CCW

The voice for water consumers
Llais defnyddwyr dŵr

**Public views on the water environment
July 2021**

community research

ccwater.org.uk

Foreword

The water sector fundamentally relies on the natural environment to function, and without sustainable behaviour the long-term future of the sector and vital eco-systems are threatened. Consumers have always valued the environment, although in recent years key issues, such as climate change, have raised it up the agenda. The time was right for us to carry out this research to give us up to date insights into the views of water consumers.

During a year of pandemic and lockdowns people have valued water environments greatly and recognised how important they are. This is irrespective of whether they visited them regularly or only occasionally. The need to look after these environments for future generations was raised by participants throughout this research. There was also widespread agreement that collective action is essential to address problems with the water environment, with the public, water industry, and government all having a role to play.

While people are aware of problems such as pollution, and the difficulties of maintaining bio-diversity the role that water companies play in addressing these problems is less well known. However, as information was shared about some of the great work that companies have been doing, the majority of participants expressed the view that water companies should go 'beyond the basics' of meeting the minimum legal requirements when it came to the water environment. They accepted they would need to pay for improvements to the water environment, and rightly want to ensure these charges are fair. They also held clearly expressed concerns for those in financially vulnerable circumstances, particularly given the economic impacts of the pandemic.

Most participants in the research expressed themselves as both customers (thinking about the impact on their services and bill levels) and citizens (taking a wider view, with concern for the impacts on society). However, environmental issues tend to inspire 'citizen thinking', with the participants in the research more likely to see the environment as a valuable resource that needs to be respected and protected.

Future customers (participants who had not yet paid a water or sewerage bill) were likely to prioritise the environment more highly than current customers. Companies need to be aware of this when planning for the longer term and balance the views of current with future customers – who arguably have a stronger stake in the long term environmental consequences of water industry operations than many current customers.

Overall, this research is evidence of consumer opinion that will help inform our own policy positions and aid stakeholders in a range of ways, from planning environmental projects to engaging with their own customers. Consumers are recognising the need to look after the environment more and more; and they expect water companies to take meaningful action. Taking opportunities to inform customers about the wider environmental improvements they deliver also has the effect of making water bills more justifiable. There is also a continuing need to encourage people to see the contribution they can make, through small behavioural changes, so that we all take collective responsibility for the future.

Dr Mike Keil

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CCW

Contents

1. Executive summary

1.1 Introduction, objectives and approach

The Consumer Council for Water (CCW) wished to conduct research into how people value and understand the water environment, their preferences for how it should be managed, and their views on current policy directions, taking account of the difference in policies between England and Wales.

The aims of this research required a deliberative approach where members of the public are given the time, information and opportunity to consider complex subjects to reach an informed opinion.

This research, conducted by Community Research, happened in February 2021 during the COVID-19 lockdown, and therefore a fully online deliberative process rather than a face-to-face approach was adopted. This involved an online forum with 62 participants (recruited to represent a broad range of current and future water customers) which lasted 2½ weeks; followed by a small number of live online focus groups which involved reconvening 18 of the original participants.

1.2 Key findings

Engagement with the water environment

The large majority of participants in this research reported spending time in natural environments once a week or more during the last year (which appears broadly similar to national data).[1]

There was clear evidence of the very high value that most participants placed on visiting these environments in their lives. They provided calm, a connection with nature and natural beauty, and opportunities to engage in enjoyable activities. Sometimes the benefits mentioned were water-specific, but more often they were simply to do with being outdoors in a natural environment.

Participants recognised that the water environment serves several diverse and important functions. They talked broadly about two sets of functions: for the environment/wildlife; and for human health and well-being. In terms of the latter, the functions discussed ranged from essential functions necessary to support and sustain human life (the provision of a safe supply of water to households and to agriculture to allow for the production of food) to more discretionary functions which positively impact on wellbeing, such as places to walk and enjoy nature.

