



## Executive summary

### Introduction

This report forms deliverables D6.1.8 and D6.2.8 and is a report

### Importance

### Approach

Four surveys for consumers conducted in

### Overview of Findings

This report forms the deliverables D6.1.8 and D6.2.8 of Work Area 6 of the TECHNEAU project. These surveys were intended to explore consumer issues relating to safe drinking water supply services with the aim of better understanding what consumers expect and how they respond to various initiatives intended to make them feel more satisfied with their services and, in certain contexts, be more willing to pay for these services.

Four studies were carried out in four different locations each with a particular consumer interest or concern at stake. The study sites and consumer issues studied differed considerably and were as follows:

**Lilla Edet, Sweden** – this case study investigates the effects of a calicivirus contamination event in September 2008 and looks at the medium-term impact on consumer perceptions of water safety. It also investigates how the public felt the crisis was handled.

**Southern Cyprus** – this case study looks at factors relating to the promotion of water conservation on the island where there is chronic shortage of water. It looks at the role of trust and confidence in the suppliers and politicians in support for expensive developments in water desalination.

**Barcelona** – this case looks at the impact of a major infrastructure investment on public perceptions of their water supply. Some areas of the city received newly improved water supplies and the impact of this on consumers is assessed.

**The Netherlands** – used as a benchmark as the country's supply systems represent a stable, relatively well invested set of systems with generally satisfied consumers. The survey explores factors related to maintaining and enhancing satisfaction particularly with reference to information giving and complaint handling.

The key features and findings of the surveys are briefly described below.

#### 1) Lilla Edet, Sweden

The survey was a two-wave follow-up study of citizens of Lilla Edet who were first contacted in December 2008 shortly after the end of the incident. These people and a

booster sample were questioned in September 2009 approximately one year after the event.

The contamination event was the result of an upstream combined sewer overflow discharge in the Göta Alv river and, as the municipality had no reserve raw water source it had to rely on increased chlorination to deal with the problem. Although this is the agreed origin of the contamination there has been no official confirmation of this.

The purpose of the study was to trace changes in responses to the events over time with a particular interest in perceptions of safety and the relationship between these perceptions and factors such as trust and confidence in the municipal water company, the municipality itself.

Public perceptions of the safety of their water supply decreased immediately after the event but recovered over the year almost back to perceived pre-event levels which were themselves very high, Lilla Edet having recently won a tastiest water in Sweden competition.

There is no evidence of any substantial increase in reliance on bottled water use as a replacement for potable use of tap water, and only a tiny handful of people continue to boil their tap water. Although there was an increase in bottled water consumption across the period of the study, less than 2% of respondents reported only drinking bottled water at either wave suggesting no widespread rejection of the tap water. Only 2.4% of people said they continued to boil their tap water at wave 1 and only 1.8% said they were still doing this a year later (wave 2).

Those who blamed the municipal water company or the municipal politicians for the event were also those who felt less safe a year after the event. This was not simply a function of whether individuals got sick during the event or not. Being ill reduced perceptions of safety but blaming the municipality acted independently of this to reduce perceptions of safety.

Accepting the probable cause of the contamination as being an upstream sewage discharge was associated with slightly *lower* perceptions of safety. This is probably a function of some people being aware that the municipality has no alternative raw water source other than the river.

We tested competing hypotheses about the direction of the relationship between trust in the municipality and risk perceptions and acceptance of the tap water. Contrary to the 'associationist' hypothesis that suggests decreased trust and increased risk perceptions are the result of the lack of acceptability of the tap water, it seems that acceptance flows from risk perceptions which are themselves influenced by trust levels - i.e. consistent with the traditional 'causal chain' hypothesis. This suggests that the impact of an event like this is minimised if people already trust the motives of the supplier.

Taking our data and the various reports on the handling of this incident (Larson and Ekvall, 2009; Fife-Schaw, et al., 2009) it would seem that this event was relatively well handled.

