you know, as we go about that we are looking for optimal ways of delivering service at levels which match their capability to pay; you know, using technologies which are affordable and acceptable to them. WS 3

We are also trying to resolve some of the difficulties associated with supply of water to urban low-income areas. There are a lot of informal settlements, a lot of them without any proper authorisation or right permits from, you know, the municipal authorities. WS 3

The regulator stated that, on the basis of a survey conducted of consumer needs, amongst other factors community participation and duty of care featured high up on the consumer agenda.

Duty of care – that is taking the concerns of the consumers into consideration. Because a lot of them were feeling that the utility companies were not adequately addressing their concerns. R 1

For community participation, the example given was stand pipes.

If you are talking about, let's say, providing standpipes. One thing is that, if you don't involve the community, sometimes, even where you are going to site the facility could bring issues, because if you look at the land tenure in this country, land belongs to the people and not maybe government. R 1

They want to be involved in the whole process, so they will tell that: ok, this is the type of service we want and we want it maybe sited here. R 1

However, it was suggested that, in reality, consumer views are rarely taken into account in a proactive and participatory approach. For example, in decisions where to site stand pipes, the operator explained a reactive and politically influenced reality.

I assume the situation is like this that, so many people would like to have water; it's more, well, where shall we do it? And maybe even politically influenced where it's really done, [rather] than, oh people want water over there and we bring it. WS 1

Regarding consumer involvement in general, the attitude amongst one water supplier was somewhat resigned in nature, suggesting that such issues are very low in the agenda of the organisation.

It's a bit beyond my scope now, because we still have so much getting the basic things alright. WS 1

### **4.3 Summary of Findings for Case Study Three**

For many years the Ghanaian water sector has been struggling with its mission to supply urban areas with potable water. The interviews for this study demonstrate that this struggle continues. Currently the main water sector challenge is to create an efficient management with the new organisational structure. The water sector interviewees mentioned several components i.e. finding a good work environment between the grantor and contractor alongside proper investments, technical advances and improved cost recovery. From the perspective of the contractor, time and expectations are major obstacles.

Access to water was identified as the chief consumer issue (and consumer priority) in Accra by all participants of this study. Water provision is disproportionate around the city and most people lack regular supply, thus affecting livelihood and wellbeing.

In terms of cost recovery within the water sector, interviewees mentioned consumer issues that relate to high levels of non-revenue water, in the sense that illegal practices are thought to have great impact. Interviewees indicated that it is the billing system rather than the actual cost that needs attention. More so, it is clear from the interviews that there is a prevalent perception that common behaviours and attitudes of both water sector employees and the public is affecting cost recovery negatively.

Other consumer issues mentioned relate to water quality, affordability and duty of care i.e. providing information to consumers, complaints and request handling.



Some of the stakeholders felt that existing levels of dialogue between the supplier and the consumer are insufficient, to the extent that consumers have little hope that the situation will improve. The interviews with the consumer organisation, NGO, and regulatory representatives expressed a serious call for increased engagement, communication and interaction from the suppliers end. The water supplier representatives expressed awareness about this problem, yet seemed unwilling to implement a more consumer oriented approach in practice as opposed to what is presently in place. The reason for this is that other water supply challenges are considered more important to tackle at this stage in order to have the most positive impact on the consumers' situation.

## 5 Case Study Four: South-East England

### 5.1 Introduction

#### 5.1.1 General facts about South-East England

England has a population of 50,763,000 inhabitants out of a UK population of 60.6 million (National Statistics, 2007). London has a population of 7.4 million, with the surrounding South-East region having another 8.0 million (National Statistics, 2007). London is a heavily built up city, with a population density of 4,679 people per square kilometre (National Statistics, 2004). The South-East while more rural in character has many large commuter towns and villages, and an overall population density of 419 people per square kilometre. The economy of the region is heavily dependent upon services, which contributes 86.2 percent of GDP in London and 76.9 percent in the south-east (National Statistics, 2004). Agriculture contributes little to GDP in London and 0.7 percent of GDP in the south-east.

The Thames basin which covers all of London and much of the South-East region has an average annual rainfall of 688 mm. Rainfall across the South-East is 740mm per year which is low compared to the UK average (Environment Agency, 2007). It is thought that climate change will bring wetter winters and warmer drier summers to this region.

<b>Fact and figures</b>	<b>South-East England</b>
Accession to the European Union	1 January 1973
Area	
- London	1,579 km <sup>2</sup>
- South-East region (excluding London)	19,096 km <sup>2</sup>
Population	
- London	7.4 million
- South-East region (excluding London)	8.0 million
Population Density	
- London	4,679 / km <sup>2</sup>
- South-East region (excluding London)	419 / km <sup>2</sup>
GDP (PPP) Per capita	\$30,821
Human Development Index	0.94
Capital (of UK)	London

Table 5.1: Facts and figures for South-East England

#### 5.1.2 South-East Drinking Water Supply

During the nineteenth century the water supply industry in England developed as a mixture of municipal and small private undertakings (Saal and Parker, 2001).

Consolidation occurred during the twentieth century, with the number of water undertakings in Britain falling from 1000 to 200 between 1950 and 1970 due to mergers (Hassan, 1998). In 1974 the UK government took control of what was still a fairly fragmented system and created ten water authorities across England and Wales which were given full responsibility for the water cycle within their catchment areas. In addition, 29 private statutory companies were permitted to continue supplying water in parts of the catchment areas of the water authorities (Saal and Parker, 2001). In 1989 the regional water authorities were privatised and became publicly listed water and sewage companies and the 29 statutory companies became normal publicly listed companies (Saal and Parker, 2001).

Within London and the South-East region nine water companies operate, namely: Bournemouth and West Hampshire Water, Folkestone and Dover Water, Mid Kent Water, Portsmouth Water, South East Water, Southern Water, Sutton and East Surrey Water, Thames Water Utilities, and Three Valleys Water. These range in size from Thames Water, supplying eight million people in London and the surrounding South-East to Folkestone and Dover Water, supplying 150,000 people on part of the south coast (Environment Agency, 2004).

Population growth is expected across much of the south-east, with the population of the region (excluding London) expected to reach 9.23 million by 2029, thus increasing by more than a million people; London's population is expected to grow by a further one million people (National Statistics 2007). Per capita household water consumption in the UK currently averages 150 litres a day nationally, however, in the south-east it is somewhat higher as all water companies average more than this, and Three Valleys Water has the highest average household consumption in the country, providing over 800 million litres of water on a daily basis to more than three million customers (OFWAT, 2005).

Some of the water companies in south-east England, particularly Thames Water and Folkestone and Dover Water, have a pressing need to increase their water resources as their ability to meet unrestricted water demands under all expected conditions is lacking (OFWAT, 2005). Thames Water is looking to increase supply through a variety of means, including reduced network leakage and the building of a desalination plant (Environment Agency, 2004). Options being implemented by water companies across the south-east include demand management, and further surface and groundwater abstractions.

### **5.1.3 Stakeholders**

Representatives from the following organisations participated in this study:

#### **Southern Water**

Southern Water Services Ltd was formed after privatisation in 1989. Southern Water supplies drinking water to a population of approximately 2.3 million people in the south of England, in addition to treating and recycling wastewater from approximately two million households in Hampshire, West Sussex, East Sussex, Kent and the Isle of Wight. On a daily basis Southern Water supplies about 552 million litres of drinking water from their 95 water treatment works. About 68% of the

sourced water is from aquifers, 27% from rivers and 5% from storage reservoirs. The overall quality of drinking water is rated at 99.95%.

### **Drinking Water Inspectorate**

The UK government, through the Drinking Water Inspectorate (DWI), regulates drinking water quality in England and Wales. The DWI was set up in 1990 after the water industry was privatised to operate as an independent body. The primary role of the DWI is to monitor and ensure that the water companies in England and Wales supply safe drinking water that meets the standards set in the Water Quality Regulations. In addition, the DWI conducts technical audits of each water company, involving general inspections of individual companies, as well as annual inspections of drinking water as supplied by the water companies.

### **Ofwat**

The Office of Water Services (Ofwat) is the economic regulator of the water and sewerage industry in England and Wales. Their role is to seek value for consumers. Although their decisions are made independently from the government, they work closely with key stakeholders, such as the Department of Environment, Food and Rural Affairs, the Drinking Water Inspectorate, the Environment Agency and the Consumer Council for Water. Ofwat carries out its responsibilities by setting limits upon what consumers can be charged, protecting the standards of service received by consumers, encouraging water companies to be more efficient and helping to encourage competition where deemed appropriate. They also make comparisons between water companies in order to raise the general standards where necessary (Ofwat, 2007).

### **Consumer Council for Water**

The Consumer Council for Water (CCWater) is the consumer representative for water and sewerage customers in England and Wales. CCWater was formed in 2005, their aim being to ensure that the collective voice of the consumer is heard. By working closely with water companies and consumers themselves, their aim is to ensure consumer related issues such as value for money, a safe and reliable water supply, resolution of problems, and general improvements are achieved (CCWater, 2007).

### **National Consumer Council**

The National Consumer Council is a non-profit making consumer policy and research organisation. Their broad role is to develop and promote policies that will benefit consumers of different types of goods and services.

## **5.2 Findings**

### **5.2.1 Water Sector Issues**

The water supplier felt that the major challenge for the water sector in the south of England was meeting supply and demand in the face of increasing growth in the region, within the context of local and global environmental issues.

I think there are several challenges .....one is from the growth and demand in the South East, as we look forward. The second one is from accommodating that within the environment, the local environment that we operate within, and then the third one is more of a global environment picture. Which is obviously related to climate change, and the trade-off, as well, with as we push, or try to improve the local environment more and more, the technology we will need actually uses more power, and therefore the, the compromise that then has on the global environment. WS

Overall, stakeholders felt that that there were few current major issues within the water sector. On the whole, it was noted by the consumer body in particular that there are basic challenges facing the water industry based on safety and contamination. At the same time, it was stated that, owing to investments in the drinking water sector, health-related incidents such as cryptosporidium were less of an issue.

Most of the major issues have tended to be dealt with through investment over the last 15 years. So, for example, things like dealing with cryptosporidium...generally speaking cryptosporidium seems to be resolved, as a major issue. CA 1

In terms of future issues, water shortages were discussed.

The issue of course is that there isn't going to be enough water to service [consumers] needs, so therefore they're going to have to be more water efficient. But they need, they need some sort of incentive to be water efficient. The majority of customers are not metered. There's no incentive to be water efficient, apart from your moral obligation perhaps to your fellow man. CA 1

### **5.2.2 Consumer Issues**

With regard to stakeholders' views about consumer-related issues, there was an unequivocal view that there were few overriding issues of concern. It was claimed that consumers are familiar with, and accustomed to high quality drinking water. From the point of view of the water supplier, the consumer demand for high quality drinking water has been met with high levels of industry compliance, especially since privatisation.

Well, I think initially when the industry was privatised back in 1989, the thing that always came out top in all our surveys, in terms of willingness to pay, was quality. [Consumers] wanted a very clean product, in terms of very high quality drinking water, and that has consistently been there, and it is only in, in the latest survey that is now not the top, but it's still in the top five. And we think a part of that is because when the industry was privatised our compliance record would have been about 80% [sound breaks up], and last year our figure was 99.98%, of examples which were compliant. WS 1

This was closely linked with the notion that, on the basis of these standards of service provision, consumers expect high standards to be maintained. With this in mind, safety was noted as a key consumer expectation.

In the UK water industry...consumers expect water to be safe to drink - drinkable water that they don't have to think about at all; it's a basic expectation that water is safe to drink. CA 2

## **Priorities and Preferences**

The sector already carries out a number of consumer surveys and on the basis of these the water supplier noted that the key consumer priorities revolve around water quality, supply and cost.

Well, from some of the surveys that we engage in with consumers, I think [consumer priorities] fall into several key ones. One is they need clean drinking water. The second one is going to be a reliable supply of water, and then the third relates around the cost. WS 1

The water supplier felt that, given that consumer expectations about high levels of water have largely been met, consumer preferences and priorities focus on to other aspects of their service provision, for example reliability.

...I think people's preferences and priorities change, because I think people now feel that that is an issue that has been fixed, that they do receive good quality drinking water through their taps, and so they now, I think, move on to other things, such as reliability. WS 1

Amongst other stakeholders, safety, availability and supply were also noted as consumer priorities.

The general supply issues are a major problem in the southeast of England...Surrey last year had a drought order.... The position seems to have eased quite considerably because we've had a rather wet winter, but you know, there is population growth in the Southeast, the government wanting to concrete over most of the southeast of England it would appear, build on floodplains and that's going to put a major strain on, on water resources. CA 1

Consumer representatives also regarded aesthetic issues as being key for the consumer.

The big issues I would probably think are, are the aesthetics of drinking water quality - very important as far as customers are concerned that they get a clean supply of water. They don't want to see any discolouration of the supply. They're also keen on taste and odour issues. CA 1

It was noted that aesthetic issues and related preferences are subjective, and vary between consumers.

One of the problems we've got is, of course, taste - and odour too, to an extent - is very subjective. CA 1

Drinking water issues aside, other stakeholders, especially regulators, recognized that consumers have certain expectations about service provision. One regulator in particular recognized that there is a hierarchy to consumer needs, the most important factors being reliability, value for money and trust.

The key issue for all customers is reliability; value for money; and trust. R 1

They want responsiveness, so if something goes wrong they want somebody to be there. R 1

They want knowledgeable, so they want someone on the end of the phone to know who they were, what their problem was, how to solve it. And they want resolution. So they want the problem to be put right. R 1

In terms of cost, the water supplier noted that there is a discrepancy between consumer expectations, and what they would be willing to pay.

The other bit of, bit of research that is coming out, and I think it's seen elsewhere in other industries, is people, when they talk about what they would like, there seems to be a growing difference between that and what they're willing to pay for, for the cost. And one of the key examples, I think, for the industry down here, is for that, and let's talk about leakage, for example. Everyone would like to have a leakage programme, for leakage which is almost minimal, the minimum it possibly could be, but to do that would cost billions of pounds, which means a huge rise in bills. And of course that's just trying to solve one small issue in a, across a whole broad range of issues, in terms of that maintenance, and other things that need to be delivered. So there's this aspiration that they would like the company to get down to this level, a very, very low level of leakage, but when they see the price tag for that there isn't the willingness to pay a huge amount of money for it. WS 1

### **Taking Water for Granted**

A recurrent theme, when discussing consumer priorities was the notion that consumers take water for granted, particularly with regards to availability and safety.

You generally take it for granted that it comes out of the tap and you can drink it. And anything which is there all the time, and you don't pay an awful lot of money for, people take for granted. CA 2

I think people take it for granted that it will be a safe supply. NGO 1

Very few people have any doubts about turning on a tap and drinking it. There is no worries on that score in this country. It's not considered an issue. Everybody does actually, rightly, take it for granted that you can drink what comes out the tap. R 1

It's just like electricity. You turn on a switch and you expect it to come on. NGO 1

It is important to note that the stakeholders did *not* regard the fact that consumers take their drinking water for granted as a problem. Similarly, there were some reflections that although consumers may not be knowledgeable about the legislative standards of drinking water quality, this is not necessarily a problem per se.

I don't think consumers know an awful lot about what might be in their water that shouldn't be in their water. I don't think consumers really know what the standards are. I don't think it really matters that they don't know. CA 2

Also, the water supplier noted that drought related incidents gave rise to consumer awareness about water restrictions and possible implications for water availability.

...there were a number of questions around [water restrictions], and whether they would have to actually then get their water from a standpipe, and I think for a country such as ours, which has... I think the last time we ever went to that level of impact in parts of the country was back in 1976, so I think people have become used to and accustomed to that, and our whole society has grown up around that. WS 1

## Concern

There was a general view that consumers do not have concerns about their service provision, providing their expectations are met.

Do [consumers] have concerns with their water supply? Not when it's working. Not when it's value for money, not when it's, not when they can trust it. Not when it's delivered within an environment from a company that they trust anyway. R 1

The water supplier felt that consumers may have concerns about quality and reliability. Reliability of supply was noted as a particular issue in the light of recent water shortages in the region

I think, on a general level it's the, the quality, and reliability. I think, you can just put it down to those two key aspects. During the recent drought they were, there was a large, a large-scale response, in terms of the real concern, and real worry that their water would be turned off. WS 1

...on reliability, I think there is an acceptance by consumers that they're not expecting to have a, a never-ending supply of water. They do accept, and that comes back to our surveys, they do accept that restrictions will have to go into place, but I think it's the subtlety between restriction, restricted use, and going to the extreme [measures]. WS 1

Regarding the safety of drinking water, consumer representatives thought that consumers might have general concern about safety, yet, as noted in the extract below, these concerns or misgivings do not necessarily give rise to formal complaints.

There's generally concern about the safety of it, the taste of it, the smell of chlorine, 'if they have to put so much chlorine in, surely it can't be safe'....But to be honest, we don't get very many complaints about that. It's chatter, but it's not something that people are still concerned enough to complain about. CA 2

However, by and large, stakeholders did not think consumers were overly concerned about their provision of tap water, unless there was a particular incident, or some negative press. Thus, there was essentially a view that consumers have expectations that are based on their existing standards of service provision; stakeholders believed that consumers were not concerned with their service provision, unless something was wrong. However, rising cost was mentioned as one possible concern for consumers.

Do they have concerns with their water supply? Mostly no, but they have concerns over what it's going to cost, whether it's going to be there, whether the company's leakage is right, different customers have different concerns. R 1

I don't think anybody has a concern with a utility when it's working. And in general, consumers don't have a concern with the supply of anything when it's there. And when, within their expectations, it is, the right value for money. It's only when something goes out of that expectation that people get concerned, so if the price suddenly is too high, or the availability disappears, then people get concerned. R 1

Although it was noted that consumer concerns were generally manifested in changes in service provision, other, broader contextual issues may also trigger concern.



Concern can be exhibited in all sorts of ways, like they stop shopping, or they complain, and it depends what routes they've got. If the trust goes, they go somewhere else. But they can't, with a utility like this. R 1

Lack of choice was also an issue:

Because there is not that choice [of going elsewhere], so a customer's only recourse is to complain, and therefore by dealing with the things that cause the complaints to happen, companies can reduce them, and therefore do a better job. So it's striking at the root cause of the complaints... R 1

It's the lack of choice that I think causes some customers to be concerned that they can't choose. And in that situation, I do believe it's so important that the companies recognise that they have a duty to be so much better, because it's...abusing a customer because they haven't got a choice is appalling...I don't mean abusing in a conscious sense, it's an unconscious sense of not having that customer's views at the forefront of everything you do. R 1

### **Incidents and Levels of Trust**

The idea that consumers take a safe, plentiful supply for granted was closely linked with the idea that when things go wrong, consumers sit up and take notice. Stakeholders often cited specific incidents to exemplify these views.

[Consumers] expect [water] to be there, on tap, 24/7. When it wasn't, there was an outcry, and people really are just, you know, not prepared to put up with that. Even though, in many countries, that is not the... The situation in our country is that the expectation from consumers is there. CA 2

A few weeks ago [in a flooding incident] there wasn't a safe and plentiful supply of drinking water and we had to use down pipes and drink bottled water etc...people started to appreciate the supply that we normally get. NGO 1

Other stakeholders recounted incidents that had resulted in high levels of consumer concern or anxieties.

From time to time a company will have an incident of one sort or another. Last year [unnamed water company] had a, a cryptosporidium outbreak...which caused a lot of people to, one, be without a supply of... a ready running supply and also caused them a lot of concern about the, the quality of the monitoring procedures .....certainly that, that was an issue which caused a few, few anxieties... CA 1

I was at [an unnamed water company] when the water nearly ran out in 1995, 1996, and it was very clear that when you are getting to the point of running out of water, you suddenly are at the bottom of this primordial pyramid, where fear starts to come in. Once people realise it could happen, and fear turns quickly into anger, and there's quite a quick flip there. R 1

In this example, it was noted that although consumers were not faced with any changes to their service provision in terms of supply or price per se, the perceived threat of no water, coupled with negative media coverage lead to erosion of trust in the company.

Nobody ever went without water piped through the pipes, ever...but the company was voted in the most hated companies in the UK. The water had kept flowing. The sewage had kept disappearing. The bills hadn't changed. And yet, because of the stuff on the press, and the fear and the uncertainty, and the tankers everywhere, it

was hated. Now, that's a very powerful...powerful emotion, is that. And there's something in there where, because it's...I think perhaps because it's water, that it's not just a commodity; it's something, which is primevally important. R 1

The erosion of trust and confidence stemming from particular water-related incidents also featured in other interviews.

I think consumers, generally, regard it as good quality water...However, we have had unfortunate incidents...and I do know that consumers' confidence was dented quite considerably. At the time, the water company carried out independent consumer research, and at the time, there was a lack of confidence. But it was restored very quickly, and people felt the company had dealt with it reasonably well and that there was not any long term dent in the trust of the company. CA 2

Indeed, in terms of fostering trust, other positive incidents were cited.

Well the best example I think we've probably got of a company who really won over their customers – they had an awful problem, but they won over their customers – and that was [unnamed water company]. Two mains which served [region], were washed away by the river, which led... well the supplies in the surrounding area were, were, just not, not available. [The water company] immediately held their hands up and said, 'our fault; we should have checked these, these mains were in good repair and weren't subjected to... the cause of the problem. We're going to sort it out. Whatever it costs, we're going to sort this out'. They had bowsers tankered in, they kept the local press informed, they kept the local town council and indeed ourselves informed all the way through the process. They've just spent several million pounds digging a tunnel beneath the river, to supply [area name]. So it's no longer two mains which are actually in the bed of the river, but actually one truly underneath it. And all the way through the process they kept people informed. And if there was a problem, they just got out there and sorted it out. And that really did show that companies can do things, they can maintain the trust of the, of the public if they're willing to you know, to do something positive about it. And a lot... they got lots of letters in thanking them for, for doing this sort of work. CA 1

Regarding consumer trust in general, some interviewees also distinguished between trust in water and trust in organisations.

I don't think there's any lack of trust in what comes out of the tap, anywhere in the UK. I think there might be lack of trust in the body that's running it, and it's not because they aren't supplying it [water]. There is some real disconnection there, between trust in the product and trust in the organisation that supplies it.....If an organisation, it doesn't have to be a water company, but in general, if an organisation creates a positive trust with its customers, and a relationship such that they have some emotional credit in the bank, such that when things go wrong, they go, "I, trust this company; they've always delivered for me", whatever it is, they're less likely to complain and give the company a hard time, or leave, than those organisations, which just deliver, just do what it says on the tin, and have no relationship. And one of the things that I've been pushing hard for the last four or five years is that water companies could develop a much closer relationship with their customers in order that they have some emotional credit in the bank, when things go wrong. And a lot don't. R 1

### **Bottled Water Consumption**

The water company representative felt that bottled water consumption was initiated by marketing strategies that appealed to consumers. However he felt that consumers did not drink bottled water in place of tap water.

I think bottled water has a, almost a fashionable status to it. The one thing I do perceive is that people refill bottled water with ordinary tap water now. I think people are moving on to that. I think initially they, they always felt that because it's a 'natural spring source', or 'natural'....that was one of the key buzzwords, I think, of the bottled water industry, and, and because it's natural it, you know, it must be better than what's produced that comes through a pipe. But it's interesting that, you know, the groundwater sources that we have in the South East, actually quite a number of them would meet the natural bottled water standard, and the difference, of course, is that we're just putting it through the supply, rather than putting that into a bottle and putting it on a shelf. So I think, in part it is a fashionable thing. I think it is all about labels, and marketing... WS 1

Indeed, increasing trends of consumption and high usage of bottled water were often associated with marketing strategies used by bottled water companies. For example, some interviewees recognized that bottled water companies have used the "two litres a day" principle to persuade consumers to drink more bottled water, or that idea that bottled water is somehow 'healthier' than tap water.