Water environmental issues were very much seen as part of the wider environment agenda. When participants were asked what environmental issues they had been aware of in the last week, whilst more participants commented about general environmental issues, water-specific environmental issues were nevertheless raised by a substantial

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[1] Data in Wales is collected in a slightly different way, but the figure across England only, based on data published by Natural England is that 70% of the population visited such spaces with this level of frequency.

number of participants. It is not possible to draw conclusions from this about awareness of water environment issues amongst the public generally, given the qualitative nature of this research. However, many participants did spontaneously mention flooding and plastic pollution, and also occasionally sewage pollution, problems with biodiversity and wildlife, rising sea levels and changing rainfall patterns. When asked about which of these problems they had directly experienced, plastic pollution/littering was by far the most widespread.

Following the provision of information, when asked which water environment-related problems were of most concern, pollution elicited by far the most concern. Climate change, biodiversity loss and water shortages were also widely mentioned. Several factors affected participants' level of concern - how quickly problems might emerge, how easy they will be to reverse, how widely they might spread, and what actions are and could be taken. Again, they considered impacts on both people and the environment/wildlife.

At this early stage, there was already some unprompted discussion about the cause of problems and where responsibility might lie for addressing them.

Expectations of who should play a role in water environment management

Participants tended to have very low levels of awareness of who has responsibility for managing the water environment. When asked for their views on who should play a role in addressing issues, the broad consensus was that it was a collective responsibility with multiple actors needing to play their part.

The response of governments was felt to be crucial in terms of leadership and setting an overarching strategy, as well as in terms of regulation and enforcement.

The majority of participants felt that water companies playing an active role was entirely appropriate - they have a vested interest; they have the means, resources and expertise and a direct relationship with consumers, so can influence behaviour. However, whilst this was prior to any cost discussions, many participants also flagged the fact that they are commercial organisations and so have competing priorities and so any activity will require close monitoring and regulation.

Those who negatively impact on the water environment (for example farmers, developers as well as individual consumers) were also felt to have a significant responsibility; in addition to individual consumers. Action by the latter was felt to be constrained by consumers not knowing what to do and perceptions that individual actions do not make much difference.

Participants spontaneously discussed how action to tackle water environment issues might be stimulated. Most focussed on a 'carrot and stick' approach i.e., stringent fines when rules are broken and incentives to encourage positive behaviour change. The call for fines and incentives applied at individual, organisational and community levels, for example fines for individuals who litter as well as fines for companies or farmers who pollute waterways.

How far should water companies go?

Participants were provided with information about the actions that water companies can take on the environment in the form of an animation, which provided examples and described three possible levels of action[2] that water companies might undertake in relation to different issues.

For all of the stated issues, the desire expressed by the majority of participants was for water companies to go 'beyond the basics' of meeting the minimum legal requirements. This was particularly strongly expressed in relation to both the decline or extinction of plant and animal life and global warming / climate change, where half or (in the case of extinction of plant or animal life) over half, wanted water companies to go to the highest possible level.

Within this, there were various 'schools of thought' in terms of whether action was required at the highest level across all issues or whether certain issues should be a greater focus for water companies' actions.

Having discussed the degree to which the environment should be a priority for water companies, participants were asked to prioritise a list of six other responsibilities[3] that water companies have to balance (alongside the environmental priorities they had been talking about). 'Managing the environmental impact of what they do' was the third priority when averaged across all responses. This statement was ranked only below statements relating to the provision of clean water and treating used water. It was placed higher than statements relating to affordability and accessibility of services.

However, that is not to say that the latter are unimportant - many participants said they had found the process difficult and emphasised that everything listed is important to some degree. Some felt that helping people on low incomes was something for government to consider rather than water companies. Furthermore, at the start of the process few of the participants were aware of water companies' role in respect of the environment or of the action that they already take. The online group participants stated that they would not have selected the environmental statements prior to the research as they simply would not have associated them with water companies – when statements relating to cost and affordability are more top of mind.

Who should pay for environmental improvements and how?

Many participants were comfortable in principle with the public paying for improvements to the water environment. They saw benefits in terms of the environment, society and future generations. They also acknowledged that it is acceptable and fair because the

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[2] Basic (Level 1) Investing to the minimum level; Beyond the basic (Level 2) Investing more for the benefit of customers; Going further (Level 3) Investing more for the whole of society, as shown in more detail at Appendix 10.3.
[3] The full list of responsibilities was: 1. Providing clean and reliable drinking water to peoples' taps; 2. Removing & treating water that has been used before sending it back to rivers; 3. Managing the environmental impact of what they do; 4. Providing schemes to lower water bills to help people on low incomes; 5. Helping customers access support in ways to suit them e.g. not online / language needs; 6. Planning & investing to keep services reliable, despite climate change/ population growth
7. Keeping bills as low as possible. The order was randomised for participants.

public would benefit and have also contributed to the problems. However, a substantial minority disagreed, arguing that polluters should pay, beneficiaries should pay, or water companies should pay from profits etc.