It is our view that a key feature of the success of the public communication lay in having a single individual tasked with leading the communications with the public via the media as this gave a human face to the municipality. The use of a crisis handling group made up of a number of responsible agencies including the water company/municipality also provided reassurance that all relevant bodies were involved and that decisions were being taken jointly. This reduced the possibility that public loss of confidence in any one of these groups would negatively influence public assessments of their safety.

## **2) Southern Cyprus**

The aim of the current report is to examine the factors that influence domestic water consumption and whether people are aware of the effect of these factors. A further aim is to examine how water consumption and people's beliefs of the levels of their water consumption before the summer (the driest period in Cyprus) predict water use during the critical summer months.

The data were collected in two phases, using public opinion surveys conducted in April 2009 (Wave One), and September 2009 (Wave Two). The two waves of the survey were administered before and after the summer with the intention of capturing potentially different attitudes and water use behaviour resulting from different degrees of water scarcity.

In each wave 800 respondents were recruited for participation, comprising a representative sample randomly drawn from major cities and rural areas within the 5 districts of Cyprus (Nicosia, Limassol, Larnaca, Famagusta, and Pafos). Six hundred and four respondents participated in both waves of the survey.

The current research identified very high levels of personal importance and concern about water shortages amongst Greek Cypriots. These high levels of importance and concern were also marked by a high level of consensus about their importance. In addition, respondents exhibited strong beliefs that domestic water saving is an effective measure for reducing water shortages. Together, these findings indicate that in terms of raising public awareness and perceived self-efficacy, high levels have been achieved.

Those who have taken up a subsidy did not differ significantly from others on either the metered water use or normative beliefs. Also, only a tiny proportion of our sample had taken up a subsidy (3.7% at wave 1, 6.1% at wave 2) suggesting that their provision by the government is not (yet) accomplishing the purpose of reducing water use.

A governmental subsidy is available to help households build their own borehole, however, borehole ownership did not lead to reduced metered water use, nor did it result in more realistic beliefs about own water use. This was true for both data collection points in April and September, 2009.

A high percentage of people were not interested in taking up any of the subsidies on offer and since the time of this survey the Cypriot government ceased offering the subsidies (from the 6<sup>th</sup> of December, 2010).

There is evidence that many people do not regard installing additional household water storage tanks as undesirable even though it is counterproductive from the collective view point of safeguarding supplies and is technically illegal. Indeed those who think this practice is acceptable also tend to have larger water bills suggesting they also use more water.

### **3) Barcelona**

In response to a chronic water shortage and poor drinking water quality issues Agbar, the city's water company, introduced new treatment infrastructure designed to deliver better quality water to the population. In some areas of the city water from the Llobregat River treated by the new system was delivered. In other areas this water was mixed with existing supplies and in other areas the water treatment process remained unchanged. We compared the responses of consumers in these three areas to assess the impact of these changes on the public.

Respondents from all three areas were asked whether they noticed any change in their water during the past year. More than 80% of respondents in each of the three areas said they had not noticed any change.

Of those who indicated that they had noticed a change and that the water was improved the highest percentage was from areas with new treated water. An almost equal percentage of respondents from areas served with the mixed water thought the change was in a positive as thought that it had changed in a negative direction. Few of the respondents from Besòs, the area receiving non-desalinated (original source) water, thought the water was better now, and in fact out of those who reported noticing a change, a larger percentage thought it was in a negative direction.

There were no differences in satisfaction with tap water services among the three areas but there were differences in satisfaction with taste, smell and colour.

There were clear differences in people's preference for drinking water. Notably, almost twice as many people from areas supplied with the new treated water and the mixed water reported drinking only bottled water compared to people from areas with the original water. The reverse was also true - about twice as many of the respondents from areas supplied with the original water reported drinking only tap water.

Refraining from drinking tap water in areas where the new treated water is supplied cannot be explained by health concerns.