I think it's been an absolutely fantastic marketing campaign by the bottled water manufacturers. They have tended to push the idea that these minerals that are within water are good for you. CA 1

I don't think that it is due to the fact that people don't trust the water that is coming out of their pipes, that's not my understanding of it anyway, I think it's been a very good marketing job. NGO 1

Some stakeholders suggested that bottled water companies have exploited the fact that consumers may not like the taste of tap water.

There are issues about people not liking the taste of their tap water. However, I do think that the bottled water industry has played on that phenomenally, and exploited the fact that, I suppose, that the [bottled] water companies don't have to pipe their product, and don't say how good it is. CA 2

Others felt that consumers were exploited in terms of cost.

I think the water coming out the taps is of an outstanding quality. I think if people want the choice to buy bottled water it's entirely up to them....But in terms of value for money, I think it's monstrous. You know, you typically buy 1,000 litres of tap water for £1, and that's what it'll cost you, whereas you go and buy a litre, it'll cost you what? £1.50? £2? R 1

I don't know what it is now, but something like £1.50, or £2 a litre [for bottled water], whereas, you know, we charge our customers 80p for 1,000 litres. WS 1

Generally consumer mistrust of tap water was *not* conceived of as a reason for bottled water consumption in the interviews.

I'm not too sure it's trust. I think more about taste. CA 1

Taste was also noted as a possible issue by the water supplier.

...the industry, we have to put some form of residual disinfection in the water, which is usually chlorine, and so I, I do wonder if some of it is partially a taste issue, because bottled water wouldn't have that. WS 1

Similarly, the water supplier did not envisage the bottled water market to be any form of a threat, noting that people actually refill their used bottles with tap water.

...I think a lot of people, I see more and more people now just refilling bottles, or they, they get, they buy, they purchase a bottle of water, and then they just refill it from the tap, so I think more of that is occurring. WS 1

However, one consumer representative felt that there might be a small element of mistrust:

I think that's all built up into a little bit of mistrust about their tap water. Because you do hear people saying, 'oh, well, bottled water is better'....Maybe the tide has turned, maybe now people are saying, well, it is all a bit of a con, us paying all that money for water which has come from the other side of the world. CA 2

Furthermore, regulators did *not* view consumption of bottled water as being a threat to the water industry, given that drinking is not the major component of water use. However, in almost all of the interviews, concerns were raised about the environmental impacts associated with consumption of bottled water.

I think where it might be an issue, nationally, is on carbon. Because this is, you know, this water is produced, it's stuck in bottles, often glass ones, which are made at a cost, and it's then trundled around the country. R 1

### **5.2.3 Engagement and Interaction**

#### **Opportunities Available to the Consumer**

On the whole, the interviews indicated that within the water sector, engagement and interaction between consumers and organisations is reactive rather than proactive, in the sense that, if the consumer has a problem, he or she will get in touch with the relevant body, leading to a chain of possible responses.

The water company representative stated that consumers contact the company mainly in relation to bills, whilst they may also get in touch with specific requests for information.

...typically the, the first thing they always get in touch about is bills, and when they receive a bill, and it will be questions, either on, directly on the bill, whether it's on the payment, or why bills have gone up, and I think that that's by far the number of customer contacts we get. The second level engagement will really then be general queries about schemes that are going on within the local community, and wanting to know more about them, or general information about the quality of the water we, we provide, in terms of things like hardness. WS 1

The majority of consumer complaints are related to billing issues, whilst water quality related complaints have been on a decline since privatisation.

water quality...no. We do get [complaints], but I wouldn't say they're high volume. That has definitely decreased since privatisation. WS 1

On the whole, the stakeholder interviews demonstrated that at the micro-level, there is a range of opportunities available to consumers in order to get their voices heard. These opportunities are hierarchical in nature, in that initially water companies themselves have a duty to deal with consumer complaints. If consumers are not satisfied with the ways in which their requests or complaints have been handled, they have the option of contacting the consumer body (CCWater). If the consumer is still not satisfied, the regulators become involved. However, as noted by the consumer representative themselves, unless there is a specific problem, the average consumer will not make contact with their water company, and may not necessarily have even heard of the consumer body, or the regulator that is in place to serve their needs.

We are attempting to raise our profile with consumers, but the average consumer, unless they have a problem with their water, they don't even think about the water company, let alone CCWater. CA 2

We've done some research and most consumers quite frankly don't know we exist. That's not surprising, because you get people [other consumer bodies and regulators in the UK] do some work, and actually identify that the majority of customers, although they may have heard of them, not exactly too sure of what they do. CA 1.

Consumers' lives are very, very busy and they don't, you know... Why does the average consumer need to know about the DWI [Drinking Water Inspectorate]? They would, they only really need to know if something goes wrong and the DWI is expected to sort it out. CA 2

The view held by regulators is that water companies have a duty to serve the needs of their customers.

It is the companies who actually serve the customers, and they must have a good relationship and a knowledge of customers. R 1

Although, in principle it is the duty of water companies to serve the needs of consumers, there was general feeling amongst one of the regulators that, due to the monopoly nature of water companies, there may be a sense of complacency regarding consumer engagement.

I think monopoly companies have a duty to do better in the way they interact and transact with their customers than perhaps they do. R 1

Such complacency was linked with giving rise to possible consumer concerns about service provision:

It's in that transactional arena that I think there is scope for customers to be concerned that they're not getting as good a service as they could, and perhaps should, and that's certainly an area where I believe we could do more to encourage the companies to get better. R 1

The fact that consumers may feel that their needs are not well served by water companies is perhaps reflected in the amount of consumer contact received by the consumer body.

We receive somewhere in the region of 13,000 contacts a year, which is a lot less than the energy companies receive. But still, for a, for a water industry it's still, still quite high and the numbers are actually increasing year on year. CA 1

The consumer body representative said that some consumers may have not gone through the water company's complaint procedure, in which case they are referred back to the company.

All in all, we probably investigate somewhere in the region of one in eight complaints, which is what, 1,700, 1,800 a year, so...CA 1

The consumer representative felt that, while it is their responsibility to renegotiate the needs of consumers (in instances where issues have not been resolved through direct contact with the water company), they can sometimes be constrained by regulatory aspects.

We may offer them a little bit of advice to try and resolve some of the issues surrounding it, but generally speaking, it tends to be more of a... you know, 'yes, the company are right on this occasion, sorry'. CA 1

However, this is not necessarily the case for issues directly related to drinking water, as here, the regulations are regarded as being in favour of the consumer.

Drinking water quality side...we can argue for the water to be tested again and again etc, and the regulations are much clearer and come down on the side of the consumer. CA 2

### **Monitoring of Consumer Complaints**

At a broader level, regulators monitor how water companies handle consumer complaints. Although regulators have service indicators in place to monitor how complaints are dealt with, these measures are not necessarily enough to capture the range of consumer interactions.

We have a series of service indicators, and they measure what they measure...but there's a series of interactions and transactions for a large number of customers there, which disappear off our radar. ....What proportion of contacts with the water company are resolved at the first point of contact, or the first visit? Those are not measures. What's the average cost of that whole service transaction chain? Which is not something we've asked for, and therefore the water companies are...can be a bit siloed in their approach. R 1

With these reflections in mind, it was noted that water companies had a tendency to be somewhat segmented in their approach, driven by regulatory and business-oriented principles rather than the needs of the consumer.

[Water companies] will manage a call centre silo or they'll manage an operational silo, they'll manage a field team silo, they'll manage a contract silo, and each one of those will be driven by a desire to get two or three percent per year cheaper, because that's what we say we've got to do, but it doesn't look at the chain through those, which is what the customer sees. The customer doesn't see that; he sees every interaction with the call centre, the guy who comes out in the van, the contractor who comes out with the big ban, and all the backwards and forwards that occurs around that. And I think that the industry has been managed down the silos rather than from the customer's viewpoint. And that's an area that I do think there's opportunity to challenge the current behaviours and activities.....[Water companies think] "we can manage it down the silos, and we'll manage on the bottom line, and we will hit all the Ofwat targets". That's not enough to deliver what the customer actually experiences in interactions. R 1

### **Organisation Initiated Contact: Consumer Engagement**

The water company representative provided several examples of strategies through which the water company initiates engagement with consumers. On an organisational level, the company consults with consumers about investment approaches and strategic long-term issues.

There are several points where we initiate contact. One is to let them know investments that we've completed, so they understand where their money is going. Another one is when we go out for consultation purposes, and two recent examples of that have been the, our strategic direction statement, i.e. where the company has set out its goals for the next 25 years and what it, it's hoping to achieve. And we consulted with the consumers, as well as the regulator, and also on our water resource plan, which again sets out what we plan to do over the next 25 years. WS 1

At a more local level, the company engages with consumers in order to inform them about localised projects, in addition to community engagement programmes.

At a very local engagement we, through our partnerships with our contractors, who deliver a lot of the key, the big infrastructure schemes for us now, we will have local engagement to inform people of what we're doing, why we need to do it, the timescales, in terms of if there's any construction, and, and that's key. There's a couple of good examples of this. One is we are replacing a large section of the Victorian mains, in Brighton, and through that we've been working quite closely with the shops, and trade associations, and the unitary authority in Brighton, to work out the best schedule of how we achieve the replacement of the mains there. And by shutting down, you know, key streets during quiet times, rather than in busy times in peak summertime when a lot of tourists are around. So we engage at that level for, for big-scale projects, and then we engage in terms of community programmes. WS 1

The water company spokesperson described how the company was involved in several programmes in order to inform consumers, in order that consumers 'can see where their money goes'.

...one of the examples that I can point to recently is we've just replaced the two water mains that go under the Solent, between Hampshire and the Isle of Wight. And the whole of that was actually put on a live web-cam, so it was another way, we thought our, you know, consumers could see where some of that money is going that they're paying on the bills, and we got school children involved, so they could get an understanding of where the water supply on the Isle of Wight comes from. It's not all of it, but a part of it. So we do try and find innovative ways in which, in which we can continue to inform the consumers. WS 1

Public consultation and consumer engagement was highly important within the company, and this was driven by company initiatives, the consumers' interests and regulation.

...in the past it's been generated through company initiatives,. And it...and that's really come from the natural demand of questions that come from the public, for example, if we raise the bills everyone likes to know why you've raised them, and why you've had to. So I think there's, there's aspects there, that the company foresaw this and put a communication programme in place, and some of it, to be fair, will be through regulation. For example, the, the water resource plan has come through from the 2003 Water Act, where we will actually go, where it says we have to go out for consultation on the water resource plan. WS 1

Consumer engagement and consultation was considered to be a challenge for the industry. However the water company interviewed for this project regarded it as being a key part of their strategic plans.

I think it's, it's a growing challenge for the industry. I think it's something, you know, we're, that at Southern Water we're very conscious of, and we're very conscious of trying to keep that information there, so people can understand it, and impart, you know, that this is why we... The consultation on the water resource planning is quite key, and, and that's why we think it's an important thing, and when we do our draft business plan we'll do something so there's some information going to the public as well. WS 1

Public consultation was recognised as an important factor in gauging public opinion and acceptability about future issues.

We have just published our draft Water Management Plan, which is out for consultation, so we have sent it out and it's gone to the public. It's in the public domain how we would, how we're looking at dealing with growth, at least over the next 25 years, in which we mention things such as the wastewater recycling, and how we'll use that to augment river flows, and that we could then much further downstream...desalination, and we've mentioned reservoirs. Now, we've had a mixed bag of responses. So far we haven't had any adverse publicity around the wastewater recycling, at all, and we were...or thought we would, it would have provoked more of a response. So at the moment customers haven't indicated that they're...they're adverse to this, WS 1

In terms of reservoirs, we had one interesting press report come in from a customer, who actually would prefer to have a desalination plant than a reservoir, which seemed a very... I don't think it's a general view, because when I've ever met customers, and done presentations on water resources, particularly during the drought, one of the key questions they always ask is why don't you just build more reservoirs? It rains sufficiently enough in the wintertime for you to capture the water, and just capture it, put it into a reservoir and we'll have it there for the summer. And I think that that is generally the, the, one of the key exceptions, or key exceptions of a customer, and of course the other one is that we are surrounded in the South East by a very long coastline, and why can't we just put desalination in, then we wouldn't even have to worry about any restrictions at all? So I think, in terms of customers' perceptions, I've been quite surprised by some. As I say, with wastewater recycling they don't seem to have, have any adverse reaction to it, and I think the same goes, actually for desalination plants. There was an article in [local newspaper] recently, about the need to put desalination in to meet habitat directives, and again people weren't always adverse to that, and saying it was a valid idea. Although there is obviously the knock-on impact with the carbon footprint, and energy use for those types of schemes, because they will obviously require a lot more energy. And the other interesting one is that we put forward a metering programme, a very aggressive metering programme, in terms of metering everyone, all of our customers in the South East during a five-year period, and there hasn't been an adverse reaction so far. And the consultation started on 1<sup>st</sup> May, but we haven't seen any adverse reaction through that either. WS 1

In terms of strategies for engaging with the public, several different methods were used. For example, in the most current public consultation exercise some strategies require the consumer to be proactive in order to seek out information, for example looking up information posted on the company website.

At the moment, in terms of the Water Resource Plan, well, we've, we've done it on several levels, and we're still going ahead to do this. The water resource plan was very much launched and it was, it was press released, the website was put up, and



people were encouraged to go onto it and look at it, and there was a whole range of documents there, summary documents, and quite detailed ones, on why we needed to do it. WS 1

Within the same consultation exercise other methods are used, which involve the organisation reaching out to the consumer through roadshows, meetings and exhibitions.

And then the other engagement has really been through things like roadshows, and presentation of the plan to county councils, and district councils, and engagement at that level. And then also the scrutiny committees, or parish councils, or groups, you know, and having some public exhibition, so that we can try and engage with the public on it. We've also advertised our water resource planning in all the papers....[we are] trying to actively encourage them to look at the plan, as well as putting the information in the, in the bill. WS 1

However, although a range of engagement techniques are used, there are still challenges.

...we've found that it, it's difficult to engage with, fully with the public, and although we use a range of vehicles, we still find it's difficult sometimes to get the message across to people. WS 1

It was also observed that there is a fine line in terms of engaging with consumers, between being informative as opposed to causing unwarranted anxiety. Solutions, particularly in the case of incident, are to keep consumers informed in a transparent manner as possible.

...it wasn't a message that we could share with the, the public, because of the anxiety it would cause, and people, you know, could even accuse us of scare mongering. So I think that sometimes there is a very fine balance between keeping people informed, and I think that's the one good thing we learnt from the drought, it's that you have to keep people informed, keep them regularly updated and make it transparent, and tell them what you're doing to solve the problem. But deal with reality, in what's actually happening there, and then, and don't deal with 'what if' scenarios. WS 1

### **Community Engagement Programmes**

One particularly positive example discussed was the "Engaging with the Public to Beat the Drought" communication strategy, held during the drought in the summer of 2006, for which the company received an industry recognised award. Here, the water company were very much in the public eye, communicating to consumers at a national, but mostly local level.

...we used all forms of media as best we could, so we were giving interviews, live interviews on the national media...the local media, radio stations, and we actually worked with some of the radio stations, so we had monthly slots with them so that we could give people updates, and people could phone in and ask for what the latest positions were. WS 1

The communication strategy involved updating consumers on a regular basis.

And we also went on a, on a campaign of going round, kind of, scrutiny committees, with the public, where we knew the public would be, and giving water resource updates. And for example, I went, I did quite a few over in Kent, in Sussex, and on

the, over on the Isle of Wight, when we put a hosepipe ban on the Isle of Wight, which was the first one we'd issued since 1976, and to explain why we did it. WS

In these public fora, information about the drought was made contextually relevant for consumers.

And one of the things that we, we always made sure, as well, was we presented the facts. So we showed them the kind of, the water resource position, both the surplus water, and how much water there was in, in the ground. And we, tried to present it always in a way that people could understand, so we presented it by saying, this is where it is now, and this is where we'd normally expect it to be at this time of year, so that they could see how far below, or how low the levels were and why there was a need for restrictions. I'd say, in the majority of cases people understood that, and they could see the reasons for it. WS 1

Also, consumers were given the opportunity to raise questions, which at times featured criticisms. The water company spokesperson stated that here, they would give the consumers the opportunity the opportunity to put their views across, listen, and then explain issues in ways that were relevant to the consumers.

The next follow-on questions were always about, "you haven't invested enough," you know, and "you should have done more", etc, so we, we, had to talk through those issues. And generally we tried to do that in, in an open kind of forum, with questions and answers, so people would... You know, we'd just listen to them and they'd say, well, "why haven't you done a national grid", and we'd have examples of why a national grid hadn't ever come up in the region, and talk about cost, and then we'd try and relate that back to the bill. So we'd try and bring it back to customers. WS 1

On the whole, examples of consumer engagement were described by the water company representative as being highly positive for consumers in terms raising awareness. For example, in the case of communicating issues related to sustainability, and balancing the interests of the local and global environment:

I think it's one that consumers are only just beginning to become aware of, and, and through our engagement, and we do presentations and so we have direct contact with consumers, and some of them are quite staggered by these...by some of these issues, and some of the dilemmas that it sets up within the industry. Although I don't think it's really filtered out to every consumer, as yet...WS 1

Also, the communications approach within the company was noted as being beneficial for technical members of staff, in terms of acquiring the necessary skills to communicate with consumers, and learning what levels of information to project to the public.

...we have a, a dedicated communications team here, and one of the, one of the good things, I think, about that team, is what we do is they, they actually come out into the business. And so they come to people like myself and my colleagues and they, we go on training courses ourselves, to attend media training, and the whole idea is that we actually get the people who make the decisions, and people who implement the strategy, etc, you know, get to explain to the public...And in training us it's to ensure that, because we're very technical people, sometimes we, kind of delve down into the nitty-gritty of the facts, rather than the high level messages. So I think, you know, through them, through their campaigns and strategies, and things they do, how they think about and engage with the, the people who are in the business, it means that we can deliver good, and good clear simple messages, but simple enough so people can understand them, but to get over to people the issues. WS 1

## **Consumer Research and Monitoring**

Generally speaking, interviewees felt that a great deal of consumer research is carried out by the water companies themselves, and by the consumer body (CCWater) already.

A lot of water companies...the bigger ones anyway, are regularly doing their own research on a regular basis, tracking the customers' perception of them as a company but also their priorities for, for future investment. CA 1

The water company clarified this further, stating that they monitor consumer views generally, and especially during incidents in order to tap into consumer feedback and gauge levels of acceptability about company initiatives.

Yes, we do, we use [market research company]. We did, particularly during the drought, to get consumer views on the actions we were taking and, and feedback on those. And we also did that collectively with the other water companies in the South East, and the [unclear] agency, to look at there, you know, was the message getting across about why we needed the restrictions, and the acceptability of those. So we, we do use that sort of information to help, and I'm aware that we step that up at key certain times, at pressure times, when we need to. WS 1

Indeed, within the interviews, several stakeholders applied their insight about consumer research findings to support their views. For example, when talking about consumer priorities and preferences (discussed in Section 5.2.2):

Drinking water quality was number one priority. I don't think there's anything that came out of that research which was entirely unexpected, but certainly that was the, the safe, reliable supply of water was the priority. CA 1

For regulators, consumer research is regarded as valuable in a three-fold manner; firstly in terms of gaining an understanding of consumer views; secondly, in terms of taking those views into account; and thirdly in terms of quantifying consumer preferences in order to steer technical programmes. The subject areas mentioned by regulators included charging, willingness to pay, consumer priorities and preferences and consumer attitudes towards leakages and hosepipe bans. When asked how the findings of consumer research were used within the organisation, the response was that it was used to defend decisions. By contrast, consumer bodies said that they are an evidence-based organisation.

All that we do is based on what consumers have told us, and we're an evidence based organisation. When we first set up, one of the first things in our set up period was to say to consumers, given that there is a new consumer champion and consumer organisation coming along, what would you expect us to do? What we aim for in our policy work is based on the research that we carry out. But it's not me saying, 'oh well, I think consumers think this'; it's consumers have told us in our research consumer fact folder. CA 2

We want to do more and more research into what customers want and we're doing a research on a whole host of areas. CA 1

The consumer representatives in particular recognized the importance of deliberative research, in terms the need for a sophisticated research framework in order to gain consumer responses about the complexities of the water industry

A one off focus group, it doesn't give you an awful lot of, it gives you top of the head stuff in terms of consumer response. But if you do much more detailed deliberative forums with the consumer, you can actually get, consumers can think about things much more, and realise the complexity of the issues, and come to a much more considered opinion. CA 2

The responses are much more considered and, to my mind, more, more successful outcomes of consumer research than ticking a box. CA 2

### **5.3 Summary of Findings for Case Study Five**

Owing to privatization and investments in the drinking water sector over the years, most stakeholders did not consider there were many overriding challenges for the nation as a whole, although in the South-East of England meeting of supply and demand was observed to be key area for strategic long-term thinking especially in the light of the drought of 2006.

In the case of consumer related issues, although some stakeholders highlighted future water shortage issues in the South-East, there was a view that consumers would not be particularly concerned due to the heavy rainfall in the summer of 2007. Overall, the view was that there are few areas for consumer concern, that customers receive high standards of service provision and good quality drinking water, and that consumers expect these existing standards of provision to continue.

Safety, availability and supply of water were regarded as the leading consumer priorities. Here, some stakeholders felt that consumers took their service for granted, and only noticed problems on the onset of an incident. This was considered to be the case for safety and availability in particular – consumers receive a good service, and they expect this service to continue. Thus the notion of consumer expectations was quite prevalent in the interviews. Stakeholders discussed expectations aside from drinking water, such as reliability, trust, knowledgeability and responsiveness on behalf of water companies. Some stakeholders felt that, in principle, there are few grounds for consumer concern (due to good standards), yet concerns may be embedded in broader issues such as lack of choice or the monopoly like nature of water companies.

Trust was a prevalent theme within the interviews, in the case of trust in drinking water itself, and trust in organisations. Stakeholders recognised that trust is easily diminished and often cited negative incidents to demonstrate occurrences were consumer trust and confidence wavered. Similarly, positive examples of incidents were referred to in order to demonstrate methods of fostering trust.

The view taken by the regulators was that water companies have a duty to serve the needs of their consumers, however it was felt that companies may be more business-orientated than consumer-orientated. Allied to this, it was felt that water companies may be more driven by regulatory and business-orientated principles than by consumer needs. However, the water company representative interviewed for this project put forward several positive examples, especially in relation to public

consultation and consumer engagement, thus challenging the views of some of the other stakeholders.

In many respects, stakeholders were well aware of consumer needs and often used consumer research to support their views. Examples of consumer evaluation techniques were extensive, varying between quantitative willingness-to-pay type surveys to deliberative fora. Here, evidence-based policy was particularly prevalent amongst the water company and consumer representatives, whilst the regulators stated that they also engage in consumer research in order to defend their decisions.

# 6 Case Study Five: Amsterdam, the Netherlands

## 6.1 Introduction

### 6.1.1 General facts about the Netherlands

The Netherlands covers an area of 41,526 km<sup>2</sup> of which 18% is formed by water. Since the eleventh century, the Dutch have developed a vast system of dykes, dams, and other water works (e.g. sluices, pumping stations) to protect the country against flooding. At present, about half of the country would be flooded if there were no dykes in place.