There was some debate on the best way to pay for environmental improvements and the suggestion that a combination of approaches (e.g., tax, water bills, charitable donations) would work best – mainly because each approach had different strengths and weaknesses.

Overall, there was widespread support for paying for environmental improvements through water bills. However, there were several caveats, limits and assurances that would make them feel more comfortable about this approach relating to the amount charged (ensuring affordability and keeping increases reasonable) and how the money is spent (money being ring-fenced, activity being monitored and there being evidence of a positive outcome).

Generally, participants accepted paying more for environmental improvements (however, it should be noted, that whilst hypothetical bill increase amounts were deliberately not given, some participants assumed that any increases would be fairly small). They also believed that such increases need to be fair. In particular, the need for the polluter to pay was mentioned repeatedly.

Views differed about whether water bill-payers should pay for improvements related to all environmental issues or only some of them. Almost all future customers (who are not yet paying bills themselves) were in favour of paying for action on all environmental issues.

Differences by audience

Some differences were apparent between sub-groups of participants. These should be viewed with caution given the qualitative nature of the research and the difficulty of identifying whether and how such differences might arise from the audiences' identities:

- Future customers were less likely to suggest water companies should focus their strongest efforts on their core business or central remit.
  - They were, conversely, almost universally likely to suggest that companies' strongest focus should be on the combined issues of global warming / climate change; and the decline or extinction of plant and animal life.
- Almost all future customers were in favour of paying for action on all, rather than some, environmental issues.
- Participants from Wales seemed to be more aware of water companies' role in protecting the water environment as they were more likely to mention water companies' role unprompted, before being informed. They also seemed to be more aware of pollution incidents spreading beyond the local area.

In spite of the different structure of Dŵr Cymru, there was no clear evidence of greater trust in water companies among participants in Wales than those in England. When asked if they trust water companies, on the whole participants in Wales did not seem to distinguish between their water company, water companies in general, and large

companies as a whole. The reasons underlying trust (or lack of trust) in water companies were similar to those expressed by customers in England.

Citizen vs. consumer

In addressing the objectives of this research CCW was keen to ascertain whether there were any discernible differences in opinion when people responded as water customers/bill-payers (thinking about their personal financial impact, as well as other personal costs/benefits) or as citizens (thinking about collective and societal responsibilities, costs and benefits). This is important because if views from a citizen-perspective are different from those from a customer perspective, this creates learning for the framing of future engagement and future research by water companies on this subject. Furthermore, the perspective taken could potentially affect acceptability of environmental actions taken by water companies, bill increases to pay for them, and calls for individual action/behaviour change.

There was no clear separation between participants' thinking as citizens versus their thinking as bill-payers. There was a spectrum of views between 'strongly citizen' and 'strongly customer'. Whilst some were more firmly concerned about the customer and bill-payer perspective throughout; many saw both perspectives at different stages in the process and some took a more firmly citizen approach throughout. Many participants showed signs of thinking in both ways. Nevertheless, with this backdrop, it was possible to discern a shift in views through the deliberative process and a difference between future and current customers.

Participants themselves recognised that taking part in the research process, building their knowledge had fundamentally changed their views and likely responses.

From early in the forum, it was clear that the water environment spontaneously inspired 'citizen thinking'. It was seen as a valuable resource shared and enjoyed by many now and to be preserved for future generations.

Based on a greater understanding of the extent of the issues facing the water environment and a broader knowledge of water companies' roles, views about companies' priorities and willingness to accept that this may impact on bills had changed. Participants said that the process had moved them from the potential to focus on personal financial impact (customer viewpoint) towards support for collective and societal responsibilities (citizen viewpoint).