The two strongest predictors of satisfaction with the water company were whether the company was thought to strive to provide high quality water, and whether it was perceived as ethical and socially responsible. It is notable that these are both aspects of social trust (as is being close to the people) as they are concerned with assessments of whether the company has customers' interests at heart. Efficiency was also a

significant predictor which related to competence and thus confidence.  
Environmental performance was apparently irrelevant to satisfaction ratings.

#### 4) Netherlands

The overall goal of the survey was to examine the aspects of the service provision determined satisfaction. Amongst the specific questions examined in the survey were:

- whether the experience of a problem with the service affected consumers' satisfaction and attitudes towards the company,
- whether people who contacted the company differed in their levels of satisfaction compared to those who made no contact,
- what aspects of the interaction with the company predicted satisfaction with the contact; and
- whether the interaction with the company affected more general attitudes, such as trust, confidence, and satisfaction.

3452 respondents participated in the survey. This sample consisted of people who had contacted the company in the last 3 months, as shown by the TNS NIPO's records and confirmed by respondents (n = 1509), and a demographically matched sample of respondents who had not contacted the company in the past 3 or more months (n = 1943).

Those people who had contacted the company were divided into people who had complained to the company, people who had been in contact who had problems but had not complained about them specifically, and those who had made contact but had no problems with their supplies. Those who had not contacted the company were divided into those who had no problems and those who reported that they had problems but had not contacted the company about them.

These five groups did not differ on any major demographic characteristics.

What is notable about these data is that with the exception of a small number of people who had multiple contacts with their companies about a problem, satisfaction levels were above the scale mid-point for all groups.

It is also the case that while we are able to point to statistically reliable differences between groups in satisfaction levels these are substantively small effects – they are statistically significant due to the relatively large sample size and increased statistical power that results from this. Substantively, we are looking at minor differences in satisfaction levels amongst a largely satisfied population.

Satisfaction levels are highest among individuals who contact their companies for reasons other than complaining. Their satisfaction levels are higher even than individuals who claim to have no problems and therefore do not contact their companies. As this was a cross-sectional survey it is not clear whether contact with the companies actively enhances satisfaction or whether it is the particularly satisfied who chose to contact their companies for general enquiries but this points to the value of positive interactions with consumers.

Among those who do contact their companies, satisfaction with the contact is predicted by the accuracy and the speed with which the query or problem was dealt with. That is, it is the task solution focus and not the social aspects of the interaction that contribute to consumers' satisfaction with the contact. This does not mean that empathy and politeness are irrelevant but rather that a problem-solving focus is what consumers are looking for.

Needing to have multiple contacts with the company degrades satisfaction regardless of the initial reason for the contact. Consumers seem to prefer a single effective interaction rather than multiple interactions.

There is evidence of halo effects – lowered satisfaction with one aspect of a service is translated into lowered satisfaction with other, unrelated aspects of the service.

We found satisfaction was positively associated with awareness of information being available from the company. Although this effect occurred for all types of people who contacted their suppliers, it was especially pronounced for those who had experienced problems with their water supply. Many people are apparently unaware of the information that is available to them, and this points to a potential area for improvement. It is not merely providing information that is important but making sure that people realise that companies have done this.

There are major differences between people served by the different Dutch water companies in awareness of the existence of information available to customers. This ranges from 65% awareness to 29%.

There is a marked gap between the numbers of people saying that they want background information, and the numbers using the websites to get such information given the ease with which such searches can be made. Over 70% say they want information on water quality issues, for example, yet only around half of this number have used the websites to find this. An explanation for this may simply be that when asked what they want information about, people mention what they don't know at the time of being asked and that these information 'needs' are not always that strong or real. However, as above, making customers more aware of the kinds of information they could access, rather than providing a large volume of unwanted information, is likely to be a good strategy.

## **More information**

The report is deliverables 6.1.8 & 6.2.8

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