Politically, the Netherlands is a parliamentary democracy under a constitutional monarch. The regional government consists of twelve provinces, and the local government is taken care of by 458 municipalities. The oldest democratic institutions of The Netherlands are the 27 waterboards ('waterschappen' in Dutch); local governments responsible for the protection of water, water quality and water quantity. The waterboards levy taxes for tasks like dyke maintenance and sewage treatment.

With a population of 16.5 million inhabitants, the Netherlands is one of the world's most densely populated nations. With more than 65% of the population living in urban areas, the country has a high degree of urbanization. The Netherlands has an open economy, which depends heavily on foreign trade. The standard of living and life expectancy rank among the highest of the world. With a gross national product (GNP) of US\$ 629.391 billion (est. 2005) it ranks 16<sup>th</sup> on the world list, just below Australia, and above Belgium (Encyclopaedia Britannica, 2007).

Fact and figures	The Netherlands
Government	Constitutional monarchy
Accession to the European Union	25 March, 1957
Area	
- Total	41 526 km <sup>2</sup>
- Land	33 883 km <sup>2</sup>
- Water (18%)	7 643 km <sup>2</sup>
Population	16 570 613 (2007 est.)
Population Density	395 /km <sup>2</sup> (484 /km <sup>2</sup> if only the land area is counted)
GDP (PPP) Per capita	\$35,078
Human Development Index	0.947 (2006)
Capital	Amsterdam
Seat of government	The Hague
Freshwater availability	6 100 m <sup>3</sup> /cap

Table 6.1 Facts and figures for the Netherlands

The terrain is formed mostly by coastal lowland and reclaimed land (polders), with some hills in the southeast. Two large rivers, the Rhine and Meuse, flow from East to

West through the central part of the country. The climate is temperate maritime, with cool summers and mild winters, and rainfall in every season. The rainfall average is 790 mm, and it is highest in summer (August) and autumn and lowest in springtime. Climate change is expected to shift the moderate climate into one with more extremes, causing longer dry periods and intensification of precipitation and flooding events. These extreme events are also likely to recur more frequently, which will have various consequences for the quality and quantity of water resources in the Netherlands. Quality is related to quantity, as dry periods cause high concentrations of pollutants in the surface waters. Moreover, high temperatures create environments conducive to algal blooms and bacterial growth. On the other hand, nitrate concentrations decrease during drier periods because less nitrate is transported in water from agriculture. At the other extreme, during intense storms and floods, sewers may overflow and in general, pollutants are transported more easily (Encyclopaedia Encarta, 2007; Segrave, 2006).

### **6.1.2 Dutch drinking water supply**

The Dutch drinking water supply is characterized by high quality and generally sufficient quantity. The annual volume of rain and river water entering the Netherlands is about 110km<sup>3</sup>, which is more than 10 times the annual use of consumers, agriculture and industry. At certain times, however, there are general shortages in the Netherlands, because of low water levels in rivers and insufficient storage or capacity. However, during the last few decades, the drinking water supply has not been at risk during these shortages.

The main sources of Dutch drinking water are ground water and surface water. Approximately 60% of the total supplied drinking water originates from groundwater, and around 40% is drawn directly or indirectly from surface water, such as the rivers Rhine and Meuse. A small percentage is abstracted from natural dune water and bank filtration water (1% and 2% respectively).

The Dutch framework for public drinking water supply is established in the Policy Plan for Drinking and Industry Water Supply. The Drinking Water Legislation comprises rules and frameworks to ensure a secure, high quality, safe drinking water supply. There are currently 10 water supply companies that provide the Dutch population with drinking water. All these companies are publicly owned, and will remain so for the foreseeable future. A law has been passed to prevent any privately owned company from providing drinking water services to the public. Dutch legislation is stricter than the general European legislation (VEWIN, 2007).

In the Netherlands, drinking water is produced at about 220 sites. Dutch water companies produced a total of 1,156 Mm<sup>3</sup> of drinking water during the year 2006 and 54 Mm<sup>3</sup> of other water. Since the early '90's, a number of water companies has shifted their 'other water' activities to subsidiaries. These subsidiaries together produce approximately 72 Mm<sup>3</sup> for the Dutch market, which excludes water production in installations that are operated and maintained for a customer without actual water supply). The table below shows the quantity of water abstracted by the Dutch water companies in 2006 (VEWIN, 2006).

A total of approximately 9.7 km<sup>3</sup> of water is consumed annually in the Netherlands by consumers, agriculture and industry. Besides power plants and industry, households are the water companies' largest consumers with approximately 729 Mm<sup>3</sup>/yr being supplied. The specific household consumption is 123.8 litres per person and day. The average drinking water price is €1,45 per m<sup>3</sup> (in 2006, same as 2005), with a range between € 1,12 and € 2,12 per m<sup>3</sup> (VEWIN, 2006).

Type of water	Abstraction	Percentage
Groundwater	706 million m <sup>3</sup> /year	55.2 %
Natural dune water	10 million m <sup>3</sup> /year	0.8 %
Bank filtration	61 million m <sup>3</sup> /year	4.8 %
Surface water	502 million m <sup>3</sup> /year	39.2 %
Total	1,279 million m <sup>3</sup> /year	

Table 6.2: Abstracted Water

The distribution of water consumption in the Netherlands (private abstraction by agricultural and horticultural sector not included) is featured in the following table (de Moel, Verberk and van Dijk, 2006).

Sector	Consumption (Mm <sup>3</sup> /y)	Percentage (%)
Power stations	6,199	63%
Industry, refineries and mining	2,529	26%
Households	733	7%
Small companies and organisations	297	3%
Water companies	52	1%
Total water consumption	9,810	-

Table 6.3: Distribution of Water Consumption

The quality of Dutch tap water is very high; outbreaks or diseases are hardly ever recorded. No chlorine is needed to keep the water microbiologically safe in the distribution system. Chemical pollution is absent or below strict standards. At a number of production sites the hardness of the (ground) water is reduced by special softening treatment.

The distribution system in the Netherlands consists of 116,000 kilometres of transport pipes and main lines (Geudens, 2005). These pipelines are made of various materials, of which the most common are PVC, asbestos cement and cast iron. From 1993 to 1997 there was an average failure rate of 0.083 failures/km/year occurred. This is very low compared to the failures rates of supply lines in other European countries. Leakage is also minimal, with 4-5% of the transported water lost (including unaccounted for water).

### 6.1.3 Amsterdam drinking water supply

Waternet is a publicly owned entity launched in 2006 as a joint executive service of the City of Amsterdam and the Amstel, Gooi and Vecht Regional Water Management Board (AGV). It was the first water chain company in the Netherlands, formed through the collaboration of Amsterdam Water Supply (Waterleidingbedrijf



Amsterdam, WLB) and the Water and Sewage Department (Dienst Waterbeheer en Riolering, DWR). Waternet produces and delivers drinking water for the city of Amsterdam and several surrounding municipalities and has a remarkable position in the development of the modern drinking water service;

- at its founding in 1853 it was the first drinking water company in The Netherlands
- it was the country's first and currently is the only water chain company
- it was the first surface water company that did not use chlorine in their water treatment and distribution
- it was the last company to install water meters for all households
- it is the initiator of large-scale application of artificial recharge of surface water in dune areas.

Being a water chain company means that besides supplying drinking water, Waternet also expands and maintains the sewage system and wastewater treatment plants. Innovative technologies may increase the possibilities for water re-use and these are currently under investigation.

Amsterdam's drinking water comes from two different sources: river-lake water and river-dune water. Most of the water comes from Amsterdam water supply dunes, which cover 3,400 hectares. Waternet annually produces about 94 Mm<sup>3</sup> of water for households and industries, 66 Mm<sup>3</sup> of dune water and 28 Mm<sup>3</sup> of surface water. The drinking water for Amsterdam is produced at two drinking water production plants: Leiduin and Weesperkarspel. Approximately 70% of the produced drinking water comes from Leiduin and 30% from Weesperkarspel. The drinking water production for Amsterdam is 93 Mm<sup>3</sup> (2003), with a maximum production capacity of 101 Mm<sup>3</sup>. (Waternet, 2007).

<b>Facts and figures</b>	<b>Amsterdam</b>
Raw water source	River-Lake and River-Dune water.
Water works	Leiduin and Weesperkarspel treatment plants
Water supplier (private/public)	Waternet (publicly owned entity)
No water supplier employees	488 workforce
Length of pipe network	2,708 km
Water sales	(94 Mm <sup>3</sup> ) 130 Mm <sup>3</sup> treated
Unaccounted for water	4 – 5 %
Number of consumers	1,000,000
Water consumption	
Household/domestic consumption	156 litres per capita and day

Table 6.4: Facts and Figures for Amsterdam

The domestic consumption is somewhat higher than the national average as Amsterdam has an above average number of inhabitants in lower income groups, who cannot afford water efficient household devices.

#### **6.1.4 Stakeholders**

Representatives from the following organisations participated in this study:

##### **VROM**

The Ministry of VROM (Housing, spatial planning and the environment) is responsible for regulation. VROM-Inspection is a special division of the Ministry, responsible for inspection of compliance with the rules and regulations by the water companies, including the management of the companies, the quality and quantity of the distributed water.

##### **RIVM**

RIVM, the National Institute for Public Health and the Environment advises the Dutch government in the fields of health nutrition and environmental protection. Their research, monitoring, modelling and risk assessment results are used to underpin policy, and inform National and Regional governments.

##### **VEWIN**

The Association of Dutch Water Companies (VEWIN) represents the entire Dutch drinking water sector (ten water companies). As a trade organisation VEWIN contributes to its members achieving their strategic goals. The most important goal of the association is to guard the interests of the water suppliers. As such, VEWIN advises the water companies and lobbies in the international political arena.

##### **Waternet**

The drinking water suppliers are the water companies, in Amsterdam the water chain company is Waternet. Amsterdam's water company exists within the Municipal department on sewerage and water management. In some cases, housing corporations are involved in the drinking water supply when housing is offered with drinking water supply included in the rent.

##### **Consumentenbond**

The largest consumer association in The Netherlands is de Consumentenbond (Consumer League). The organisation protects the interest of Dutch consumers by providing them with information on products and services in order to enable easier and well founded choice making.

##### **Waterbond**

In the field of water, a smaller consumer organisation exists, de Waterbond (The Water League). The Waterbond focuses merely on water, yet aims to integrate all water issues (environmental, recreational, drinking water, legal, political, etc.).

## 6.2 Findings

### 6.2.1 Water Sector Issues

Overall, in terms of drinking water quality, the water company representatives claimed an excellent track record. This corresponds with the views of representatives from both governmental institutions and consumer organisations.

Quality, our benchmark score for quality is excellent. Quality here means the treatment, for that is measured for the benchmark. We have hardly any calamities, no e-coli contaminations or whatever, and that supports the solid image. This year we were "best in class" in water quality, according to the benchmark, which is very convenient. I can now tell the alderman that our rate may be at the high end, but so is the quality. WS 2

Stakeholders said that in the last few decades, there have been few drinking water related incidents in Amsterdam and the Netherlands at large. As noted by the regulator, drinking water related issues are not very prominent in the political arena. Although drinking water issues were not described as generating much political interest at a general level, political debate was described as being incident driven, particularly in cases such as Legionella.

Legionella is an example of something for which there suddenly is an interest. Structurally there is no interest for it in the political arena, but if anything goes wrong, immediately it's top priority, so the perception of risk is very high then. In the past that happened too, at the end of the eighties, with the Bentazon. That triggered an enormous number of reactions. Legionella is still an issue. And finances. But the general discussion about quality, and at the time separated household water, hardly interested politicians, until there were all kinds of signals that all kinds of things threatened to go wrong. And then it is an issue, so it's very incident-caused, you could say. R 1

### Future Issues

According to the stakeholders, future issues that are expected to arise include new pollutants or substances in the water, new products and increasing company mergers in order to ensure efficiency.

Developments could be the ideas about relevant substances, whether the idea about existing substances is still sufficiently based on the assessment of risks and so on, can we expect new substances that could create a problem, hormones, those kinds of things. R 1

An emerging development at schools, businesses, is the availability of water coolers and things like that. R 2

I bought a "Cookeer" during the last renovation of my kitchen, an appliance from which you can draw water at 100 degrees Celsius. [...] I can imagine that if people start to know there is something like that, it will get cheaper, if everybody wants it. Consequently, as a water works you could say, this will also be part of our equipment. R 1

I think that in the next 20 years the Netherlands may have just 2 or 3 water companies. That the consolidation that has been going on for quite a while, the mergers, that they will continue, that there will be public-private co-operation to increase efficiency. WS 3

### 6.2.2 Consumer Issues

Generally, there were not thought to be any problematic consumer related issues. The key priorities for consumers were deemed to be water quality, guaranteed delivery and service (including provision of information). Most stakeholders share this opinion.

Quality, no doubt. Water quality is the most important, we say so ourselves. WS 2

Reliability, safety. As long as nothing happens, people take it for granted, it's just there, you don't need to worry about it...R 1

The drinking water quality is the most important issue for consumers. Consumers know that if it contains substances that should not be there, it will affect their health, and health is extremely important for consumers. So the quality must be flawless. [...] So quality is at the top, and guaranteed delivery too, I think. Water from your tap, 24 hours a day, is important. AB 1

Quality is the most important; water must at all times be fit for its purpose: drinking water. Guaranteed delivery and quality. R 2

So quality is at the top, and guaranteed delivery too, I think. Water from your tap, 24 hours a day, is important too. Customers do not often know the rate, but it is not unimportant. [...]Taste is a major parameter for consumers. WS 3

Delivery, service and rates. It's always about those three elements. CA 1

First and foremost, that they have access to it. [...] The price-quality ratio; you don't want to fall ill from it. But on the other hand, the price is, certainly because it's a primary necessity of life, extremely important. People mainly want everything to be well organised. [The consumer wants] access to that necessity of life, that's the main thing, for the quality to be good. And moreover, you don't want it to be unnecessarily expensive. CA 1

Convenience was also considered to be important to consumers.

Mostly convenience, if the heating element of a washer is covered in scale, it uses more energy, its life will be shorter, the laundry is stiffer, so you need more softener, more detergent. Convenience-related issues, not an immediate health threat, but inconvenient. R 2

The consumer association felt that other consumer priorities revolved around delivery, service and rates.

Delivery, service and rates. It's always about those three elements. CA 2

[Consumers' priorities are] definitely delivery and price. Then comes service, and only when there are problems. If all goes well, you don't need service. CA 2

[The consumer wants] access to that necessity of life, that's the main thing. For the quality to be good. And moreover, you don't want it to be unnecessarily expensive...The price-quality ratio; you don't want to fall ill from it. But on the other hand, the price is, certainly because it's a primary necessity of life, extremely important. People mainly want everything to be well organised. CA 1

Although stakeholders felt that consumers do not seem to know the rates they pay for their water, they were clear in stating that this did not necessarily mean that consumers did not consider their rates to be important.

If you ask people what the water rate per cubic metre is, very few know the answer. R 2

They have never known [the rates they pay] here. Since it was part of the rent, they paid the housing corporation every month, and thought water was free. Now that they get a meter, they know they have to pay for it, but the majority does not know exactly how much. WS 2

Customers do not often know the rate, but it is not unimportant. And the rate is important too, although all consumer surveys show that consumers can often not say what the rate for tap water is. Striking, but they do not know. A consumer pays the bill from the water company quarterly or annually, but he has no idea what a litre of water costs. WS 3

Thus, the stakeholders felt that, although prices are important for consumers, in the Netherlands it is not something people are worried or concerned about. From the perspective of the regulator, the fact that people are not concerned about their water rates is a consequence of general political awareness, where any discussion would be prompted by occurrences in other sectors.

It's interesting that [rates] doesn't play a role in the [political] discussion. You can hardly say that costs are not important. You can't translate that in 'so it doesn't matter what it costs', that is quite the opposite. But well, you have noticed that too, in the surveys, that you can survey what you want, but in the end it turns out that people don't know what they pay for it. So it can't be seen as important, either. If you think it's important, you'll know. So it's a political awareness, it's much more in the total context, I think. R 1

### **Consumer Concerns and Incidents**

When asked about whether consumers were concerned about any issues in particular, stakeholders did not think that consumers thought too much about their water, or that they were concerned about it. The consumer association felt that consumers do not want to have to worry or even think about their water, as people nowadays lead stressful lives.

You don't want to worry about a primary necessity of life, and you are happy if you don't have to. CA 1

Everything that has to do with water in The Netherlands, with a few exceptions, is so well managed and for such a low price, that consumers know little about it and there is not much of a need for it. CA 2

Indeed, consumers had confidence in water quality:

A survey by PQR showed that the respondents were rather optimistic about [water quality], and they thought the authorities inspect water well, as do drinking water companies, so that in fact they found hardly any fault with it. I do not think quality is a great concern. WS 3

Issues such as reliability and safety do not usually raise people's concerns, because they are accustomed to a reliable and safe supply. However, it was recognized that isolated incidents can easily change this perception, resulting in consumer concern.

I suppose [they usually do not worry] mainly because of the fact that nothing goes wrong, that it always functions, that no strange things happen. R 1

Incidents are thus deemed to have great impact on people's perceptions and concerns. Even when incidents are not officially classified as harmful for public health, it may affect consumers' concerns.

If people, for whatever reason, get brown water from the taps, even if it's completely irrelevant for health, then they worry a lot. But only then; for the rest they don't give it a moment's thought. R 1

When prompted about whether consumers *should* be worried about any issues in particular, water company representatives, the ministry for public health and the consumer association did not think there were any grounds for concern, given the good standards of service provision.

[should consumers be concerned about their] about drinking water? No, not as far as we are concerned. We get very few quality complaints. WS 2

From what I know of water quality, consumers have no need to worry. It is monitored quite well. R 2

I think they don't worry because the water is always there, but when you start to ask yourself if something could go wrong, then that's something to worry about. But no sudden concerns at this point. CA 2

One potential problem noted by a supply side representative was that generally for consumers, water is not a high profile issue. Instead, the availability of tap water is taken for granted, so in cases of disruption there is an impact on them.

A general problem is that drinking water is a low-profile product, consumers do not give it much attention. It is an invariable that water comes from the tap always, 24 hours a day. The consumer can hardly imagine otherwise. So if there is a disruption, it has quite an impact on customers. WS 3

In general people trust water, and if something goes wrong, it scares them, I think. People also want a quick solution, and the correct information. R 2

### **Bottled Water Consumption**

According to one water supplier representative, the water industry at large is quite behind about the topic of bottled water, since the water industry assumes that providing information about the excellent quality of tap water will slow down the rate of bottled water consumption. According to this representative this was nonsensical. It was believed that there is little correlation between the quality of tap water and sales of bottled water. Rather, the consumption of bottled water was believed to be driven by ease and availability.

I think the water industry is very narrow-minded about it. As if, when we tell them our quality is better, the use of bottled water will slow down. Utter nonsense. There is no correlation between quality and bottled water. It is the ease and availability. You can carry a bottle with you, but not a tap. That is the difference. WS 1

The public health agency also regarded the use of bottled water merely as the need for a bottle to carry water around with.

I think the reason is not often that people do not trust tap water. I think most people just have a half litre bottle that they regularly fill at the tap. R 2

Another water company spokesperson regarded consumption of bottled water as a novelty. It was not regarded as a reflection of distrust in tap water provision.

It is not a sign of any distrust among customers, not at all. WS 2

Thus, bottled water consumption was not regarded as a threat to tap water suppliers; also company representatives did not believe that the rates of the company turnover were affected by increased bottled water use.

### **Trust and Confidence**

When stakeholders were asked about what steps are necessary in order to ensure appropriate levels of trust and confidence in the service provider, the response from a water supply side representative was that the quality of service needs to be maintained, in order to ensure that the occurrence of incidents are minimized.

Your quality system must be good, so that incidents do not occur. Our quality system is very strict, to guarantee we can maintain the quality. WS 1

Another supply side representative included quality control as an additional important factor, however, broader sector related issues were also regarded important.

If customers [know that] that the drinking water sector is a professional sector, with proper control over quality, in charge of quality and other important aspects of drinking water, trust will grow. WS 3

The regulator's view was that trust is generally manifested in continual, reliable service provision. If negative incidents occur, then trust may be undermined, but it is the way in which these incidents are handled that has a decisive influence on whether trust is hindered in the long term.

You have to earn trust, and it evaporates quickly. As long as nothing happens, you don't give it another thought. But if something does happen, and they realise it's quickly solved, I think in the end it won't have a lasting effect. If it continues to muddle about, if things aren't clear for people about what the problem is, it will have an effect. If it continues to muddle about, if things aren't clear for people about what the problem is, it will have an effect. R 1

Indeed, all stakeholders stressed the importance of open and immediate communication in contributing to the development of trust and confidence, as compared to the lack of communication in eroding trust.

Whenever we must send out the advice to boil water because it contains bacteria that will have a major impact on the customers' confidence. Confidence is very high, so that is no problem at all in the drinking water sector. But we must keep that confidence high. It is vulnerable, so we have to make an effort to keep it at the current level. WS 3

When do you come forward with information and when not? You don't have to do it in the first hour or in the first 12 hours, but don't wait two weeks after an incident occurs. You must say something, otherwise you create not only bad publicity, but your image as a company suffers, because people no longer trust you. CA 2

With regard to maintaining consumer confidence in general, the regulator discussed the issue of privatization. Talking hypothetically, he felt that privatization leads consumers to perceive that the water companies have other profit-related priorities in mind, thus reducing levels of consumer trust in the industry.

If you have a similar process in the drinking water supply, people will think the quality of the company is sacrificed on behalf of the shareholders, of the profit, of strange things, so that would cause a loss of confidence. Then it's important that the image of the drinking water sector isn't like it's seen as much of a sector. Politicians emphasize quality, and not profit and efficiency etcetera, that is to say, more as a second category problem instead of a first category problem. That helps to have more confidence in the way the company treats the, treats the product. R 1

Image is considered valuable for the trust and confidence consumers have in the water supplier.

Yes, image is very important...as part of reliability...Our presentation tells people: they supply a good product, on time too, because of the reliability and sustainability. WS 1

### **Consumer Acceptance**

With regard to consumer acceptance of potential changes to service provision, the view held by the regulator was that, providing they are informed in advance, consumers usually respond in a rational, logical manner.

If people know it in advance, that they won't have water for a day, well, then they do accept it, really. But if it happens without warning, then the impact is much bigger; actually I think that that is not permissible. And yes, I always think that as soon as people have a bit of a feeling for the background of a request, that in general they quite understand. If you ask people to save water in a very dry summer, they'll understand without you having to explain the real rational relations; that's logical then. R 1

If you ask things [consumers], in fact, can't imagine, then it's more difficult. Because, in the past, this whole discussion about drought, in my opinion that's something they couldn't picture. And then it's no use asking people to save water because the Netherlands is drying up. Those are situations that are very directly linked. That they find a causal connection. R 1

Image and transparency were also discussed as being important in fostering trust, thus providing a foundation for consumer acceptance.



[name recognition, trust, informing people is important] to demonstrate what you are doing, how the rates are determined, what the possibilities are. Now the citizens trust you, until it goes wrong. Then you haven't laid the foundation. CA 2

### **6.2.3 Engagement and Interaction**

Overall, consumer satisfaction was considered to be a very important issue by the regulator. Communication and more specifically the provision of information and transparency are believed to influence the level of satisfaction.