Knowledge gleaned over the course of the project changed people's perspectives and supported the citizen perspective. Examples of current water company projects (as shared in Appendix 10.4) appeared to be instrumental in changing participants' views about the role of water companies in managing the water environment. There was very limited prior awareness that water companies did work of this kind. Knowledge of projects, particularly those affecting nature and wildlife, were appealing to people and influenced their views of water companies.

Knowing about the issues and water companies' actions had multiple impacts, it:

- Emphasised the citizen perspective – seeing the water environment as a collective responsibility, with some even vowing to volunteer and help with solutions;
  but it also:
- Made water bills more justifiable (giving bill-payers understanding of what is delivered, beyond the delivery of tap water and removal of sewage).

When asked about who should pay, there was inevitably more focus on bills but the citizen perspective was still strongly in evidence.

2. Background and approach

2.1　Research context and objectives

The Consumer Council for Water (CCW) wished to conduct research into how people value and understand the water environment, their preferences for how it should be managed, and their views on current policy directions, taking account of the difference in policies between England and Wales.

The research, conducted by Community Research, represents the first time CCW has sought customers' views across a wide range of environmental questions at the national level.

This research will help the water industry to understand how people relate to the environment, their expectations of those that set policy and their priorities going forward. A key objective was exploring if there are any discernible differences in opinion when people respond as water bill-payers or as citizens.

Doing the work at the national level has the potential to provide the regulators and water companies with a helpful benchmark for their own research. It should also help to explore how these topics are best framed and contextualised in future research.

2.2　Approach

Overall approach

The aims of this research required a deliberative approach where members of the public are given the time, information and opportunity to consider complex subject matter to reach an informed opinion.

This research happened in February 2021 during the COVID-19 lockdown, and therefore a fully online deliberative process rather than a face-to-face approach was adopted. This involved an online forum with 62 participants which lasted 2½ weeks; followed by a small number of live online focus groups which involved reconvening 18 of the original participants.

Sample

Participants were recruited to ensure representation from a range of different types of water consumers (including some future customers i.e. individuals aged under 30 who have never been a water company customer), including age, gender, life-stage, socio-economic background, as well as a mix of metered and unmetered customers. There were also at least 4 customers from each of the larger Water and Sewerage companies (WaSCs), other than Hafren Dyfrwdy[4].

Please see Appendix 10.1 for further details of the target and achieved sample make-up. All participants were incentivised to take part in the research.

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[4] One participant was a Hafren Dyfrwdy customer.

The following people were screened out of the process:

- Those who work in, or have immediate family who work in, market research/ journalism/politics; water companies or associated regulators; consumer organisations or environmental campaigning organisations.
- Those who have taken part in a market research discussion in the last 6 months.

The process

The process was designed to take people on a journey to build their understanding and reach an informed view. In short, the aim was to take them from being relatively uninformed, to being better informed.

Issues related to water company billing and cost were not directly mentioned within any stimulus until late on in the process. This was deliberate in order to try to ascertain whether views changed when people were directed to consider the views of bill-payers, having reached their views as citizens without explicit reference to the impact on personal finances.

Participants took part in various activities managed through the FlexMR online platform. The community was 'live' for 2½ weeks, and participants were asked to log in and out to complete various tasks and activities. These activities included a mixture of online discussion boards and online survey-style questions, ranking and allocation exercises. Information was provided in both written form and in visual animated videos, to ensure that different learning styles were accommodated. For all questions, participants needed to provide an answer before seeing how others responded. This approach avoided some of the 'group-think' seen in face-to-face approaches, but still meant participants could consider the views and experiences of others.

Participants were asked to complete a short pre-task prior to joining the forum which involved thinking about the environmental issues they had been aware of that week, either from seeing things in their local environment or from the news.

In outline, the stages of the online forum were as follows:

- Individual survey about level of interest in protecting the environment and awareness of issues.
- Quick individual quiz to increase understanding of water environment in the UK
- Homework exercise to post a photograph representing their experiences of UK waters – the sea, rivers, streams, springs, ponds, reservoirs and / or lakes.
- Spontaneous exploration of what is known about water environment issues and challenges.
- Quick individual quiz to increase understanding of environmental issues.
- Explanatory animation describing the main problems that the water environment faces, followed by discussion.
- Explanatory animation describing different players roles in the management of the water environment, followed by discussion.