Client satisfaction, apart from the product, is the way in which problems are treated. That's predominant for [consumers]. To have a problem that cannot be solved is a reason for dissatisfaction. R 1

If you as a drinking water authority suddenly need to make a large investment, whereby the rates increase, or inconveniences occur, you should provide an explanation as soon as possible. That's what it's all about, simply lots of explanation. Next comes a good customer service office, where people can always go in person. You shouldn't skimp on that. CA 2

[We want to] make the processes more transparent for our customers....If you want to be a really good service provider. Simply from the service provider's perspective. WS 1

Indeed, the water companies were said to deploy successful communication strategies.

It is mostly the water companies that are customer-oriented. [We] are involved in strategy and policy; how to best approach the customer. Water companies communicate increasingly well with customers. WS 3

### **Consumer Initiated Contact**

In terms of consumer initiated contacts such as complaints and requests, stakeholders felt that consumers seem to know where to turn to with questions or complaints about their drinking water (namely their water company and if they cannot get agreement, the arbitration board).

Occasionally we get consumer questions, but it is our policy to always pass consumer questions on to the water company in question. WS 3

The consumer association stated that they were rarely contacted in relation to drinking water quality related issues. Any complaints or enquiries tend to be related to bills and payment issues.

We receive very few questions, comments and complaints about delivery of drinking water or problems with delivery. CA 2

Most contacts are about that; the things about which your water works actively contacts you. They send bills, and when you don't pay, you get an angry letter. After that you get a threat: we are going to cut you off. That's because of these 3 things. CA 1

The water company also stated that they rarely receive consumer complaints. The main reasons for consumers to contact the company were change of address, and the installation of a water meter.

Complaints about quality and pressure are seldom made. We receive a total of 400 complaints in writing every year, from private persons and enterprises. WS 2

Change of address and installation of a water meter are the reasons in Amsterdam. WS 1

Most questions from customers are about the installation of the water meter, because Amsterdam is metered. WS 2

Other stakeholders did not think there were many grounds for complaints either.

I cannot imagine consumers have major complaints about the water quality, or about the rate. If you ask people what the water rate per cubic metre is, very few know the answer.[...] Sometimes people want an independent institute to test, because they do not trust the water company, since they are the supplier and an interested party. But that happens seldom, maybe once or twice a year, at the most. R 2

### **Organisation Initiated Contact**

In terms of contact initiated by the organisation, it was noted that keeping consumers informed is not just a simple matter of waiting for customers to get in touch with the company. Rather, it involves provision of information on behalf of the company also.

It is not just them contacting us, we contact them as well. We have various ways: sending letters, giving information on the Internet, we have a voice response system, so if people call they will know where there are problems. All media types are included. WS 2

### **Information Provision**

Stakeholders regarded provision of information to be essential for consumer understanding and awareness. In some cases reference was made to the Water Framework Directive, and its role in necessitating the need for information.

When talking about drinking water supply, I often notice many people have no idea how water runs from the tap. Information may improve consumers' perception a lot, I think. Look at how people handle waste water, or waste; explain that it may return in their drinking water, and that's an eye-opener. We have done research on medicines. If you tell them: if you take such and such precautions, less will end up in surface water, and in the end less in your drinking water. "Is it in my drinking water then? R 2

The Water Framework Directive does mention the public must be informed, passively or actively. That is why we make our annual drinking water report for parliament and for consumers. It is all on our website, but consumers are not very interested in that. R 2

In terms of the means or types of information provision, there were some differences in opinion amongst stakeholders. The water company representative considered internet services to be important tools for satisfying communication with the customer, as well as improving and maximising the efficiency of the call centre.

We still have a call centre, but that is really multi-channel Waternet customer service. For telephone calls, e-mail and Internet users. As of April 1<sup>st</sup> we have a new website.

We are now moving everything in. After that, we will start with improvements. Now we get so many questions by phone, should we not put some of the answers on the Internet? And then the number of phone calls declines. WS 1

However, the opinions about the usefulness of internet as a medium for providing information differ.

General information through the internet, I see that with other government agencies, which I'm involved in; that only partially works. There are certainly people who look at the internet after seeing the website on their bill, but that's only a small fraction. After the initial enthusiasm about the unlimited possibilities of internet, people in communication are reconsidering this. It works for specific information, forms for example, but not for general information. So a direct approach is best. CA 2

The best way for water companies to communicate to consumers, according to one of the consumer organisations' representatives is by post.

The way they do it now, all connections to providing information by post, is actually the best method. Of course it would be best if they also sent the bill at the same time. Relate it to the bills. If necessary you can address one serious topic once a year. Be brief and to the point. CA 2

### **Risk Management**

Although few incidents occur, the water company does have 'strict protocols' in place to deal with them.

We have very strict protocols for [incidents]. And anyhow, with respect to quality we measure a lot... We have not had any incidents lately. We do have strategies, how to act in case, but I have not yet needed to use those. WS 1

The need to communicate information to consumers about potential problems or interruptions to supply was also discussed by the regulator. However, with regard to particularly 'risk-related'<sup>2</sup> events it was noted that tensions may arise between communicating in an open and transparent manner and causing outright consumer concern.

Years ago, when the quality of the sources was significantly worse, this was an issue, too. On the one hand I have to use the risk of drinking water supply as an argument to improve the wells; on the other hand I can't exaggerate it so much that people are afraid the water they drink is no good. There's an area of tension. R 1

I think it is important to communicate to people you're working on it, it has your attention, that you have that fairness, take those measures you think can help, but that you shouldn't go too far in doing that, also because you don't want to worry people needlessly. It is hard to predict anyhow if something like that will happen. That's the risk too: the moment you start explaining more explicitly what risks there are, where the dangers are, you also generate unwanted interest. R 1

In the case of incidents, stakeholders felt that informing the public is essential.

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<sup>2</sup> It is important to note that there were no notable risk-related drinking water quality issues in Amsterdam when the interviews were conducted. Here, the interviewee is drawing upon previous experiences in order to explain the regulator's view.

You also have to communicate properly, at the right time. WS 1

It was felt that direct communication in case of incidents is necessary in order to enhance or prevent damage to their credibility or image.

People will always figure out what really happened, so it's better to reveal it yourself. And then say what's being done about it. That's the goal in terms of incidents. [...] You don't have to do it in the first hour or in the first 12 hours, but don't wait two weeks after an incident occurs. You must say something, otherwise you create not only bad publicity, but your image as a company suffers, because people no longer trust you. CA 2

Transparent communication about scientific uncertainties was also noted to be an important issue by the government agency for public health.

If you are well informed about the problem, you can tell [consumers]. And if you're not, tell them also. Just like we did a while ago, when we advised people to boil the water. If you know something is wrong, but not exactly what and why, you can say that, I think. So you are not disguising the facts. You are working on it, the picture is not entirely clear yet. R 2

Here, risk management strategies and forms of communication were considered important in order not to alarm the public.

That also depends on how you make it known. You must make a risk assessment, and do some risk management. Communication is a very important part of that.... If you cannot find out quickly, you will have to tell people: "There is a risk, we do not know exactly how big, but as a precautionary measure we advise you to ...". People generally appreciate that, I think. R 2

The consumer associations also felt that the best way of dealing with incidents and alleviating consumer concerns was to offer open and honest explanations, together with solutions.

Always [offer] an explanation and quickly, always quickly, be honest in explaining what happened. People will always figure out what really happened, so it's better to reveal it yourself. And then say what's being done about it. That's the goal in terms of incidents. CA 1

The water company also acknowledged the need for transparency and considered timely provision of information as a means to enhance satisfaction and reduce complaints.

Especially in this sector you must be as transparent as possible. WS 1

If we have to carry out work, if we flush the mains, we always send a brochure. We used to write it in 4 - 5 languages, and hoped a son or daughter would pass it on. On the day itself, a sound truck would pass the message from the street in various languages. You have to inform people about work, or you will get more complaints. WS 2

### **Consumer Engagement**

Forms of consumer engagement discussed by a supply side representative included campaigns such as 'Water Week'.

For about 3 years now, we have had the Water Week, which we use to put water higher on the agenda. Every year the Water Week has a specific theme. Last year it was Water and Health, this year Water and Exercise. We try to link water to a positive concept. This year the message was: if you do sports, you exercise, you walk, you need to replenish the fluid in your body. Drinking water is perfect for that, for it is cheap, and healthy, it does not make you fat, it has no calories. WS 3

The aim of such campaigns is to raise consumer awareness about the positive aspects of tap water.

[our goal is that] customers see tap water in a positive way. Not that they start to drink or use more, that is not our primary goal. We want people to have positive associations with the words 'tap water'. WS 3

The water company stated these campaigns are not used to raise brand awareness as in other sectors, but rather to convey information about how reliable the company is. Perceptions of reliability are deemed to be important to the image of the company, and public relations exercises are considered important in raising these perceptions of reliability.

The Water Week was the major first campaign. Brand recognition etc. is useful in markets with competition, where creating a brand preference is important. We have no use for that, we only need to convey our reliability. I think you can ride trends, such as health, where the role of water is important. WS 1

As part of reliability [image] is very important. WS 1

A campaign to create awareness amongst young people is TENQ; trendy water coolers designed for use by teenagers to fight obesity among children. The water coolers have a monitor that shows short water-related clips. Scholars can tap water there to fill their bottle with fresh, cold water (still or sparkling) for € 0,10.

They are introducing water vending machines at secondary schools (Tenq). A few hundred schools now have such vending machines. WS 3

The food and health sector recommend less soft drinks and more water. They give information about it at schools, and schools have those coolers, where pupils can fill their bottles. R 2

Other forms of engagement discussed included smaller-scale, community oriented approaches to communicate information about metering.

Metering enables you to contact an entire neighbourhood, to talk to people about means to save water. We do that in community centres, mosques, everywhere, on a large scale. By means of social evenings, we ask if we can come in at a meeting, we have stands at events in neighbourhoods or districts. WS 2

The company also communicates to their consumers about their activities at a broader level.

We inform our customers about our international activities. The funny thing is that we are particularly active in countries that appeal to Amsterdam's foreign citizens: Surinam, the Antilles, Egypt, Indonesia, the Gaza strip. WS 2

Here, the water company also discussed how they inform consumers in an open and transparent manner.

We thought it risky that people pay money for development aid, for which they also pay through their taxes, so we asked ourselves: "If we can improve the quality of life considerably in these countries, what are we willing to spend on it?" People now pay €1.33 per cubic metre. WS 2

### **Consumer Evaluation**

In terms of evaluation exercises, many stakeholders said they were actively engaged in monitoring consumer needs. The water supply representatives discussed how they monitor consumer perceptions and behaviour regarding drinking water once every three years.

Once every three years VEWIN conducts a TNS-NIPO-survey. That is in fact a large survey on drinking water. It is presented to a panel of about 1,000 consumers, by computer. People have an online connection to TNS-NIPO, and they are sent surveys on various subjects. The questions vary widely; e.g. on the drinking water rate, opinions on quality, on confidence, the perception of bottled water compared to tap water, what water companies do about the environment, or nature and environment, how they experience that. We are also investigating water consumption. We know that the consumption in the Netherlands is now 124 litres per person/per day. But we also want to know what the water is used for. We have a panel for that as well. WS 3

The company also has consumer evaluation practices in place to monitor consumer satisfaction with service provision. However, it was acknowledged that the company does not consult about consumer needs per se, as it was noted that consumers are not necessarily interested in the subject, presumably due to good service provision levels set by the company.

Once every three years we have those benchmark surveys, and we do the occasional survey ourselves. Not in a way that tells us what customers want, though. Customer surveys prove that customers are not interested in water at all, I think. It is a utility, a necessity; it should function, that is all. The quality is guaranteed in the Netherlands anyway. WS 1

Also, all communication between the organisation and the consumer is evaluated.

Customer satisfaction is cross-surveyed, e.g. the metering project...In the image survey we ask, in line with the benchmark: "In the past year you were in touch with the water company; what is your opinion?" If people's water meters are changed: "did you find our employee polite? Was the reading correct, according to you?" All communication is evaluated, to find out if customers are satisfied. WS 2

[Effective communication towards the consumer] is the water companies' responsibility. I do think the important communication processes are evaluated. The Water Week, organised by VEWIN, is currently being evaluated. WS 3

Although the company had not investigated consumer needs previously, at the moment of the interview, a larger scale survey was set up to monitor consumer views.

We shall establish if those [issues such as water metering] really are the most important processes for customers. Based on the results, we will formulate questions....There are several research approaches. Round table sessions. To establish which elements are important. A lot can be copied from the energy sector, for it deals with the same processes. Energy is a commodity too. WS 1

We will assess what we really want to know about our customers...Based on that, we want to design a survey, and after that we will decide on the frequency of the survey. The design must be ready in September. My only involvement with the survey is, that it will give me an insight in how our customers will appreciate new products and services. I find being in touch with consumers very important....Households can not switch to another water company, to say it bluntly. WS 2

Indeed, when asked what consumer oriented goals the company would like to achieve within the next five to ten years, the response was that initiating change should be done in a transparent manner.

Make the processes more transparent for our customers. I think that is the most important, that our customers can co-produce...Especially in this sector you must be as transparent as possible. What problems could people foresee? WS 1

### **6.3 Summary of Findings for Case Study Five**

The Netherlands has, over the last century and a half, built up a solid drinking water system, which enables reliable supply of high quality drinking water to the whole population. While previously attention was mainly aimed at optimizing the technical system for optimal water quality, water sector issues nowadays revolve primarily around maximizing efficiency and customer satisfaction. To improve efficiency gradual merging of the water companies has been going on for the last decades and is expected to proceed until two or three large water companies are left. The benchmark is gaining importance to measure and compare utilities' performances. To maximize customer satisfaction, water companies want to know which services their customers find important and what service levels they prefer. In this respect, water companies face the dilemma of providing water as a commodity versus providing water for comfort. In the case of Amsterdam, Waternet is inclined to expand their products and services in cooperation with other parties.

The consumer issues that arose from the interviews are quality (safety), reliability (of delivery), other services, communication and rates. Quality is not regarded as an issue by the consumer as long as nothing goes wrong. The stakeholders identified a growing need for comfort and convenience on the consumer side. Consumers are regarded as rather passive people who seek comfort and ease, and who do not want to worry or think about the basic necessities of life. They are aware of health risks imposed by consuming low quality tap water. They expect a quick solution if something goes wrong. The provision of information and related to this, transparency are high on the agenda of all interviewed stakeholders. Consumers wish to be informed well, in advance if possible, and always honest and accurate. At the same time, the level of consumer involvement is generally low. Interest in drinking water is very incident driven. A risk in this respect are reports in the media,

which could have a devastating effect on the sector. The growing importance of information in societies stimulates the impact of media reports. One of the consumer organisations regarded societal developments as a prerequisite for absorption of information (like the trend in society of greater awareness of climate change).

The main concern according to the stakeholder is to maintain a good relationship with the public; to them it is important to keep a good image. This increasing size of the water companies may be a threat to the relationship between the utility and the consumer. The personal approach that characterizes small scale companies will inevitably be substituted by the anonymous assembly line feeling that is specific for large scale institutions. The possibility of personal contact and in any way a personal approach to the consumer is considered to be appreciated by the consumer. The trend of outsourcing customer relations to call centres set to return, since people seem to prefer a personal approach and personal contact. Complaints are not voiced in large numbers and people generally know where to turn to if they have question or complaints about their drinking water. Ideally, a 'Water House', a desk where people can find everything related to all integrated water issues' would be available to consumers for all water related issues.

Trust and confidence are believed to bring about acceptance and compliance with the end users' goals. There currently is a rather solid trust in the water companies, from both the consumer side as well as the government side. Related to trust and confidence are openness (transparency), and image, which is amongst other things based on previous experience (long history of good quality product). The increased use of bottled water is not perceived to be a trust or confidence issue; it rather has to do with convenience, image or lifestyle of the person using it. Despite the high levels of trust, the interviewees realise that trust is easily damaged and difficult to repair. Strategies to increase or stabilise trust are sought. It is believed that trust and confidence are currently based mainly on people's previous experience, and it can be fostered by means of providing information. Communication is considered essential for fostering trust and acceptance and can to a large extent influence satisfaction. The interviewees are interested in improvements in communication strategies that appeal to the consumer. With the low levels of interest that the water sector is facing, this is a rather challenging task

In summary, Waternet is in search of ways to objectively assess what consumers want to improve efficiency and customer satisfaction. The key questions are which factors and levels of service provision determine satisfaction. Communication has been identified as one of the key factors in improving satisfaction. Moreover, it is important for fostering trust and confidence, and thereby creating a solid, good image. Since consumers generally have a low interest in drinking water, the second challenge lies in determining the means of communication and the provision of information that are effective.



# 7 Case Study Six: Lisbon, Portugal

## 7.1 Introduction

### 7.1.1 General facts about Portugal

Portugal was officially founded in 1143, with the Portuguese Republic being founded in 1910 (Government of the Portuguese Republic, 2007). The north of the country is mountainous while there are rolling plains in the south. Portugal has 10,536,000 inhabitants and is moderately urbanised, with approximately 57% of people living in urban areas (United Nations Development Programme 2006).

Lisbon is Portugal's largest city and primary port and is located on the Tagus River at the river's confluence with the Atlantic Ocean. The Lisbon region is 2,750 km<sup>2</sup> in area and has a population of 2.1 million people. The municipality of Lisbon has an area of 84 km<sup>2</sup> and a population of 556,797 people (Câmara Municipal de Lisboa, 2007) and thus is much more densely settled than its surrounding region. The city has been the capital of Portugal since 1256.

Fact and figures	Lisbon, Portugal
Government	Region and capital of Portugal
Accession to the European Union	1 January 1986
Area	2,575 km <sup>2</sup>
Population	2.6 million
Population Density	
-Lisbon region	1010 / km <sup>2</sup>
-Lisbon municipality	6629 / km <sup>2</sup>
GDP (PPP) Per capita	\$19,629
Human Development Index	0.904
Capital	Lisbon

Table 7.1: Facts and figures for Portugal

The country has a maritime temperate climate with cool wet conditions in the north and warmer drier conditions in the south. The mean annual precipitation of Lisbon is 703 mm, with the city experiencing dry summers and wet winters. Across Portugal, agriculture makes up approximately 78% of total water use. Domestic water use is 10% and industrial water use is 12% of total water use (Food and Agriculture Organisation, 2004).

### 7.1.2 Lisbon Drinking Water Supply

EPAL (Empresa Portuguesa de Águas Livres) has been responsible for water supply to Lisbon since 1868. It supplies 350,000 people directly, and indirectly via municipal services it supplies a total of 2.6 million people spread over an area of 5,406 km<sup>2</sup>

(EPAL 2007). EPAL supplied a total of 211,237,773 m<sup>3</sup> of water in 2006, and has the capacity to supply approximately 1,047,000 m<sup>3</sup> of water per day (EPAL 2007).

### **7.1.3 Stakeholders**

Representatives from the following organisations participated in this study:

#### **Águas de Portugal**

Águas de Portugal is a public holding company and major utility in Portugal, serving about 75 % of population (approx. 7 million people) in water and wastewater. The main objectives of Águas de Portugal include management of water resources, promotion and development of the water infrastructure, as well as cooperation with national and international organisations.

#### **EPAL**

Empresa Pública das Águas Livres (EPAL), is the largest water supplier in Portugal and is the public water supplier for Lisbon and surrounding areas, and is responsible for collection, treatment, supply and distribution of water. The company supplies 35 municipalities in the Greater Lisbon area, to a population of approximately 2.5 million. The company is a fully owned subsidiary of Águas de Portugal.

#### **IRAR**

The Instituto Regulador de Águas e Resíduos (IRAR) is the Portuguese institute for the regulation of water and waste. In accordance with national guidelines, their responsibilities include regulation of water supply, wastewater treatment and disposal, and solid waste collection, recovery, treatment and disposal. IRAR engages in structural regulation of the sector, regulation of operators' behaviour, benchmarking and dissemination of information to the public (IRAR, 2007).

#### **DECO**

DECO is the Portuguese Consumers Association. The association works to inform, defend and represent consumers.

#### **APDA**

Associação Portuguesa de Distribuição e Drenagem de Águas (APDA) is the Portuguese association of distribution and water drainage. APDA is a non-profit organisation that represents and defends the interests of organisations responsible for public systems of water supply, wastewater and related stakeholders. APDA are also involved in advancing knowledge and research and development of issues related to the quality and quantity of drinking water supply, in addition to drainage and treatment of wastewater.

## **7.2 Findings**

### **7.2.1 Water Sector Issues**

The Lisbon water supply was viewed in a positive sense, and most stakeholders stated that water sector issues in Lisbon were different compared with those of the rest of Portugal.

The situation in Lisbon is completely different from the situation in the country in general. In Lisbon the situation is clearly better. R 1

In Lisbon, we have, in fact, good water quality. The water from [the water supplier] is good, but that is not true for the entire country. WS 1

The perspective of the industrial representative body and regulator was that in Lisbon, water quality issues and water control issues have improved greatly.

In the Greater Lisbon area, in terms of quality, there aren't many problems. Countrywide, we can say that, in essence, 90% of the Country nowadays has good quality water, due to the latest investments we have had in this area. R 1

Here in Lisbon, I think there may still be some issues that have to do with the acceptability of the water, because in terms of the quality of the water and of the water control that is carried out, in that respect everything that is required by law is done and even more than that. R1

The managing body of Lisbon has a very complete operational control programme, its operation is a modern operation with superior technical expertise and we know that the managing entity is working on this, namely on the installation of more re-chlorination points that will enable the chlorine to maintain itself at more reduced levels to fulfil specific distances. In other words, it clearly improves the acceptability of the consumer regarding the aesthetic aspects of the water. R1

I think that here in Lisbon one really has to work, to move up from a very good level to an excellent level, it's making a qualitative jump. We are already at such a high level that the jumps are now very small. Therefore, all that was really important to do has obviously been done. R1

According to the water distribution company, there were two main challenges facing the water sector in Lisbon, and Portugal, namely financial challenges linked with the overhaul of the infrastructure, and water shortages.

The first has to do with the actual infrastructures and with the issue of us having, over the last few years, in the last decade, invested billions in the entire network.....And the other problems are the climate changes. That is, the impact or the management of the extreme hydro-meteorological events, namely droughts. WS 2

### **7.2.2 Consumer Issues**

Regarding consumer views about tap water, the view held by the water supply company was that consumers can be distrustful. Thus a key challenge was to enhance consumer confidence about drinking tap water.

... people are somewhat distrustful. But in any case that is the big challenge, to increase the consumption of potable water. ....The challenge is to increase

consumption, increase the confidence of the client with regard to the consumption of tap water. WS 1

As with the other case study sites the main issues deemed to be of importance to consumers, in terms of priorities and preferences were water quality, a reliable supply and cost.

[consumers] want to have water at home in quantity and quality....In other words, we want water at home and we want it with quality. If possible, at a price that the consumer considers accessible. R 1

To know that there is water in the tap, to know that it is always available and that it never fails when he/she needs it. And to know that it is of good quality. WS 1

The industrial representative body also noted that consumers are particularly sensitive to issues relating to a reliable supply and water quality

People are basically sensitive to two things: the circumstance of having or not having water – therefore, in essence, the availability 24 hours per day, 365 days per year, for people is an important factor. That is, the availability of use. In other words, they are sensitive to interruptions in water supply. IR 1

He noted that there are various psychological determinants that may give rise to such consumer views.

They are also sensitive to quality problems, particularly those that are perceived by taste or by sight. Therefore, coloration of the water – brownish, whitish waters -, which sometimes may not be associated with any qualitative problem or anything harmful to health, but which has a complicated psychological effect, as well as taste problems – excess chlorine, and tastes that originate from badly installed pipes. ....but basically I would say those are the two issues. On the one hand, the availability, on the other hand, some quality problems of immediate perception – and not, sometimes, those that are relevant. But the fact is that people cannot, by drinking a glass of water, know whether it has more sodium than the norm, but can perceive if it has coloration. IR 1

According to the water supply company, consumers did not have major worries or concerns about water supply issues in Lisbon, as long as they had adequate provision.

In Lisbon I don't think they are [concerned]....Because we have a network that allows us to define alternative means or, in situations where that is not possible, shorten as much as possible the repair time. Therefore, I think that worry, in the true sense of the word, does not exist. The clients in Lisbon know that there are a lot of works from [WS 1] and that we have carried out a lot of network renovation. There are a lot of construction sites spread throughout the city. One sees works from the water company but, I don't think its cause for concern. In fact, in the client satisfaction studies that we have carried out, supply is not a concern. What they want is to always have water, isn't it? And to have short repair periods. But I don't think that it's cause for concern. WS 1

Taking into account the fact that standards have improved considerably, the view held by the regulator was that, as a result of these improvements, consumers should in essence have greater confidence in their tap water.

If everyday there arrives water at your house with levels of chlorine that you cannot smell or taste, you will certainly gain more confidence in the water....If you realize

that the management body used to only perform the analyses required by legislation but now, in addition to those, washes and disinfects the reservoirs, carries out discharges some time before in the network, and has operational control, from the capitation until the reservoir and in the distribution network, naturally the consumer, when he/she is informed of these situations, has added confidence in the end product. R 1

Many stakeholders discussed consumers in terms of 'before' and 'after' improvements. There was a view that, previously Portuguese consumers did not have reliable access to safe, potable drinking water, whereas they now take water for granted.

We take – and I think that in Portugal, fortunately, we have reached that point -, take it for granted that when we open a tap water runs. That is generally the rule. Which means that there are not many Portuguese – except for some situations that still take place in our country – that consider the possibility of not having water at home running through the taps. R 1

There was a view that consumers have 'forgotten' their previous situation, and do not value or consider the importance of the service they receive, particularly in terms of safety.

What I would like is for the consumer to understand the importance that a good water service has for his health. But he has already forgotten that. Because some consumers – and I'm one of them – some time ago had to boil water or had family members that died, as children, because the water was of such bad quality. In Portugal, until about 30 years ago, infant mortality, often resulting from problems with the quality of water, was more than 12 per thousand. Today it is one of the lowest in Europe. The perception of the importance of the service, it is an issue that I would really like people to consider. I believe it is part of a culture. It has to do with the fact that most people have a pessimistic perception. WS 2

In addition, there was a view that, due to the low price of water, consumers do not value water or use it efficiently. This was regarded as a key strategic issue facing the industry.

I would say that the problems that the industry faces, of a strategic nature, have to do with the price of water in particular. The price of water is a very low price, which makes people value very little the good and, therefore, they do not use water adequately. Because they pay so little they also end up not being very demanding, although - particularly in metropolitan areas - consumers are becoming increasingly more demanding. And it's good that that continues, because that puts pressure on the industry itself to also be more demanding and to respond even better to those demands. But I think that the issue of price is a key issue to solve this problem. IR 1

In addition, there was a call for consumers to gain a positive understanding about the service that they receive.

I would like people to understand that, the importance of what we nowadays take for granted. WS 2

There was also the observation that, over the years, the issue of water quality has become more important to consumers.

I think that over the years – and this is obvious from the press as well as from the concerns that people express - the quality of the water is an increasingly important

topic. And of course it is, because every day one hears about discharges from industries or from other activities of human society, at times with greater or lesser control. But the quality of the water is clearly an important issue. R 1

The fact that consumers may have concerns about the quality of tap water was regarded as being unfounded at times.

...it is a concern that they have, sometimes unfounded, by saying that they do not trust the quality of the water. Because as a rule it is not so, the quality of the water in Portugal has very acceptable levels. But that demonstrates that the consumer is worried about the quality of the water and sometimes even thinks that he/she doesn't have good quality water, and as a result he seeks an alternative. Therefore, it is an issue that is important to them. R 1

Other stakeholders see consumers as being concerned about water quality and cost.

They are worried, firstly, about the quality. The second point is about water rates. CA 1

Currently [the most important issue for consumers] is the price. Why? Because [consumers] already have quality. I think that if it didn't have that quality...the problem could be something else. As such, the most important aspect, in my opinion, is the price. WS 2

Thus, according to the consumer association, water quality and cost are important issues, whilst the water management representative held the view that quality should not, theoretically be an issue for consumers due to the good standards of service provision. His view also suggested that water quality is the benchmark in terms of consumer issues, that if the consumer *does* have good quality, they will find 'other problems'; yet concurrently, he also proffered the impression that consumers take their tap water for granted.

...do you think of anything in particular when you go and get water from the tap? You don't think of anything, you go and get some...what is water? Water is that which comes from the tap, nobody thinks about it anymore. It's like switching on the light... WS 2

Similarly, it was thought that consumers do not necessarily think about tap water quality or the processes involved in treating and distributing water, unless there is a visible problem.

What he/she is concerned about is the price...The average consumer does not have the perception of the quality of the product that is distributed. He/she knows that it is a problem when someone becomes sick or when the clothes become dirty. He is unaware of the work behind it and of the quality that the water has. He/She is only aware of the price. WS 2

## **Trust**

Price of water was linked to consumer trust by the water management spokesperson.

That situation leads to the need to promote trust which is linked to price. At the moment I think that what concerns the consumer the most is the price. We have to use trust to awaken the consumer's conscience regarding the reasons for the price. WS 2

According to the water supply company, the organisation was trusted by consumers because they had a good track record with few problems.

[the company has] many years of activity and it is a company that people trust because, in fact, there have been no problems. In Lisbon, fortunately, there are no problems related with shortages of water... And, therefore, I think that people trust them. There are no problems, that is, it is extremely rare to open the tap and no water comes out or water comes out that can not be drunk. I think it's mostly that. If there is no water, then a number of (perhaps not so good) issues arise, related with some lack of communication on our part or with the water bill. WS 1

With regard to consumer perceptions about the industry as a whole, although trust was not explicitly mentioned, it was alluded to.

People recognise, they have the perception that that company is good, not because they have read the annual report, but because they have that image. WS 2

### **Bottled Water Consumption**

Given the overall improvements in water quality, increased consumption of bottled water was regarded as a somewhat paradoxical behaviour.

I think that the constant increase in the consumption of bottled water, which some people use exclusively for consumption, may seem like a paradox when considering the evolution of the quality of water from the public distribution network. Because, if on the one hand the consumption of bottled water has increased, on the other hand the quality of the water from the public distribution network has also improved. Therefore, in principle, it should be the opposite. R 1

We have a very acceptable quality of water. In terms of drinking water what we would like is to increase its consumption, in comparison with the consumption of bottled water, of knowing how we can transmit to people "*drink tap water*". WS 1

Consumption of bottled water was also regarded as a problem generally by the consumer association. Some stakeholders queried why consumers were willing to pay considerably more for bottled water as compared to tap water, whilst at a national level, bottled water consumption was linked to lack of trust in tap water.

The increase in the consumption of bottled water is exponential. People consume ever more bottled water, at a time when water for human consumption is increasingly better than the previous situation. Of course, there continue to be problems, in certain areas. And so, the two things don't fit. CA 1

The only strange thing with regards to the issue of bottled water is that, in a country such as Portugal - in which people always think that it is too expensive to pay, for example, an average of 50 cents per cubic meter -, they are willing to pay two hundred times more for the same cubic meter because it is bought in a bottle. IR 1

People choose bottled water, as they stated in answer to our survey, because they do not trust, or distrust, the quality of the water of the public distribution network. They think it is water that has no quality. This is the main reason. R 1

The truth is that, in Portugal, the study demonstrated that it is precisely the aspect of confidence that is at stake here. That is therefore, for us, without a doubt, the decisive point where we should focus our attention. R 1

This perceived lack of consumer confidence was discussed further by the industrial body representative. He felt that lack of confidence was manifested in previous consumption practices and information provision that ultimately leads to behavioural adaptations.

I mean, when in a country – twenty years ago - it was recommended that water for babies, or for this or that, should be bottled, because people didn't have confidence in the water that arrived at their home through the tap, if that confidence isn't transmitted to them, if it is induced – and that is what happens in general – it ends up leaving, shall we say, in some segments of the population, specific type of behavioural approaches. IR 1

I think this has a lot to do with issues of perception, more of a psychological nature and of the history of that person with water itself. There are people that still lived in environments where they were forced to boil water and control the quality. Because Portugal came out of a situation – in terms of infrastructures – which was not in the least favourable, thirty years ago. I myself still remember the typhoid fevers. And, therefore, the people that may have lived in some proximity to these problems may eventually believe that by drinking bottled water it will provide them with some additional safety. But I would like to completely demystify that situation. IR 1

However, bottled water consumption was not regarded as a threat to the drinking water supply industry.

Although it may seem as if they could be rivals, I don't consider them as such. They are mainly habits of a social nature. IR 1

I would say that it is not significant. I don't think it is significant in terms of sales volume. WS 1

I don't perceive bottled water as our competitor, it isn't. I don't think it makes sense to drink it in many places, unless one likes to drink it...I think it's absurd, for people to spend money on a good that they can obtain in another way that is much cheaper. WS 2

No, it's not a problem. We don't see bottled water consumption as a problem for the water sector. The bottled water market is a market that exists at a worldwide level. At a worldwide level, the consumption of bottled water has increased. R 1

From the perspective of the water supply company, consumption of bottled water was linked with successful marketing and advertising campaigns.

I think that has to do with the advertising campaigns. The incentive to buy bottled water is considerable. Because perhaps you're invaded 10 or 15 times by advertising about bottled water and with [the water supplier] that doesn't happen. The purpose of advertising is precisely that, to drive the consumer to behave in certain ways. And I think there has been a huge investment in bottled water that we have not kept up with, from the point of view of consumption, through some advertising or interventions in that sense. WS 1

When asked why consumers choose bottled water over tap water, the response from the water supply company was that this needs to be evaluated through direct research with consumers. In other interviews, bottled water consumption was assumed to be a lifestyle or cultural phenomenon rather than an issue about trust in tap water per se. It was noted that although people drink tap water at home, in



restaurants bottled water is consumed. It was also suggested that bottled water is a sign of hospitality

People that at home drink tap water but when they have guests, for the guests its bottled water. CA 1

Other reasons for bottled water consumption also included lack of knowledge on the part of consumers, and lack of information, and to a lesser extent taste preferences.

In many cases [consumers purchase bottled water], due to lack of knowledge.... maybe people dislike chlorine, there are issues of taste. But I thing that generally speaking it isn't that, it's really an issue of lack of knowledge. WS 2

In addition, the notion that consumers may not like the taste of their tap water was linked with the assumption that consumers lack information about what is good quality drinking water. Again, consumption of bottled water was linked with consumers lacking knowledge about their tap water.

There is in fact a lack of information. And that lack of information derives from things as diverse as people not liking the taste of water and thinking, as a result, that the water is not good. Or not knowing what the quality of the water that they ingest is, and since they are not sure they consume bottled water. CA 1

### **Future Issues for the Consumer**

For the water sector as a whole, stakeholders considered water efficiency, conservation and general management as important issues for the future.

If we start today to worry about the next generation, guaranteeing that we use water efficiently from the exploration and consumption point of view, we are guaranteeing the availability of water for longer. WS 1

It was acknowledged by the water supply company that such issues would require changes in consumption behaviour, but that they were at the very initial stages of approaching this issue. The view held by the consumer association was that progress needs to be made on water efficiency strategies.

Although one has made relative progress in terms of the quality of the water for human consumption, the truth is that in terms of the efficient use of water we have made almost no progress. CA 1

We had years of drought but this year the sun has been very scarce and so people say: "*but why save water?*" But there are habits that have to be ingrained. Because if we don't create habits from the very beginning, when years of drought visit us again, we won't be prepared to do it. CA 1

From the perspective of the water management group, the demand for quality, price, organisational transparency and social responsibility were also deemed as important future issues for the consumer.

I think there will be an increasing demand for companies to show evidence – and this is not an innocent term – of contributing to what we can call cooperative responsibility towards sustainability. I think that the image, the perception that the consumers have of the company is an important thing. I think that in Portugal this will be given increasing emphasis, outside of Portugal it is stronger. WS 2

And, so, we have to start changing behaviours right now. Because ingrained behaviours are very difficult to change. And so we are not going to be able to change overnight. Unless that is achieved through financial compensations, which means drastically increasing the price of water, and which are highly unpopular measures. We also aren't going to want that, otherwise we'll have a revolution in the water industry. We have to start acting today, to be able to, in the medium to long term, see some results. CA 1

Water efficiency was considered especially important for consumers in the light of the fact that future projections have shown that Portugal will have great asymmetries in the availability of drinking water.

The water management spokesperson also felt that, although consumers might be concerned about 'well publicised' issues relating to sustainability, these broad concerns did not necessarily translate to individual changes in behaviour, or indeed the recognition that that consumer behaviour is a contributory factor at a global scale.

The consumer is worried about generic problems...like climate changes and all the more, shall we say, publicized ideas in the media. I think that the concern has a lot to do with that, about the future. Everything that has to do with sustainability worries the consumer. But in that respect it doesn't worry him/her as a consumer because, I don't know if he/she is making the connection between his/her actions....But during his normal day he doesn't make the connection with what he does. In other words, the person that worries about climate changes may actually have three cars, or build a house with an enormous glass area and which has an enormous cost. WS 2

From the perspective of one regulator, changes in the sector within the next five years or so will mean that indicators will improve and consumers will become more aware about improvements in their water quality.

In other words, the indicators are going to improve and with the visibility that we'll be giving to that, the population is going to become aware of the fact that, if over the last few years there has been an evolution, then it's because the water is increasingly better. R 1

When asked how consumers would respond to these changes, the response was as follows:

You know, more difficult than changing behaviours, changing mentalities is a very complicated thing. So, we cannot intend within a short space of time to be able to change overnight. R 1

The water supply company spokesperson felt that consumers would respond well to such changes.

I would say that they can only react well. In other words, if they know that they can save water, lower their water bill and, on the other hand have more information about the water that they are drinking, about the levels of service that the company is committed to and so on, they can only react well. WS 1

Cost of water was also regarded as an important future issue by the industry representative. He felt that prices would increase, particularly in Lisbon.

I don't believe the price will shoot up, nationwide, in general. I'm not saying it's going to happen in the same way everywhere. In the metropolitan Lisbon area, perhaps, it will increase very little but in the city of Lisbon it will surely increase a lot. IR 1

The majority of people, when the quality and the availability of water increases, tend not to give it any importance, and to take it for granted. People are generally much more sensitive when there is a decline in that quality and availability and perceive it as natural - and that is probably the way it should be – they perceive it as natural, when everything is running well. Therefore in this case I'm convinced that there will be a trend for everything to run much more smoothly in that aspect, and for systems to be more reliable. I would say that from that point of view, clients will tend to focus their concern more on the issue of cost and less on the issues that concern them today, such as quality, the lack of outages, the number of outages, the hours that they are without water, etc. IR 1

In terms of consumer reactions to such changes, he felt that the ways in which information is communicated to consumers essentially impacts acceptability.

The majority of people are never very willing – and in fact there are surveys that prove this – to pay more for the service they already have. This is how it is essentially: even if one says that that marginal cost is to increase the reliability of the system, that it is to increase the quality, usually people when they already have that service cannot value that increase in the same way that they value the increase in price. And they say: *“well then if it's to give me more quality I prefer to pay the price I had and give me the quality I had, because I'm already satisfied”*. Therefore that is the perception that we have. IR 1

The price is something that has to be explained to people in a different way, more in terms of sustainability, for example: *“for your son or grandson to likewise have quality water, we need this amount to maintain, preserve, renew and make new investments”*. More than say *“I'm taking care of this to improve quality for you now”*, which for the consumer is not perceivable, because he/she is no longer aware of that problem. The majority of people, after having the service, are not sensitive to increases in the level of quality. That's the way it is. It is a domain where, as long as the European requisites are met, what else can we offer? Newspapers can be published in black and white or in colour, milk can come with chocolate or with flavour. In relation to water that is not the case. The idea here is that clients, from certain levels onwards, are not susceptible to quality increases. They want that quality, at an increasingly lower price. IR 1

### **Consumers, Technical Knowledge and Provision of Information**

Provision of information was a central theme in all of the interviews conducted amongst the stakeholders. The water supply company representative felt that, generally people were well informed about water related issues. He felt however that information could be improved in order to alleviate doubts and to inform consumers about the water treatment and supply process in general.

I think that people are well informed and know what is important. They know that it is important to have water in terms of quality, quantity and pressure, and to have good quality water. However, we can improve other information aspects, so that people won't have so many doubts. So that they don't think that it's all some water that is full of funny little creatures. And so that they also understand that, to guarantee that regularity and to guarantee the quality of the water, this has a cost. One needs to treat the water. Nobody drinks water that falls from the sky. I think that people are beginning to have that notion. WS 1

Thus, the best way of responding to consumer concerns was to provide information. The belief held by the water management representative was that consumers do not have the pre-requisite knowledge about technical issues in order to have an informed opinion. The issue of taste preferences was used as an example to illustrate this view.

I think that the average consumer does not have the knowledge from a technical point of view to understand what the... The typical consumer is the one that demands sanitary quality, but when the water tastes like chlorine, protests. So he/she doesn't understand that, in a network such as the one that we have, the fact that there is a slight smell of chlorine means that not only was the water treated, but that it is immune to any contamination that may occur accidentally. WS 2

The fact that there are residual chlorine contents is a way of defending the consumer. But he/she is able to demand quality and at the same time protest against that and phone to say he/she doesn't like it. He/She doesn't have the technical conscience. WS 2

Similarly, the regulator suggested that lack of technical knowledge gives rise to other worries or concerns, especially in relation to taste.

Unless the consumer is an informed consumer from a technical viewpoint, I think he is worried about, like any other product that is available for purchase somewhere, whether he/she likes the taste or not, whether it looks okay or not, whether it smells okay or not. I mean, the normal consumer, the layman that does not understand anything about the quality of water wants to drink the water and wants the water to taste good. R 1

When the water management representative was asked about what water sector issues have direct implications for consumers, he stated that the subject of contaminants (such as pesticides) was often raised by consumers. However, due to new technology, there were no problems in that domain. He felt that any concern was most likely due to lack of information provision on behalf of the company rather than specific water-related issues as such.

Well, there are those that talk a lot... about the new contaminants. Perhaps the ignorance is mine, or the difficulty is ours due to a lack of information, but I attribute much more importance to these problems than to the new contaminants. Nowadays, with membrane technology, I think that if another strange contaminant turns up, it will be relatively easy to control. WS 2

From the perspective of the regulator, provision of technical information to consumers was seen as a major step forward in raising consumer awareness.

If I say the following, "*the water has a specific amount of contamination, we're going to treat it and then we're going to carry out preventive disinfection but, we're going to carry out a preventive disinfection here, and then we're going to carry out another preventive disinfection after 1500 oIR 1000 metres and then another and another...*" Then, in addition to the water meeting the parametric values, it is still acceptable to the population because it doesn't taste like chlorine. These are the technical details that will certainly have an impact on the attitude of the consumer. R 1

### **7.2.3 Engagement and Interaction**

## **Consumer Research**

In terms of monitoring the views and needs of the consumer, the regulator had been actively involved in consumer-oriented research. In one survey it was found that, at a national level, slightly more than 45% of Portuguese drink bottled water, essentially because they do not trust the tap water, or because they think that the water from the public distribution network is of poor quality.

This is at a national level, yes. This is therefore an important signal that the population has given the sector and the competent authority. It's up to us, if we think we can, as a rule, trust in the quality of the water that is distributed in the distribution networks, inform people that perhaps what they think is not quite so. That is the work we're going to do. R 1

Within the regulatory context therefore, the value of feedback based on consumer views was viewed as an important indicator for industry. In this case, the stakeholder observed that it is important for industry to respond and inform consumers about disparate issues.

However, the water management representative acknowledged that little research is carried out in relation to consumer-orientated issues. Furthermore, whether such research was considered as a priority was considered to be questionable.

I admit that there are very good, exceptional researches carried out in Portugal but I don't know if those institutions have been working a lot with regard to the perception of the consumer. I believe that there is a lot of work to be done in that sense. I believe that – I don't know, maybe I'm wrong – there is a lot of information deficit about the direct consumer. I don't know if that is something of a priority – for that it would be necessary to understand what the problems are and if that is a priority – but for me it wouldn't be. WS 2

When asked what types of consumer research would be of interest:

It would be interesting to know how I could get them to understand the importance of what they have. How do I transmit that message? WS 2

## **Consumer Engagement**

The view held by the water supply company spokesperson was that consumers have a good relationship with their company, although it was acknowledged that there are calls for more communication.

We conducted a study about client satisfaction and clients have a good relationship with us. They appreciate [water supplier]. Some still look at us as a more traditional company, a little heavier, but reliable. So I would say that there is a good relationship. They complain about the little communication that we carry out, but it's a good relationship. There is a relationship of trust, [water supplier] is a strong brand. WS 1

Generally, the consumer association thought that water suppliers should have more contact with their customers, other than solely for the purposes of payment.

...any intervention that is planned in advance must also be communicated to the citizens. [information needs to be] transmitted between the managing entity and citizen, which must be used for something else rather than simply saying: "Now pay!". CA 1

According to the consumer association, the decisive factor in alleviating consumer concerns was through the provision of information.

Information that is related with the consumer's own education. Because one thing is the consumer not being informed because the information is not provided to him/her, another thing is the consumer not knowing where he/she can go to obtain that information even though it is available. CA 1

[the best way to reduce concerns is to] provide the consumer with information. Not wait for the consumers to go to the Town Hall or the municipal services to try to obtain that information. Because, nowadays, with payments via ATM or the Internet or payments via bank transfer, all contracts are enacted at a distance. People do not have time to go to the managing entity, to the Parish Council or Town Hall and spend an entire morning or afternoon there. CA 1

As previously noted, information provision was regarded as a key issue, in that there was awareness that consumers want more information. The industrial body representative felt that consumers required more information about billing and costs.

There is currently another area of – I wouldn't say conflict – but of concern for consumers, which is the issue of costs, billing and information. More information on outages, more information on costs, more detailed invoices, more regular notifications about planned water outages, about overdue payments. Let us say that there is an area of consumer information and of a commercial relationship with the consumer that, especially in urban areas, clients are becoming noticeably more concerned about. IR 1

Provision of information was also regarded as important in response to the fact that since the inception of the new regulator, information was not as easily accessible to the average consumer as previously.

Since [the regulator] assumed its responsibilities, the information has not been made available in exactly the same way, in such an interactive way. [The regulator] provides on its site, for download, an Excel file that people need to download and they need to already know how to manipulate those values. It also comes with a colour code, but it isn't prepared to be used by the average consumer, as had been done up to that moment by the Water Institute, which provided the data to the Environment Institute....there we took a step back. CA 1

The method of information provision is evidently one-way. Difficulties in providing the consumers with information were acknowledged by the regulator themselves. At a regulatory level, it is a requirement for them to make information available, however it requires the consumer to be proactive in order to seek out that information.

It is necessary to transmit the information – that the publication of data is a compulsory aspect, that it is part of our inspections and is, in addition, an object of regulatory offences when not carried out in accordance with what is defined by law. But this implies a pro-active attitude from the consumer. That is, the consumer has to go to the location where it is compulsory for the information on the quality of water to be posted up. In some way, this may be a mechanism that is not very effective. For that reason, we have to be the ones to deliver the information to the consumer's house. R 1

To this end, regulators are involved in generating new methods for providing information, based on consumer research.

We're going to try to enter people's houses with that information. It may be through television, radios, newspapers, magazines and also through the invoice...[We will] carry out similar studies again, so as to see whether our measures are being effective or not, if they are being efficacious. Otherwise, we'll have to come up with other solutions. But we think that the most obvious solution at this moment is trying to get that information to people. R 1

Evidently, it is clear that they do not think it is enough to simply have information available, and expect that consumers will seek out that information; instead, regulators recognise the need for other forms of information provision in order to raise consumer awareness.

Now it is our role to try to motivate the consumer in making the most correct choice, informing him/her of the real quality of the water that he/she has. Therefore, that is where we are going to act. And, after improving those levels, there will certainly be a response from the consumer. What is going to be done has not actually been defined, but in terms of marketing, of advertising, we will have to do something to get that information to people. It is not enough for the person to become aware, we have to push that information into people's homes and therefore, in that respect we're also going to carry out information campaigns, possibly in the press, on the radio, on television. That has not been defined yet, but it will be necessary, for people to actually become aware of what is at stake. R 1

However, the view maintained by the consumer association is that, content-wise the information is not very practical or helpful for consumers. On the other hand, the water management representative raised questions about whether consumers actually do want to be informed, and what they would do with this kind of 'one-way' provision of information.

I sometimes wonder if people want to be informed. If you went to the mailbox and saw there a pamphlet from [the waster company] attempting to explain something technical, what would you do with it? [The water company] sent it by post to everybody, some months ago, the technical explanation, although in an accessible language, of why some problems occurred. WS 2

I think that people with regard to some things don't want to be informed, or rather, aren't interested. Can it be due to education? It can, but education today is already everything. WS 2

With regard to the efficacy of public information campaigns, it was felt that people would not necessarily retain information.

I think the classical forms of propaganda are important but one ends up retaining very little. And in Lisbon in particular... What is the name of the company that distributes gas in Lisbon? There are a lot of people that don't know. If they want to know they check the bill, don't they? What this means is that people from Lisbon don't retain, because there are a lot of things, there is too much information for too little time. As a result I sometimes have doubts as to the efficacy of these campaigns. WS 2

It was clear that some stakeholders thought that one-way engagement was not adequate, however there was little mention of the value of two-way forms of engagement.

Either we expect people to rationalise [information], and then the approach is singular. Or we have a communication campaign, based on the consumer's perception. In that

case it is different. In that case, how does he/she understand? If you expect most consumers to understand through reasoning, regardless of the number of pamphlets that are printed, only if you made them, tied to a chair... That way it might work, but it has to be one by one! WS 2

### **7.3 Summary of Findings for Case Study Six**

Although there are seasonal issues which result in water shortage issues in Portugal, owing to improvements in the sector in Lisbon, there are fewer challenges now than in the past.

In the case of consumer related issues, the chief priorities and preferences were considered to be good water quality, a reliable supply and cost. There was a view that consumers can be somewhat distrustful about their drinking water, and that there was a need to enhance consumer confidence in the quality of their tap water. Indeed, the fact that the water sector and water standards had greatly improved, yet consumers were still concerned was regarded as somewhat inconsistent. Allied to this, some felt that consumers now take water and the service they receive for granted, that they do not value water, thus having forgotten about water shortages prior to the improvements in the water sector.

Consumption of bottled water was considered to be problematic. Some felt that consumption reflected lack of trust in tap water, whilst others questioned why consumers chose to drink bottled water when standards of tap water had improved. Here, it was felt that consumers lacked information about tap water.

In terms of future water related issues that would have implications for the consumer, the issue of water efficiency was a recurrent one. It was felt that progress was required in water conservation strategies, and that consumers would need to adapt their behaviour in response to water issues.

The stakeholders that participated in this study demonstrated awareness of the need to interact with consumers more effectively, and believed provision of information to be a key solution in order to alleviate consumer concerns, increase knowledge about water related issues, and raise consumer awareness generally.



# 8 Case Study Seven: Riga, Latvia

## 8.1 Introduction

### 8.1.1 General facts about Latvia

Latvia is located in the North-East of Europe on the Eastern coast of Baltic sea, sandwiched between the two other Baltic states: Lithuania to the South and Estonia to the North. Latvia borders Russia and Byelorussia in the East. It has total area of 64,589 km<sup>2</sup>, with 531 km of coastline. Latvia has a population of 2.3 million and has been a member of the EU since May 1, 2004. The official state language of Latvia is Latvian, although Russian is also widely spoken because of the numerous ethnic Russian and Russian speaking minorities (up to 40% of population).

Latvia has a humid continental climate with temperature highs in the summer reaching up to 30°C and lows in winter falling well below freezing. Latvia's proximity to the sea brings high levels of humidity and precipitation, with average annual precipitation of 633 millimetres in Riga. The humid climate provides water to over 3000 lakes and 12000 rivers.

Latvia does not have vast natural resources. Timber and wood products create the bulk of Latvia's exports, along with machinery and equipment, metals, textiles and foodstuffs. Latvia's largest exports partners are UK, Germany and USA. In recent years Latvia has been enjoying a double-digit GDP growth rates and a shrinking unemployment rate largely due to booming real-estate sector and workforce migration. Latvia has a thriving private sector, which accounts for more than 60% of GDP.

<b>Facts and figures</b>	<b>Latvia</b>
Government	Parliamentary democracy
Official language	Latvian
Independence	May 4 <sup>th</sup> 1991 (from USSR)
Accession to the European Union	May 1 <sup>st</sup> 2004
Area	
Total	64 589 km <sup>2</sup>
Population	2,291,000 (estimated 2006)
Population Density	35 /km <sup>2</sup>
GDP (PPP) Per capita	\$18,005 (2006)
Human Development Index	0.845 (2006)
Capital	Riga

The capital Riga is the largest city in Latvia. Riga has the area of 307.17 km<sup>2</sup> of which 48.50 km<sup>2</sup> is water in form of rivers and lakes. It has the population of 727,578 (2006 estimate) with 1,148,003 inhabitants living in the greater metropolitan area. The population density in Riga city is 2,382/km<sup>2</sup>. The population has been in steady decline since the early 1990's as with Latvia as a whole.

### **8.1.2 Urban water supply characteristics**

The water resources in Latvia enable abundant supply of quality drinking water across the country. Groundwater is declared a valuable natural resource by law in Latvia. Drinking water is almost always obtained from groundwater sources where the water quality is good and stable. Although the quality of drinking water is often worsened by aging water infrastructure like water pipes from obsolete materials. The only cities in Latvia where drinking water is partly obtained from surface water sources are Riga and Ventspils (Environment Review of Latvia, 2001).

The quality of water for consumer use has to be monitored by the local municipal or communal provider of drinking water services by law. The Society Health Agency (Sabiedrības veselības aģentūra - SVA) carries out regular auditing and monitoring of water quality at various points in the water supply infrastructure across Latvia. Quality control for water that is intended for manufacturing or other industrial usages has to be carried out by enterprises and companies that use the water (SVA, 2007).

National law in Latvia regulates the standards for the quality of drinking water. According to SVA, Riga city and the Riga region have the best drinking water quality in all of Latvia. The results of drinking water quality monitoring done by SVA show that 59.3% of the samples taken do not meet physical and chemical standards set for drinking water quality. 3.34 % of the samples do not meet microbiological standards (SVA, 2007).

### **8.1.3 Riga urban water supply**

Drinking water and sanitation in Riga is supplied by Riga Water (Rīgas Ūdens), a company owned entirely by the municipality of Riga. Riga Water operates approximately 1300 km of water pipes and has several water works stations. The biggest water works operation is the water pumps and treatment plant "Daugava" which is located on the outskirts of Riga city and is used for gathering and treatment of drinking water from the Daugava River. The plant was built in the 1970's and had an original capacity to supply 180,000 to 200,000 m<sup>3</sup> of drinking water a day but as the standards of quality for drinking water rose in the 1980's, the capacity had to be downscaled. The plant is situated 14km from the source in the Riga Hydroelectric Power Station reservoir. Other water works stations are used for gathering water from underground sources.

Water from the treatment plant "Daugava" is supplied mainly to consumers in Riga on the left bank of river Daugava. Consumers on the right bank are supplied with water from groundwater sources in Baltezers, Zaķumuiža and Remberģi – all situated outside Riga city limits. Water works in Baltezers has been in operation since 1904 and at the moment is undergoing heavy reconstruction. Riga Water supplies anywhere from 150,000 to 170,000 m<sup>3</sup> of drinking water a day to it's consumers in Riga city of which 75,000 – 85,000 m<sup>3</sup> is taken from groundwater

sources from depths of 50m. At present the price of water supplied by Riga Water is 0.54 euro/m<sup>3</sup> + 5% VAT (a reduced rate) (Riga Water, 2007).

#### **8.1.4 Water quality issues in Riga**

Quality of drinking water in Riga has improved in recent years, though many consumers still have complaints about the quality of the water. Resolving quality issues is complex problem because of the varying standards and quality in the water supply infrastructure in Riga today. Riga Water has its own quality control laboratory for efficient and fast evaluation of water quality. Regular tests are also carried out, both at the water sources and at various locations across the city taking samples right from the tap (Riga Water, 2007).

#### **8.1.5 Stakeholders**

Representatives from the following organisations participated in this study:

##### **Riga Water Company**

Rigas ūdens (Riga Water Ltd) is owned by Riga city council, founded in 2004. Historically always water supply has been owned by municipality and its main goal has been to supply water for Riga city. Riga Water Ltd supplies approximately 15,000 clients, including households, enterprises and organisations.

##### **Baltijas Vides Forums**

Baltijas Vides Forums (Baltic Environmental Forum, BEF) is an NGO. It was founded in 1995 by the Baltic Ministries of Environment, Germany and the European Commission. Operating in the field of environmental policy, BEF was formed to act as a mediator between the European Union and Baltic environmental stakeholders, thus strengthening co-operation amongst the Baltic environmental authorities. In 2003 the BEF team founded NGO's in Latvia, Estonia, Lithuania and Germany, in order to continue their work in the field of environmental policy implementation after EU accession. Their aim is to participate in the development and implementation of multi-lateral projects that will further strengthen the regional environmental record, with a focus upon environmental issues such as nature conservation, water policy, waste management, climate change, energy and chemicals policy.

##### **Riga City Public Utility Regulator**

Latvia has a multi-sector utilities regulatory system. The Public Utilities Commission (PUC) is responsible for the economic regulation of energy (electricity and gas), telecommunications, railway and postal services. The regulatory system also includes municipal regulators responsible for household waste management, water supply, sewerage and heating industries. These are regulated on a local governmental level by institutions established by the respective municipalities.

##### **Public Health Agency, Ministry of Health**

The Public Health Agency (PHA) is a state institution that is monitored by the Ministry of Health. PHA fulfils the functions of key epidemiological legislation, their

key objectives being to investigate and assess the health status of the population and health-related risk factors; to coordinate implementation of the public health strategy, and to establish standards for effective public health practice, as well as to facilitate their implementation.

## **Latvian Association of Water and Gas Consumers**

### **Department of Investment, Ministry of Environment**

The Department of Investment is concerned with the development of projects, with an EU focus.

## **8.2 Findings**

### **8.2.1 Water Sector Issues**

According to the water supplier, the primary water sector problems were heavily intertwined with political, cultural and economical changes. Most notably the shift from the Soviet era was noted as providing a transition in the water infrastructure.

...there are a lot of problems. The main problem is that we are, in fact, one of the three countries that was in the Soviet Union and now is the participant of the European Union. The cultural and economical levels are totally different. The biggest problem is that for a while we lived in a totally wrong system where the construction industry (concerning economical principles) was screwed up therefore our system was wrong as well. WS 1

Fifteen years ago the main concern was to rearrange the system so that it could be similar to the world standards. That is the main problem. That's very superficial. If until the occupation there were economical principles, the system, they were logical and logically grounded. Then for approximately 50 years there was no logic and no technical logic (regarding working engineers). Here, we are unique that we have made a transition from that illogical view and now we are almost on the level. Almost in a normal system. WS 1

The regulatory view was that water standards in Riga are generally better than Latvia as a whole. Particularly in the case of water sourced by the Daugava water station, it was noted that advanced technological processes result in the provision of good quality drinking water that is well within the guidelines set by regulatory bodies.

I can say that in Riga we have the best water in all Latvia. Riga is different because the delivery of water does not cause any problems. It's provided corresponding to the regulations. The problems are in the little enterprises in the countryside. Actually, after these results the water in Riga is the best. Well, if not the best then very good. R 1

[We] have access to good drinking water. Let's say, the newly built regions, let's say Imanta. Imanta gets the water from Daugava. The Daugava water station, they have different kinds of filtering. The water of Daugava has been filtered until the level when it is drinkable. This water is really with good taste qualities and there are no problems. R 3

In terms of regulation there are no major problems. We can talk about some specific technical problems – the maintenance of piping, the installation of new lines, the development of new drainage systems and things like that and at present it does not concern the consumer. It could be of concern for the future consumers, those which have not connected yet. But those who are connected, they are getting it, this service, let's say, the right quality. R 3

### **Future Issues**

Throughout the interviews several stakeholders made reference to the absence of 'registry'<sup>3</sup>, and this was noted as one of the key problems facing the industry, with important implications for the consumer. Absence of registry was linked back to the Soviet era.

The Russian technologies were good but only on paper, in reality they were bad... There was no registry, norms, indicators, well, there were some indicators but they were not appropriate for our present-day requirements. WS 1

The implications of these issues for consumers is placed primarily upon payment related issues. Previously, consumers paid considerably less for the water, however with the introduction of alternative systems to account for water consumption there are key implications for rising costs.

The sum of money people had to pay for water (per year) was identical to the sum of money they had to pay for a bottle of vodka, logically no one considered it to be a very important product which should be economized therefore the registry was totally messed up. Even when the norm was set to 2501 and even 3001 – people did not pay any attention to that as the money was still trivial and it did not influence the family budget but when the price for water started gradually increasing, when water got its value, the necessity for registry became apparent, and it turned out that the system (inside the house and outside the house) needed reconstruction as it was totally unsuitable. WS 1

From the perspective of the water supplier, one of the immediate plans is to overhaul the water registry situation, through the implementation of water meters.

During the coming year, in fact in next 3 years we want to completely solve the problem regarding water registry and that is our main problem. The rest of it could be 15, 20 and even 120 years away. WS 1

[Interviewer: what could be the reaction of your clients?] Of course positive, it is theirs, as I said, this registry system, the pipes are not built for the system, the clients want this system. It's not done to make it cheaper but to have clarity about the payments, what and why they have to pay for. It could be even more expensive but that's how they are going to see what they pay for, they will be able to control themselves. WS 1

Although it was felt that consumers would have a positive response to the changes, in terms of future issues and implications for consumers, price was regarded as a key issue (implications for the consumer are discussed more in-depth in section 8.2.2.).

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<sup>3</sup> During the Soviet era, there was no accounting system in place for water consumption, since there were no water meters in place. Previously water consumption was calculated on a 'flat rate' principle, whereby consumers paid for their water depending on the number of people living in apartments or the area of the apartment.

Water metering and registry issues aside, stakeholders felt that future water sector issues would be technical in nature, particularly in the case of the development of a pipe infrastructure, and connecting consumers to these systems.

I think that in the next 20 years the situation with consumption is going to be alright and the main concern will be about the technical situation. WS 1

At the moment in Riga there are several regions without any water supply as such. Until this moment Mezaparks had this problem. They didn't have a united water pipe and they also didn't have a united drainage system. Now it is being developed. There are some more regions, tiny regions. I think this service; I am talking about the system of water and drainage in general because it is a connected question. R 3

Generally in Riga the situation is not so bad. This is the main problem. The construction is developing. The regions are developing. The new ones and the old ones as well and we have to connect them to unitary water and drainage system.... The most important question now is to connect all the consumers in one unitary system. R 3

Also, investment in new technologies was considered important for the future.

... it's known that in Riga half of the necessary water is taken from over ground waters, so if these over ground waters are going to be polluted with different substances, then the filtering is going to be more expensive. We have to be rather economical with these resources and protect them in order not to invest very big money in filtering of this polluted water. NGO 1

Again, it was felt that future implications would impact consumers in terms of rising costs.

This question could become important because of the expenses and the rise of expenses. If the filtering technologies get more expensive, then the service gets more expensive and the consumers pay more and still it is the question of trust. NGO 1

In addition, the environmental regulator discussed how they were involved in numerous projects that would have long-term impacts, therefore the focus is upon future issues.

The essence of the projects differs a lot – in Riga it's the communication distribution channels but if we are talking about the rest of the places then most importantly we'd like to develop technologies over there – de-dusting, the filtering of waste water, the preparation of drinking water. R 2

Here, the implications for the consumer would also be reflected in water rates, with the viewpoint that, if the consumer is to have improvements in the future, they will have to pay for it.

Of course, the consumer will be influenced by the rates because all the investments reflect in the rates. The concern is mostly for the consumers living in Riga. But we also have to think about those areas where it is impossible to connect.... We provide people with the service, it's our job. And only then we can start talking about the improvement of the service. But those living in the developed cities have to understand that any improvements will cost them some money. Then we can start talking about saving or some other things. But the most important is the fact that we cannot get any improvements without any financing. As this is a public service then the people have to pay for that. R 2

The funds of Europe do not exist all the time and they are in some particular amount. There will be time when this financing will stop and then we'll have to think not only about the regular expenses of maintaining but also about the further investments and the rates play a very important part here. The rates have to be steadily increased, thus making some savings for the future investments. The consumer does not look that far. They do not understand the importance of the question and the validity of the raise. All these 20 years the consumer has the rights to ask what is happening and why. And the answer to this question is not that we are experiencing inflation but we have to mention the fact that we need some savings for the future development. R 2

### **8.2.2 Consumer Issues**

They want the water to be cheap, in good quality and of course, they are interested in non-stop delivery. NGO 1

With respect to the key consumer related issues, from the regulatory perspective, service provision and water rates were of chief importance.

They are interested only in two questions, that's for sure – the quality of the service and the rates, because these things influence them directly. R 2

...the priorities are different from region to region. In my opinion, for instance, in Latgale they are mostly worried about the rates but in Riga they are worried about the quality of the service. We have to look at it keeping in mind the income and the social group. R 2

The NGO noted that consumers and end-users have differing priorities, in that end-users are interested in the processes and technicalities, while the consumer is interested primarily in the end product.

in my opinion, [consumers] are mostly interested in the quality of the product. Do the water providers have problems too? Well, that's another question. They look at this problem in general and they are interested in the technical things, the quality of the water pipes, the quality of the dirty water and so on but the consumer is mostly, in my opinion, interested in the quality of the final product or how he sees the quality. The social factor is rather important here. NGO 1

### **Water Quality and Ageing Pipe Networks**

Water quality was noted to be a critical issue for consumers.

The quality of water, I believe, is the most important thing. To receive the service in the appropriate quality. R 3

According to one NGO, consumer mistrust of tap water quality and the standard of water pipes was considered to be a key consumer issue.

Judging by the projects carried out by the Baltic Environment Forum, especially in connection with the regional governments and the delivery of water, the main problem could be the mistrust in the quality of water and the quality of water pipes. This problem is actual not only in Riga but in all Latvia. Of course there different indicators but the most widespread is the heightened concentration of iron ion and it can be clearly seen if the water yellow and dirty. People don't like that. NGO 1

...it is some kind of mistrust. The situation is being controlled and there are special programs but in my opinion [the quality of water is] the main concern for the consumers. These are their conceptions and prejudices. NGO 1

Indeed, the impact of pipes on water quality was noted as an important issue by most of the stakeholders.

I believe that the questions are concerning the quality of water inside the house. As I said before, these pipes are if not fully polluted then overgrown with iron oxide and thus the water is not in the right quality. Rather often people complain that the water is yellow. It's not the fault of the water, it's the problem of the inner network – the network is old and it has to be replaced with new pipes. R 3

One regulator was quite clear in stating that the issue of water quality was the direct result of poor quality pipes rather than poor water quality provision on behalf of the water company. When the water supplier was asked about the issue of water quality, he queried whether quality of provided water was an issue, as opposed to the poor pipes, which serve to downgrade water quality.

I don't think it is quality but it could be quality, but in most of the cases it's not the bad quality of Riga's water but the bad quality of the pipes, it could be the quality. WS 1

From the regulatory perspective, poor pipes were also noted as an issue, although it was felt that the responsibility for resolving such issues was that of property managers rather than that of the regulator.

The problem is in the territory of the managers, the managers of the houses. The pipes are old there and so there is pollution, let's say rust, iron oxide and things like that. Moreover, these polluted pipes overgrow and thus the water supply is obscured as such – physical supply – there is no pressure, no suitable stream. There are some regulations of Riga council and they regulate the situation but we do not have any connection with that. The regulator is responsible for the supply from a particular Riga water post to the lead-in point of the manager. Until the big counter. The things happening in the apartments are not the concern for the regulator. R 3

### **Consumer Concerns**

The view taken by the water supplier was that, service provision is satisfactory, that owing to improvements in water quality and water pressure, consumer concerns should be negligible.

In Riga there are no pressure problems anymore, the pressure of water is satisfactory and even more. In some houses there could be some pressure problems but that is only inside the house and it is the problem of pipes. Of course some problems could be ours but the number of these problems is rather tiny. Then, of course there is the problem connected with the quality of water, but in fact it is very low. Some time ago the main problem was the pressure, then the second problem was the quality. These problems are somewhere in shadows. There are some letters (on my table) concerning these problems but it can't be regarded as the main problem. The main problem now is the system of payment. WS 1

### **Concern about Rising Costs**

According to the water supplier, consumer concern was considered to revolve more around the issue of payments, rather than service provision. Indeed, it was felt that the chief consumer concern issue was related to payments, often due to the impact of water metering.



Those who are connected to our system have no worries. They have worries about the settlement of payments. Many consumers still do not have meters but those who have counters are worried. WS 1

For the consumers the question is going to be important when the price for the service will rise above 4% from the family budget. Then this will be a very painful question. Until the payment is around 4 %, it's not my invention, this is research in which I have also taken part in. When the payment reaches 4 % people start worrying. When the payment is under 4 %, it is not important but when the payment is above 4 % then it becomes serious. It cannot be forecasted what might happen. We can't let it happen. If we can have it around 4 % then everything is going to be alright. WS 1

Here, trust issues are clearly at stake, since the water supplier thought that consumers do not regard the introduction of water meters as an improvement, but rather as a means to for the water company to extract money from them. This consumer distrust was considered to be a problem by the representative, and at best could be rectified through positive forms of communication.

Consumers don't have much of a choice because as I said we are kind of monopoly but if the consumer trusts us and thinks that are not cheating him then half of the problems are lost. The biggest problem is that the consumers look at us with doubt and think that we are installing counters not to make their life better but so that they have to pay more. It's not done for free and all the time they have this attitude and if we could get rid of doubts then most of the problems would be non-existent. It's a matter of communication. WS 1

Other stakeholders discussed the issue of payments generally, stating that if the consumer expects improvements, then they need to understand that they will have to invest in them.

...every consumer wants these payments to be lower but we have to keep in mind the fact that the delivery of all services requires some capital and expenses. NGO 1

### **Concern about Water Quality**

One regulator felt that consumers were not necessarily concerned about the general provision of services, rather they were more concerned about the end product – that is, tap water quality.

In my opinion, they are not so much worried about the situation of communication systems, renovations or things like that. People are concerned about the consequences – there is no water, what's wrong? It's yellow, why? R 3

Given that water quality was regarded as a key consumer related issue, stakeholders were asked whether consumers have grounds to be concerned. There was a general view that, essentially consumers should not be concerned due to the standards of provision and regulation. However, as previously the issue of poor pipes and poor water quality was noted as an issue, suggesting that consumers do have grounds for concern.

[consumers] have to worry because it is our health aspect and drinking water is connected with our health. Primarily they wouldn't have to worry as the quality of water should be the problem for the water providers and there are some regulations regarding this matter and the implementation of this problem is controlled but it is

possible that in some places there is this technical problem connected with bad pipes, consequently this quality is not so high. But primarily they, well, by all means, as in one of the enterprises one person connected with water delivery said – the best advertisement could be that no one has died or had some serious health issues while drinking this water. NGO 1

One regulator felt that consumer concerns are linked with poor information provision on behalf of the water provider (discussed further in 8.2.3). Here, the interviewee felt that concerns resulting from lack of information lead to misperceptions and behavioural adaptations in terms of purchasing water.

If the consumer is not sure about the quality, of course he will have worries. Some time ago there was this myth that you had to boil water before the consumption. There were problems with Chlorine and it smelled bad as well. Nowadays we do not have this problem anymore because we have different methods how to work with water. Yes, rather often these worries are from not knowing the right information and then the consumers think that it's better to buy pre-packed water and they believe that it is good for drinking. In reality it is not so. It is very difficult to convince them of the opposite. R 1

The interviewee also felt that consumers were concerned about the acceptability of pipe materials.

[Consumers] are worried about the acceptance of these materials. Rather often their worries are not justified but yet again it's because of the lack of communication between and it should be done by those who are changing this infrastructure. I think it is their duty to inform. R 1

Concern about the quality of tap water was also linked to consumer trust within the water sector. It was felt that these concerns and perceptions linked with practices during the Soviet era needed to be rectified.

Keeping in mind those worries about the quality of tap-water I would say that they do not trust us 100%. There could be less worries about the usage of tap-water and this Soviet myth about boiling water. R 1

One regulator felt that consumers concerns were manifested primarily in economic issues that is, issues related to service provision or water quality have more salience because consumers have to pay more for the water they receive.

They are worried about these questions [e.g. service provision] only when it infringes with their economical situation. When they have to open up their wallets. R 2

### **Bottled Water Consumption**

It was acknowledged that consumers purchase bottled water due to concerns about tap water quality. For example, the NGO felt that consumer mistrust of tap water was manifested in behavioural adaptations such as filtering water or drinking bottled water.

If they don't believe in the quality of water and think that the pipes are bad, they somehow filter this water or use mineral water. These are the consequences. NGO 1

However, the regulator felt that consumer concerns about tap water quality were not necessarily justified.

In Latvia people also buy this water but this is because of these worries about the quality of water they get from tap but in my opinion it's more or less a myth that we have to drink this water and actually, this pre-packed water is not our concern. R 1

When asked whether the bottled water industry was in competition with the water sector, the water supplier did not foresee any threats.

It is not important. They are not our competitors. It is not known whether the bottled water is bought to fill bathtubs or jars. There is another question and rather often it does not concern us but other countries. Our water is used to produce drinking water. And this influences us, in fact it turns out that by using our water they can get thousand fold savings. There is no law that would forbid that. They can take our water and sell it in jars. But those who sell good quality drinking water from drill holes (like Borzomi or Evian) they are not our competitors and these are not our problems. WS 1

However, one regulator felt that, anecdotally at least, bottled water may be used more than tap water for potable purposes.

We really don't have that kind of data. I believe that in many households pre-packed water could be winning. Let's say for food preparation. Tap water is used more for cleaning, washing but for food preparation people use this pre-packed water. But we do not have exact data on this question. R 1

Conversely, another interviewee felt that bottled water was less of a threat due to the fact that tap water is used for other domestic purposes other than potable consumption.

We have to mention that we use water not only for the preparation of food or drinking but people use it for bathing, washing clothes and some other purposes as well. People would not use pre packed water for these needs. Consequently I believe that for the big companies this component is not so important. R 2

In addition, the safety of bottled water was questioned, and it was suggested that consumers have a misperception that bottled water is safer than tap water.

People have a wrong impression that pre-packed water is better than tap water but in many cases the water sources are not protected and it's rather polluted with microbiological things. People just don't think about that... NGO 1

The consumer association representative felt that consumption of bottled water was indicative of mistrust in the quality of tap water. It was noted that, even if the quality of water is initially good, by the time it reaches the consumer it will be of a lesser standard due to the pipe networks.

This is indication that consumers do not have trust in tap water quality. There is an opinion that our water supply system cannot provide a good water quality. In some areas it is really a case. Secondly, it is clear, that even a good water will deteriorate during the transport in the networks which are made of pipes which are outdated by now. People are aware how much their well-being are dependent on the quality of water they consume. CA 1

One regulator also felt that bottled water consumption was indicative of mistrust. It was felt that consumer understandings are still based upon what they had heard during the Soviet era.

[consumers drink bottled water due to] mistrust in Riga water. [Consumers] have been told that they have ...from the Soviet times...that this water is this and that. Maybe it is like that, if they haven't used this tap and the water is stagnated. They could let the water run for some time but they just go the store and buy pre-packed water. They think that pre-packed water is cleaner. What can we do! R 3

Other reasons for bottled water consumption included choice, and advertisements.

It's the choice of the consumer. In Riga the filtering systems of water are not chemical but we could say so and we will never be able to compare it, let's say, with some wellspring water. But in Latvia the geological situation is very strange – the soil is full of iron and the water is also full of iron. Thus, the wellspring water might be even worse than the water pipe water. There are always some traditions or stereotypes what good water is. I don't think that it is a problem for all people. This tendency could be connected with the income. Very often people cannot afford it and even if they could, they would choose something else. R 2

Firstly it is because of the advertisements and then the same old prejudices about the quality of tap water and, let's say, sometimes it's rather convenient (if you are travelling) to take with you a bottle. But, in my opinion the main cause is the advertisements and prejudices. NGO 1

Thus, reasons for bottled water consumption included mistrust (or 'prejudices') about tap water, consumer choice based on aesthetic preferences, and advertising strategies.

### **8.2.3 Engagement and Interaction**

The water company spokesperson reflected that the perception that the company has of its' customers is very important, particularly in the light of socio-political changes. It was stated that a shift in opinion had taken place in terms of how customers were perceived, as compared to the previous era.

...now it's better. It has to be mentioned our own attitude towards the clients is very important. The most difficult thing for us who have been through the Soviet times is to look at the consumer and not to see a potential thief, potential offender. It is possible that 3 % of our water is stolen but we cannot look at 97 % of our consumers and think of them as of offenders. The people who work with our clients have to get rid of this opinion and many of us have succeeded and the clients should feel this change. WS 1

The supplier felt that their consumer perceptions of the water company varied according to their social background.

Pensioners and those who have come to our country from all over the post Soviet Union, their attitude is very negative. They lived in those times when they had all the rights for it and got it. At the present day they have all the rights for it but they have to pay for it and that is a problem situation. WS 1

If we talk about the graduates, those who are around 30 years of age, between 25 and 30, they are very understanding and it is very easy to communicate with them. And then there are the rest, they are more or less neutral. Directly we do not come across any problems. WS 1

### **Consumer Oriented Contact**

The water supplier acknowledged that there were few opportunities for consumers to make contact with the water company. This was considered to be a 'weak point' within the company.

It's our weakest point at the moment and it is number two priority after the registry or consumption. Right now we are working on a project of servicing centre. Right now there is a phone number people can call but the problem is that people don't understand if those people on the other side are able to help them. WS 1

The next plan, unfortunately very complicated (it will be done in the next 3-4 years) is as follows: it's a client centre where people come in and ask their questions. It's possible that the client centre is going to be here, it's one of the solutions. People come (anyone) and ask the question. The question is answered or they do the requested paperwork and come later for the answer. It's really one of our most painful points because our clients have to ask for the answer several times now. WS 1

One regulator discussed how, although it was not in their specific role, they dealt with consumer questions.

We answer the questions. They call us and we answer these questions, although they are not connected with us. Specifically about the inner pressure of the water, the counters, the loss of water inside the houses, the quality and about the brown water. We answer these questions but we have no connection with that. We do that. Well, the person has come through to us, is it so difficult for me to talk with him for some 10 minutes?! R 3

They ask questions and we answer them as much as we can. By phone. We register all incoming phone calls. I answer these questions. People have no clue what we do and who we are. They call to the Council of Riga, to that telephone number. They are just simply given our number. They give our number for some reason. Sometimes it's because they simply don't know something or sometimes the person really wants to speak with us but sometimes they send them to us to get rid off them. Then the people ask those questions and we to answer them. And we answer them. R 3

It was reiterated that most consumer related contact was based on questions or the need for information. It was suggested that there is not much of a 'complaints culture' in Riga.

People have never had any complaints. For example, there is an accident and they do not have water for a half of a day... there have been several accidents of Brivibas Street...people know about it, the radio informs them about it. What's there to complain about? Accidents happen all over the world. R 3

### **Organisation Initiated Contact**

In terms of incidents, one regulator stated that the occurrence of incidents are not communicated to consumers, since it was not considered as being positive for the image of the sector.

We are trying not to popularize our performance in the eyes of the consumer. Consequently we can't talk about any incidents or relationships with the consumer. R 2

In terms of contact initiated by the company, the water company representative acknowledged that they do not yet have a strategy in place for liaising with consumers, although this was planned for the future.

If I understand it correctly we do not have marketing policy at the moment, we lack marketing strategy, how to inform our clients. Each year we send out booklets but I don't think that people are interested in the amount of water consumed or in different chemical substances but we are planning direct contact with this client service. WS 1

We are planning to send out (together with bills) different information booklets. Not only about bad things but also the basic things like what you can throw out in drainage and what could be the consequences. WS 1

Also, the challenges of engaging with consumers were noted.

...we have so called inspections when we meet our clients at their living places but these meetings are more negative than positive because in most of the cases we notice some offences or something like that. WS 1

### **Communication Strategies**

Although he acknowledged that the current infrastructure for communication is limited, the water supplier felt that communication strategies are of 'paramount importance'.

I consider it to be one of our primary concerns because without it there can be no natural monopoly. If you sell some goods and people buy them anyway, well good for them, but here it's a bit different, it's a dual situation... It's not electricity or heating, well, if they cut you off, after all it's your choice to be in warmth or not. But with water it's different. It's like with air. If you don't pay for it, we cut you off and forget about your life. In this situation communication with our clients is of a paramount importance. WS 1

Without communication there is nothing. It's like that, if there is no consumer and we do not communicate then there is no need for such an organisation. WS 1

The NGO also reflected that communication with consumers was important, and that although there were existing strategies in place for communication, more would be beneficial.

[water providers] do organize open house days, they place articles in the newspapers, in the local papers and they are trying to explain how they work and what they think of the consumers. In my opinion and in the opinion of our organisation it is important to inform the consumers. I think, yes, there should be a place for some small informative booklets for the consumers. NGO 1

The water company representative also observed that a longer-term strategy was required for communicating with consumers, for instance, educating children in schools, so they can pass information on to their parents.

There is one effective thing which we are lacking and that is work with pupils in schools. If they understand this problem then they will go home and most definitely explain it to their parents. This is our target audience and we have to work on that. WS 1

The water supplier also stated that in some ways they were already engaged in processes of consumer engagement.

We involve our consumers anyway. For example if we are talking about registry or water counters then the consumer is right there and tells us the digits. WS 1

It was also acknowledged that different consumers have different needs.

Every part of society has its actual questions in this case and we have to push on it. This communication allows us to prevent many different conflicts which would result all kinds of court cases and so on. Some are interested in, for example people in apartment houses have different interests than those living in private houses. Those living in private houses ask questions about swimming pools and watering and so on. WS 1

There was also some discussion about appropriate mediums of communication.

There is information in the internet but in my opinion it is not a very effective method because not all people want to use it, and not all of them know how to use it. Of course it could be the radio. It could be information in the mailbox but this information has to be eye-catching because most of the booklets are thrown out like unnecessary. I believe the most effective way would be, well, if this consumer has the house management office or wherever he pays for his bills, so, it would be great if he could get this information there (what water we consume, what are the results of analysis). As for me, I have never seen anything like that. It would be an ideal option. R 1

### **Information Provision**

One regulator felt that consumers are not provided with enough information about drinking water quality.

I think that consumers have very little information on the quality of drinking water. Despite the fact that it's the duty of the provider to inform them, of course, this informing usually happens when the quality of water is bad, these are warnings about restrictions or partial restrictions of drinking water. Rather often the inhabitants don't know what kind of water they are consuming. I believe it is very difficult for them to receive this information on the quality of drinking water. R 1

I believe that the consumer is not informed well enough on the quality of water. Maybe some institutions think differently but I have my opinion. I (as a consumer) have never been informed what I am really drinking there. I believe that you (as a consumer) are also not sure about the quality of drinking water. I think that there should be much more information from the providers. R 1

From the regulatory perspective, future issues included provision of information about water quality and water provision in order to allay concerns and confusion about issues such as acceptable pipe materials.

There is one more very important question and it's about the materials that are used in delivery of drinking water. People are confused and they do not understand which pipes are better, which are accepted and which are not accepted. We would also have to work in this sphere. We'd have to work with those people who work with this infrastructure and also with the consumers. There are a lot of questions and those questions might not be about the quality but about the materials. The inhabitants are worried about the materials and they do not know if the materials are accepted. This could be something for some kind of project, I even don't know but we have to make

it as a priority because in Latvia the certification of these materials is not obligatory. R 1

This year we are planning to publish a booklet on the quality of drinking water. This is our information about Latvia and we can give it to society. Actually, nothing like this has ever happened, therefore I am saying, that the information is not enough. In newspapers there are some articles, well, sometimes we are trying to publish something but now it's different. It's going to be a booklet concerning drinking water and it is going to be in-depth information. R 1

Similarly, the same regulator felt that the introduction of meters had been beneficial, but there were still calls for consumers to understand them, suggesting that more information is needed.

One question has already been solved and it is this installation of water meters but the water saving and people have to understand it, that it is something important and it should be saved. R 1

### **8.3 Summary of Findings for Case Study Seven**

The Riga case study exemplifies a system undergoing change, where at a political level the country is emerging from the Soviet era into the European one, with consequential impacts on the cultural and economic landscape. From the perspective of stakeholders, these changes are leading to a transition within the water industry, involving a number of challenges. Most of the participating stakeholders felt that, although the quality of drinking water has improved since the Soviet era, the primary water sector issue in Riga is the ageing infrastructure, which often results in poor water quality. It is anticipated that there will be considerable changes in the water infrastructure in the future (e.g. construction of pipe networks, drainage systems), whilst there are also possibilities of the introduction of new technologies (such as filtering), and at a more operational level, billing issues.

According to the end-users, water quality and water rates are the key consumer priorities. Due to poor drinking water quality (e.g. yellow in colour, turbidity) resulting from the pipe networks, it is assumed that consumers perceive their water quality as posing a risk to them, often leading them to purchase pre-packed or bottled water.

In addition, the introduction of water metering has been seen as beneficial, although end-users feel that consumers do not understand them. Allied to this it is assumed that consumers are concerned about payments, and that there is low consumer trust here. Indeed, cost and billing issues were regarded as a challenge within the sector, since previously, consumers paid far less for their water. It was stated that, due to the implementation of a new registry and water metering system, consumer concerns have risen greatly. Furthermore, it was expected that future improvements within the sector will be met with rising costs, and stakeholders anticipate that this will have a significant impact on consumers. Most stakeholders maintained that if consumers are to receive an improved service then this will be reflected in terms of what they pay.



In terms of communication strategies there are few opportunities for the consumer to make contact with the water company. This is recognised as a weak point by the water company. It is assumed that there is not much of a 'complaints culture' in Riga, however if consumers require information their enquiries are dealt with by the regulator rather than the water supplier. The positive merits of communication were acknowledged, and there was some indication that more work would be done in this area in the future.

## 9 Overview and Conclusions

In this study we asked various consumer related questions such as: What are consumer preferences? What raises consumer concern? What issues foster trust? As well as exploring these issues we also aimed to document the range of processes of stakeholder engagement with consumers, particularly with reference to interactions with consumers and the underlying organisational principles that drive communication and regulatory practices – what types of opportunities are available for consumers to get in touch with relevant organisations? Under what types of circumstances do consumers make such contact? Do they receive enough information?

Throughout the study stakeholders provided their perceptions and understandings about consumers from their own point of view. The variety of stakeholder perspectives is evident throughout the report, and this concluding chapter will provide an overall analysis of the themes and findings across the case studies. The themes are discussed in terms of the cross-cutting issues that were pertinent across case study sites.

### 9.1 Overview

Coinciding with our four case study scenarios, the stakeholders interviewed for this project identified four types of water sector related issues which were indicative of the site in which they operated.

Water Sector issues	Limassol, Cyprus	Gothenburg, Sweden	Accra, Ghana	South-East England	Amsterdam, Netherlands	Lisbon, Portugal	Riga, Latvia
Ageing infrastructure							●
Water shortages	●						
Water mismanagement			●				
Sector functions well		●		●	●	●	

The key consumer related issues identified by the stakeholders were as follows:

Consumer Issues	Limassol, Cyprus	Gothenburg, Sweden	Accra, Ghana	South-East England	Amsterdam, Netherlands	Lisbon, Portugal	Riga, Latvia
Water taken for granted		•		•	•	•	
Consumers generally satisfied		•		•	•	•	
Consumer should have few grounds for concern		•		•	•	•	
Consumer concern about supply reliability of supply	•		•				•
Consumer concern about water quality			•				•
Consumer concern about price		•	•	•		•	•
Illegal connections			•				
Bottled water considered to be a threat to DWI							
Trust considered by high	•	•			•		
Trust considered to be low		•	•				•
Different aspects of trust identified		•		•	•		

In terms of engaging with consumers, different models were identified:

Engagement With Consumers	Limassol, Cyprus	Gothenburg, Sweden	Accra, Ghana	South-East England	Amsterdam, Netherlands	Lisbon, Portugal	Riga, Latvia
Reactive consumer initiated contact	•	•	•	•	•	•	•
Proactive organisation initiated contact		•		•	•	•	
One-way communication	•	•		•	•	•	•
Two-way communication		•		•	•	•	
Two-way communication driven by need for transparency		•		•	•		

## 9.2 How Do Stakeholders View Consumers?

### **Consumers Should be Satisfied with the Service They Receive**

Among those in those in the well-invested sites, water supplier representatives often stated that consumers should be satisfied with the service they receive, the underlying basis for this viewpoint being that they, as water suppliers provide a reasonable service, and that consumers should be satisfied with this. There was also some tacit suggestion that consumers will never be completely satisfied *per se*. Here, some stakeholders felt that within the hierarchy of consumer priorities, consumers begin with a specific focus, and that once their requirements and expectations are met by the service they receive, their attention will shift to a different need. In the South-East England case study, the water supplier presented consumer priorities in terms of a hierarchy, with water quality being most important; the water supplier felt that once consumer preferences have been met, consumers will move their focus on to other aspects of their service provision, such as reliability. Similarly in Lisbon, it was stated that consumers have guaranteed water quality, and now their attention with move on to other issues.

### **Consumers Take Tap Water For Granted**

A common theme amongst stakeholders operating within well-invested systems was that consumers take access to water and their service provision for granted, particularly in Gothenburg, Amsterdam and South-East England. The ways in which interviewees talked about this notion varied. Generally, taking water for granted was discussed in a positive sense, indicating satisfaction and few concerns. In Gothenburg, it was felt that, providing that drinking water meets consumer expectations it tends to be taken for granted; if something is 'wrong' or if consumer expectations are not met, then consumers take notice. Thus, so long as water flows from the tap, tastes 'normal', looks 'normal' and smells 'normal', consumers don't necessarily think about the water they consume.

The idea that consumers take their tap water and service provision for granted may suggest to the reader low consumer awareness, or ignorance. However, there was no evidence of this viewpoint across the stakeholder interviews. Indeed, at times our interviewees were clear in stating that they did not view consumers as 'ignorant'; this is best exemplified by the case of Amsterdam, where several stakeholders noted that, if consumers are asked how much they pay for their water, they often do not know their rates. However, they did not feel that this reflected consumer 'ignorance', rather they just felt that consumers were not overly concerned or worried about their rates.

For stakeholders, in Gothenburg and Lisbon, the fact that consumers may take their water for granted suggested that they do not value the service they receive. Similarly in Lisbon, some stakeholders felt that consumers may have overlooked historical supply problems which included less reliable access to safe drinking water, and that they now place less value on the service.

### **Consumers Should Have Few Grounds for Concern**

To some extent, stakeholder views about what issues consumers were concerned about were indicative of the water context. In the well-invested case study sites there was a consensus amongst stakeholders that consumers should not have grounds for

concerns as, objectively speaking, the tap water is of a high standard. In other case studies, although water suppliers in particular felt that, theoretically, consumers should have few grounds for concern on the grounds of good standards of service provision that fulfilled legislative requirements, other stakeholders contradicted these statements. For example, in Riga, the water supplier felt that consumer concerns should be negligible given satisfactory service provision, and improvements in water quality and water pressure. However, other stakeholders in Riga identified two key areas of consumer concern; rising costs and water quality were noted as critical issues for consumers, attributable to the poor quality of the pipe networks.

A second theme across well-invested sites was that consumer concerns are manifested in changes in service provision, and that, providing consumer expectations are met, they will have few concerns. When talking about consumer concern, a common view was that consumers have expectations based on their existing standards of service provision; if these expectations are not fulfilled, this will lead to consumer concern. Here, problems in day-to-day service such as reliability of supply, and the role of safety and water quality in the context of isolated incidents were regarded as the key drivers of consumer concern across the well-invested sites. It was felt that isolated incidents, which question the safety of water and could pose potential harm to health, may have a considerable degree of impact and lead to consumer concerns, since customers are not accustomed to them. It is important to note that on the whole, stakeholders did not question the legitimacy of consumer concerns, nor did they present consumer concerns as irrational fears. In particular, in the well-invested sites stakeholders were reflexive, and were keen to learn from previous incidents so as to reduce consumer concerns in the future e.g. through improved consumer relations and communication strategies.

### **Price-Related Issues May Signal Consumer Concern**

Price-related issues also signalled consumer concern. These concerns were assumed to be triggered by recent changes in the billing system (Riga), future rises in costs (Lisbon and Gothenburg), and a growing consumer need for assurances about value for money (South-East England). In other sites water prices were explicitly stated as not being an area for concern. In Gothenburg and Cyprus it was felt that, compared to other utilities, water is quite inexpensive and therefore would not be any cause for concern or worry amongst consumers. Furthermore, consumer willingness to pay was considered to be indicative of the nature of the water sector in Cyprus, in that there is no competition from other water providers, the sector is non-profit making, and that water rates are closely regulated, thus providing little scope for change and leading to less consumer concern and more consumer acceptance.

## **9.3 How Do Stakeholders View the Behaviour of Consumers?**

### **Complaints are an Indicator of Consumer Concern and Consumer Satisfaction**

Consumer concern was said to be exhibited primarily through complaints or the lack of them. Across sites, most consumer complaints were said to be primarily about bills, followed by regularity of supply and water quality. As a notable case, complaints were described as being particularly low in Amsterdam. A common

theme was that if consumers are 'happy' e.g. if their expectations are met, then they will have fewer concerns and therefore there will be less complaints. Indeed, across the well-invested sites consumer complaints are considered to be an important performance indicator for the industry as a whole. In South-East England, when asked to describe the water sector, the water company representative stated that water quality related complaints have been on a steady decline since privatisation, and that the majority of complaints are billing related, thus suggesting that there are in essence fewer water quality issues, and that consumers have fewer concerns as opposed to pre-privatisation.

With regard to *why* stakeholders thought consumers complained, most cited obvious issues related to service provision. Some stakeholders provided more complex views; one regulator in South-East England felt that complaints were indicative of concerns that may be influenced by broader, contextual issues, regardless of the properties of their water quality or service provision. He stated that, due to the very nature of water utilities, consumers do not have a choice about their service provider, and that their only recourse is to complain.

In Riga and Cyprus, stakeholders told us that in these sites, there is not much of a 'complaints culture'. On a day-to-day basis, consumers were described as being quite passive and not overly reactive. Even in the context of water shortages, consumers were described as having a 'wait and see' attitude, where few complaints are lodged with the water board. Similarly, in the case of Riga, it was stated that it is not in the nature of citizens to complain, as this is not part of the culture.

The exceptional case in terms of complaints is that of Accra, where it was stated that there are few opportunities in place for consumers to be heard, that although there are formal systems in place for complaints procedures, consumers often resort to other methods such as the media (calling radio stations). Some stakeholders discussed this in terms of consumer lack of awareness in terms of who to contact. Some also thought that consumers had the view that if they tried to call their water company, the organisation would be unresponsive. It is thus worth noting that complaining rates would not make a sensible cross-national indicator of water supplier performance; populations differ in their propensity to complain about anything rendering such indices meaningless. At best rates of complaining are only meaningful as a measure of performance across time within a particular social context.

### **Consumers Need to be Encouraged to Use Water Efficiently**

In Lisbon, some stakeholders felt that, due to low prices, consumers may place less value on water, and may not use it efficiently. Indeed, this was regarded as a key challenge for the sector. Water efficiency was considered especially important for consumers in the light of the fact that future projections have shown that Portugal will have great asymmetries in the availability of drinking water. Consumer attitudes were regarded as 'ingrained', and that long-term solutions were needed in order to deal with future issues.

Reflecting on these issues, stakeholders considered the complexities involved in changing consumer attitudes. It was felt that although people may have some awareness about sustainability-related issues generally, these broad concerns may not necessarily translate into individual changes in behaviour, or indeed consumers

may not recognise their individual behaviour as a contributory factor on a global scale. Similarly, in Cyprus, in the case of water conservation, it was thought that consumers were unaware of how much water they consumed as part of their lifestyle.

Solutions to these issues included information provision and other long-term strategies that aim to shift consumer behaviour through increased awareness. Reference was made to changing attitudes and 'mentalities'. It was acknowledged that changing consumer attitudes is the precursor to changing behaviour, and that this is highly complex and would not happen overnight. Thus, in formulating their opinions of the 'psychology of the consumer', they made the implicit assumption that attitude change precedes behavioural change. The stakeholders indicated that current communication and interaction levels are insufficient in order to create proper consumer awareness about the problem and welcome improvements in this area. They felt that the key to changing behaviour resides in changing cultural practices, involving long term campaigns to increase consumer awareness such as education based initiatives - educating children about the value of water was considered to be a decisive approach, as they would go home and inform their parents. It was also stated that alarmist tactics were not necessarily the best way forward, rather it was believed that a slow, steady campaign would be more fruitful in the longer term.

#### **9.4 How Do Stakeholders Know What Consumer Views Are?**

Stakeholder understandings of consumer views were largely based on knowledge and insights gained from their local working experiences. In sites such as Riga and Accra, stakeholders used exemplary incidents and anecdotes to support their views. In contrast, stakeholders from the well-invested case study sites, in particular Amsterdam, Gothenburg and South-East England, regularly referred to consumer-based research findings when discussing consumer needs, priorities, preferences, expectations and concerns. In terms of evaluation and monitoring, these sites were most actively engaged in monitoring consumer views, satisfaction and/or needs. In fact, when talking about their understandings about consumers, several stakeholders, especially water suppliers and regulators from these sites made reference to research evidence (e.g. questionnaires, surveys) that their organisation had commissioned, or that they were aware of. Thus, in an unprompted manner, these stakeholders demonstrated that they play an active role in keeping up to date with the status of consumer research.

The interviews demonstrated that widespread variations exist in terms of how consumer needs are evaluated and monitored between the sites. Stakeholders were routinely asked what strategies they had in place, however with the exception of Amsterdam, Gothenburg and South-East England, stakeholders acknowledged that, aside from the odd periodic survey, they did not have ongoing programmes for evaluation and monitoring in place. At the same time, they recognised the merits of consumer research, stating that consumer feedback is an important indicator for the industry.

Interviewees from South-East England case study discussed the field of consumer evaluation extensively. For England at a national level, the regulatory spokesperson

explained that consumer research is viewed as important in terms of, a) gaining an understanding of consumer views; b) taking those views into account; and c) in terms of quantifying consumer preferences in order to steer technical programmes. The South-East England water company spokesperson also stated that they monitor consumer views generally, and especially during incidents in order to gather consumer feedback and gauge levels of acceptability about company initiatives and plans.

## **9.5 Models of Engaging with Consumers**

On the whole, across the case study sites approaches to engaging with consumers varied between reactive and proactive models of communication, whilst the methods of communication involved one-way and two-way strategies.

The dominant model of consumer interaction in Cyprus and Riga is the reactive model, whereby if consumers need to, they contact the relevant organisation. Here, stakeholders acknowledged that the strategy is less proactive on their behalf. Also, they discussed the limitations of their existing practices for consumer engagement, which are characterized by one-way forms of communication, whereby information bulletins about water scarcity for example, are provided with bills. In Cyprus, some felt that there were few two-way orientated platforms for dialogue available, particularly in the case of discussing water shortages. It was felt that a renewed strategy was needed in order to discuss and inform consumers about the subject on a regular basis. One water board representative also noted that there were few open channels of communication between themselves and their consumers. Here, the merits of two-way forms of communication and participation were acknowledged. Likewise, in Riga, where the current infrastructure for communication is limited, the water supplier representative admitted this to be a 'weak point'. Effective communication was regarded as being vital, and it was stated that more would be done in this area in the future.

By comparison, the leading model of engagement in the well-invested sites, Amsterdam, Gothenburg, Lisbon and South-East England is characterized by water companies being proactive in their approach, although there are still elements of reactive forms of engagement, and one-way methods of communication in place for the broad base of the consumer population (if the consumer needs to get in touch, in relation to bills or the need for information for example). However stakeholders stated that organisation initiated contact is of vital importance, since keeping customers informed is not simply a matter of waiting for consumers to get in touch with the company.

Across the well-invested sites communication was discussed in various contexts, namely a) general provision of information about the service; b) interruptions to supply; c) communication about incidents; d) raising awareness; and e) long-term future plans. In all cases water suppliers aimed to be proactive in their approach, yet the strategy of information varied between one-way and two-way forms of communication. General information is provided with bills, the internet, notices, and the media, where consumers are required to access information themselves. At a more operational level, including instances where the usual service may be



interrupted, information is also disseminated via these channels of communication. In terms of raising awareness and consulting about future plants, water companies engage in two-way communication at a more localized level, through community engagement programmes. These forms of communication are more oriented around education and 'awareness building' as an ongoing process (e.g. 'Water Week', Amsterdam). Public consultation featured as high up on the water company's agenda in South-East England, and this was said to be driven by company initiatives, consumers' interests and regulatory requirements. Such forms of consultation were regarded as being challenging, yet important in gauging public opinion, views and acceptability about future plans. The water company representative discussed several forms of communication ranging from one-way methods requiring consumers to look up information on the internet, to two-way methods such as roadshows, public meetings and exhibitions.

In the well-invested sites, positive, two-way forms of communication were driven by the need for transparency, and the ingrained organisational view that they 'don't need to hide things' from their customers. Indeed, in the case of Amsterdam, transparent communication, particularly in the case of incidents, was considered important in order to not alarm the public in the first place. Other stakeholders also felt that the best way of alleviating consumer concerns was to offer open, honest explanations, as well as solutions.

Again, the exceptional case is Accra, where consumer relations were described as being virtually non-existent. Some stakeholders made comparisons with other developed countries, and recognised that there is no such platform for dialogue in place in Accra. However, there was some indication that efforts are being made to set up an infrastructure to enable dialogue in the future.

## **9.6 How is Trust and Confidence Represented by Stakeholders?**

In deliverable D6.1.2 we drew the important conceptual distinction between *social trust*, which involves some judgment of similarity of values and motivations between an organisation and the citizen, and *confidence* which is a belief based on past experience that events will occur as expected. Thus a consumer might have confidence that when they turn on their taps they will get good quality water because they always have done but this distinct from their social trust in the motivations of their supplier. For example, they might see the supplier as charging too much for drinking water with the intention of making profits for someone other than the consumer. In the stakeholder interviews the two terms were often used interchangeably which is common in every day talk. Here, using the distinction above we provide an interpretation of their viewpoints. This is important because what a company does to promote confidence is likely to be quite different to what it does to promote social trust.

### **Consumer Confidence**

Stakeholders in the well-invested stakeholder sites (particularly in Gothenburg, Amsterdam and the South-East of England) discussed 'trust' and 'confidence' in an unprompted manner. Here, the concepts were recurrent themes, and were discussed in different ways. In Gothenburg, 'trust' was stated to be a key priority in its own right. Thus, whilst other stakeholders referred to the properties of drinking water

and levels of service provision, in this instance 'trust' was an additional priority. Here, stakeholders were actually referring to consumer confidence, since they referred to the need to maintain existing standards. Thus, increased confidence was said to denote a sense of safety and security, and water suppliers were keen to maintain these existing levels of confidence, by ensuring that people continue to feel safe.

A history of competence on behalf of the water company was often used to describe an increased sense of consumer confidence in products and services, and more importantly, decreased levels of consumer concerns. In Gothenburg, it was explicitly stated that consumers are not particularly worried about the tap water due to high levels of 'trust' (in this context, 'confidence') and this was linked with the fact that there have been few problems within the water sector – if water is of a good standard and flows reliably, then people will not worry about it, and they will have confidence in it. Stakeholders particularly in Amsterdam and Gothenburg, when asked about consumer concerns, stated spontaneously that they thought that consumers are not particularly concerned about their tap water because they have confidence in it, or 'trust' it. In Amsterdam the idea that consumers take water for granted, or do not necessarily think too much about their water, was thought to be indicative of a positive sense of consumer confidence in water quality. Stakeholders linked this with the fact that consumers are accustomed to a reliable and safe supply of drinking water, and that there had been few negative issues that had served to erode consumer trust and confidence in their water and service provision.

In other cases it was stated that consumers *should* have more confidence, and fewer concerns. For example in Lisbon, it was felt that improvements within the sector are linked with greater levels of consumer confidence, and that consumers should have few grounds for concern as long as they have adequate service provision. Using the Amsterdam and Gothenburg examples as a benchmark in this case, we would assume that consumer confidence will develop over time, that on the basis of positive past experiences of the delivery of good quality water, consumers will develop confidence that there will continue to be good quality water coming out of their tap.

In terms of confidence in water as a product, when discussing reasons why consumers consume bottled water, stakeholders were asked whether they thought 'trust' was an issue. There was a divide in views. Some stakeholders explicitly stated that they did not think it was a reflection of consumer trust or confidence, rather they felt that bottled water consumption indicated aesthetic preferences such as taste and smell. Conversely, in the case of Lisbon, the consumer body, regulatory and industrial representatives all felt there was some element of consumer mistrust. It was suggested that lack of trust was manifested partially in lack of information about the good qualities of tap water, and previous consumption practices over time (when water was less safe for consumption). Of all the cases, in Riga stakeholders overtly stated that consumers purchase bottled water due to concerns about tap water quality. This in turn was linked with consumer mistrust in tap water, leading to behavioural adaptations such as filtering water or drinking bottled water.

### **Social Trust**

Consumer social trust is a feature of a social relationship where consumers make an assessment of the motives and values of the water supplier. In comparison with

representations of consumer confidence, the role of social trust was discussed to a lesser extent. Indeed, one of the most notable reflections was from one South-East England interviewee who distinguished between trust (confidence) in water as a product, and trust (social trust) in the water supply organisation.

In the case of stakeholder references to social trust in the water industry, in Cyprus stakeholders felt that the long-standing sense of positive trust was based on the non-profit nature of the water sector. This suggests that consumers trust the motives and values of the supplier, allowing them to judge whether these are consistent with their own interests. Interestingly, whilst discussing maintenance of trust generally, one stakeholder in Amsterdam felt that privatisation may lead consumers to perceive that water companies have other profit-related priorities in mind, thus reducing levels of trust in the industry.

On the other end of the spectrum, in Riga stakeholders felt that there is a slow but growing sense of consumer distrust particularly with regard to payment issues and rising costs. These issues were framed by stakeholders in the sense that they themselves are providing an improvement, whereas consumers view developments in metering as being an opportunity to have more money extracted from them. This suggests that consumers do not trust the motives and values of the supplier, and they do not feel that their actions are reflecting their own interests. On the whole in Riga concern about the quality of tap water was linked to consumer trust within the water sector. It was felt that these concerns and perceptions were linked with practices during the Soviet-era. Here trust was described as being learned or acquired over time, where a problematic water system had left consumers to feel wary of their new, improved water supply.

### **The Asymmetry of Trust/Confidence**

What is interesting about the Amsterdam, Gothenburg and South-East England case study sites is that stakeholders felt that levels of confidence were relatively high, yet great emphasis was placed on preserving and maintaining it. They were keen not to be complacent and were all too aware that both social trust and confidence take time to develop yet can be diminished quickly. In academic terms this is referred to as 'the asymmetry of trust', whereby negative events have a greater impact on levels of both social trust and confidence than positive events. In these sites the occurrence of incidents was regularly discussed alongside the need to maintain consumer confidence. In South-East England, the idea that consumers take a safe, plentiful supply for granted was closely linked with the idea that, when incidents do occur, those responsible do take notice and act quickly (i.e. are concerned to protect consumers' health). Some stakeholders recounted incidents that had resulted in high levels of concern or anxieties, such as cryptosporidium outbreaks, or water shortages. In these types of examples, it was noted that although the incidents were handled relatively well, and consumers were not faced with specific threats, consumer perceptions, coupled with negative media reports lead to a lasting erosion of confidence.

### **Countering the Asymmetry of Trust/Confidence Through Responsiveness and Clear Communication**

In order to counter the asymmetry of trust, stakeholders discussed the importance of maintaining their standards, as well as effective communication strategies and risk management procedures. In Gothenburg and Amsterdam, in the case of incidents,

levels of social trust and confidence were thought to be dependent on clear communication and appropriate levels of responsiveness on behalf of water companies – ‘you have to communicate properly, at the right time’. In terms of responsiveness, for example in case of interruptions to supply, reference was made to creating a sense of assurance, by sending out water tankers to meet consumer needs. Such open communication strategies appeared to be used both to remind citizens that the supplier had their interests at heart (i.e. enhance social trust) and to suggest to the public that they had the competence and technical ability to fix any problems (i.e. to mitigate any loss of public confidence).

Although few incidents occur in Amsterdam, there are strict protocols in place for risk management. It was recognised by one regulatory spokesperson in Amsterdam that social trust and confidence may be undermined if negative incidents occur, but it is the ways in which these incidents are handled that has a decisive influence on whether trust is hindered in the long term. All stakeholders in Amsterdam stressed the importance of open and immediate communication in contributing to the development of trust and confidence, implicitly suggesting that a lack of communication would erode these.

### **9.7 Future Directions**

This study has involved a series of in-depth qualitative interviews that investigated stakeholders’ understandings and views about the consumer context within the drinking water sector in seven case study sites. The interviews have provided an insight into perceived consumer preferences, consumer priorities, and what fosters trust between consumers and their drinking water suppliers from the stakeholders’ perspective. Our next task will be to explore these issues from the consumers’ perspective in a series of focus group studies, which will allow us to explore similarities and differences between stakeholder views of the consumers, and consumer views as expressed in the focus groups, as well as the range of consumer understandings and views about drinking water according to the different water issue contexts specified in this report.

## 10 References

- Bohman, A. (2006). "Framing the Water Challenge - Multilateral donor policies for water supply and sanitation 1960 – 2005", Licentiate thesis, Occasional Papers in Economic History No. 10 2006 ISSN 1653-7475, Umeå University 2006
- Britannica Book of the Year (2007). "Ghana" Retrieved 6 September 2007, from Encyclopædia Britannica Online: <http://search.eb.com/eb/article-9433197>)
- Câmara Municipal de Lisboa. (2007). "Lisboa Histórica." Retrieved 15 October, 2007, from [http://www.cm-lisboa.pt/?id\\_categoria=26](http://www.cm-lisboa.pt/?id_categoria=26).
- Central Intelligence Agency (2007). "The World Fact Book 2007." Retrieved 23 August 2007, 2007, from <http://www.odci.gov/cia/publications/factbook/index.html>.
- Constantinou, G. (2002-2003), Report on Cyprus; An island characterisation including climatologic, hydrological, agricultural and socio-economic data. MEDIS, Project No EVK1-CT-2001-00092
- Encyclopaedia Britannica (2007) "The Netherlands". Retrieved 4 October, 2007, from <http://www.britannica.com/nations/Netherlands,-The>
- Encyclopædia Britannica (2007). "Ghana". In Britannica Book of the Year, 2007. Retrieved 6 September, 2007, from <http://search.eb.com/eb/article-9433197>)
- Encyclopædia Britannica (2007). "Lisbon". Retrieved 14 October, 2007, from <http://www.britannica.com/>.
- Encyclopædia Britannica (2007). "Sweden". Retrieved 5 September, 2007, from <http://search.eb.com/eb/article-30540>)
- Encyclopædia Britannica (2007). Retrieved August 9, 2007, from <http://search.eb.com/eb/article-242741>)
- Encyclopaedia Encarta online. (2007) Retrieved 4 October, 2007, from [http://encarta.msn.com/encyclopedia\\_761572410/Netherlands.html](http://encarta.msn.com/encyclopedia_761572410/Netherlands.html)
- Environment Agency (2004). Maintaining Water Supply. Bristol, Environment Agency: 56.
- Environment Agency (2007). "State of the Environment." from [http://www.environmentagency.gov.uk/regions/southern/1168940/1169042/1174732/?version=1&lang=\\_e](http://www.environmentagency.gov.uk/regions/southern/1168940/1169042/1174732/?version=1&lang=_e).
- Environment Review of Latvia (2001). Retrieved 19 November, 2007 from

[http://www.lvgma.gov.lv/produkti/soe2001\\_lv/udeni/dzer\\_ud/dzer\\_ud.htm](http://www.lvgma.gov.lv/produkti/soe2001_lv/udeni/dzer_ud/dzer_ud.htm)

EPAL (2007). "EPAL." Retrieved 15 October, 2007, from <http://www.epal.pt/epal/>.

Food and Agriculture Organisation (2004). "Aquastat: FAO's Information System on Water and Agriculture." Retrieved 17 June 2004, 2004, from <http://www.fao.org/ag/agl/aglw/aquastat/dbase/index.stm>.

Geudens, P.J.J.G. (2005). "Water Supply Statistics 2005", Rijswijk, The Netherlands.

Geudens, P.J.J.G. (2007). "Water Supply Statistics 2006", VEWIN number 2007/77/6259, Rijswijk, The Netherlands.

Government of the Portuguese Republic. (2007). "Portal do Governo: Portugal." Retrieved 15 October, 2007, from <http://www.portugal.gov.pt/Portal/EN/Portugal/>.

Hassan, J. (1998). A history of water in modern England and Wales. Manchester, Manchester University Press.

IRAR (2007). "The Regulation of the Water and Waste Sectors in Portugal". Retrieved 29 October, 2007, from <http://www.irar.pt/irar.pdf>

Lannerstad, M. (2002). Water Supply and Sanitation in Sweden: A Public Trust, Article in Stockholm Water Front, No. 4, Dec. 2002, SIWI, Stockholm, Sweden.

Lundehn, C, and Morrison, G.M. (2007). "An assessment framework for urban water systems – a new approach combining environmental systems with service supply and consumer perspectives". In: Highway and Urban Environment - Proceedings of the 8th Highway and Urban Environment Symposium. Alliance for Global Sustainability Bookseries, Vol. 12.  
Springer, Amsterdam, 2007. ISBN: 978-1-4020-6009-0.

Lundéhn C. and Owusu E. (2006). "Consumer Attitude and Trust in Accra Water Supply (Ghana)", Chalmers University of Technology, Report No. 2006:9, Civil and Environmental Engineering, Water Environment Technology, Göteborg Sweden.

Management Contract for Ghana urban water between Ghana Water Company Limited and Vitens Rand Water Services by Aqua Vitra Limited, October 2005.

de Moel, P. J. Verberk, J. Q. J. C. and van Dijk, J. C. (2006) "*Drinking Water: Principles and Practices*".  
World Scientific. ISBN 981-256-836-0

National Statistics (2004). Regional Trends 38: 2004 edition. London, HMSO.

National Statistics (2007). 2001 Census. London, HMSO.

- National Statistics (2007). Population estimate: UK population grows to 60.6 million. London, HMSO.
- National Statistics (2007). Subnational Population Projections (SNPP) for England. London, HMSO.
- OFWAT (2005). Security of supply, leakage and the efficient use of water: 2004-05. Birmingham, Office of Water Services (OFWAT).
- Riga Water (2007). Retrieved 19 November, 2007, from [http://www.rw.lv/lv/main.php?x=01\\_02](http://www.rw.lv/lv/main.php?x=01_02)
- Saal, D. S. and Parker, D. (2001). "Productivity and Price Performance in the Privatized Water and Sewerage Companies of England and Wales." Journal of Regulatory Economics **20**(1): 61-90.
- Segrave, A. (2006) "WA1: Matrix of Factors", August 2006, Kiwa Water Research for TECHNEAU
- Statistiska Central Byrån (2005) "Statistics Sweden". Retrieved 5 September 2005 from [http://www.scb.se/templates/pressinfo\\_\\_\\_211753.asp](http://www.scb.se/templates/pressinfo___211753.asp)
- SVA (2007). Retrieved 19 November, 2007 from <http://www.sva.lv/vfu/dzumd.php>
- SVA (2007). Retrieved 19 November, 2007 from <http://www.sva.lv/vfu/info.php>
- Techneau (2006). Consumer Trust and Confidence: An Overview. Deliverable 6.1.2.
- United Nations Development Programme (2006). Human Development Report 2006. New York, Oxford University Press.
- VEWIN (2007). Retrieved 4 October, 2007 from [www.vewin.nl](http://www.vewin.nl)
- Waterboard of Limassol website. Retrieved 8 August, 2007 from [http://www.wbl.com.cy/english/index.php?article\\_id=23&subject=standalone&parent\\_id=3](http://www.wbl.com.cy/english/index.php?article_id=23&subject=standalone&parent_id=3)
- Waternet brochure (2007). "Care for Water".