- Explanatory animation describing water company actions and activities in relation to the management of the water environment, followed by discussion.
- Individual survey asking participants to indicate preferences in terms of water company actions, followed by discussion.
- Prioritisation exercise of the priorities that water companies have to balance (in addition to priorities we have been talking about i.e. protecting the environment, resilience etc).
- Explanatory animation about who pays for water environment management and how, followed by discussion.
- Final reflections and individual self-filmed videos.

The forum was followed by a series of 90-minute online focus groups in order to further explore the issues and act as a 'reality check' on responses in the forum. All online forum participants were asked if they would be willing to take part in an online group discussion. Most (53 of the 62) participants indicated that they would be willing to do so. 20 of these were then selected to ensure a mix by key demographics and attitudes and 18 actually took part. The following groups were conducted:

- 2 x groups with current customers in England
- 1 x group with current customers in Wales
- 1 x group with future customers

As well as the CCW, the Environment Agency and Natural Resources Wales contributed to the project's development and reviewed the stimulus material.

The agenda and the stimulus material can be found in [Appendix 10.2](#).

2.3 Notes on reading this report

Research context

It should be noted that the research was conducted in February 2021, shortly after Storm Christoph caused substantial flooding across England and Wales in late January. The heavy rain and the aftermath were regular features in the media around that time and could have influenced participants' perceptions of the most concerning environmental issues.

The research also took place during the Covid-19 pandemic and the reader should also bear in mind that conducting the research during the pandemic could have changed both participants' environmental behaviours and their environmental attitudes.

There is no equivalent data for Wales, but the People and Nature survey for England[5] found that in the first lockdown, during April to June 2020 some adults in England were getting outside more often than usual with 40% of adults reporting that they had spent more time outside since the coronavirus restrictions began and 31% were exercising

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[5]   https://www.gov.uk/government/statistics/the-people-and-nature-survey-for-england-adult-data-y1q1-april-june-2020-experimental-statistics/the-people-and-nature-survey-for-england-adult-data-y1q1-april-june-2020-experimental-statistics#have-peoples-environmental-attitudes-altered-during-covid-19

more in outdoor spaces. In comparison, some adults were not getting outside very often (if at all) with one in three (35%) not visiting a natural space in the last 14 days and one in five adults (21%) not having visited in the last month. The number of people visiting natural spaces is lower than would be expected considering long-term trends identified in the Monitor of Engagement with the Natural Environment 2019[6] (MENE) survey. There is some evidence that COVID-19 has exacerbated existing inequalities in access to natural space. However, the same survey found that during January 2021, national lockdown restrictions in England do not appear to have had an effect on the proportion of adults visiting green and natural spaces. In January, almost two thirds of the adult population (61%) had visited a green and natural space in the last 14 days, which was consistent with October 2020 (62%), before the second national 'circuit breaker' lockdown began on October 31st.

As well as influencing time spent in the outdoors, the pandemic could have also influenced participants' other environmental behaviours and the importance they place on the environment per se. It could also have caused the environment to slip down the priority list because of rising concern about health, economy and individuals' own financial security.

According to the People and Nature survey, over April to June 2020, the majority of the public reported some environmental behaviour change. Over two thirds (69%) of adults reduced the amount they drove or travelled by car this spring and 38% reduced their food waste.

According to YouGov data[7] from a survey of British people, in June 2020, a quarter (24%) said the environment is one of the most important issue facing the country, ranking fourth below the economy (57%), health (57%) and Britain leaving the EU (43%). Although the environment was seen as a more important issue prior to the start of the coronavirus pandemic in March (33%), it has remained around the same level as it was in 2019. It was significantly higher than previous years; the percentage of people in 2018 ranking the environment as a top issue never rose higher than 18%, and in 2017 it ranked lower than 10% more often than it did above.

The People and Nature Survey in England also found that environmental issues were important – they were ranked as the third most important issue facing the United Kingdom between April and June 2020, ranking above issues such as unemployment, the EU/Europe, the cost of living, and immigration.

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[6]   https://www.gov.uk/government/collections/monitor-of-engagement-with-the-natural-environment-survey-purpose-and-results

[7] https://yougov.co.uk/topics/politics/articles-reports/2020/07/07/covid-19-environmental-issues

Methodological considerations

Conducting the research during the Covid-19 lockdown period meant that we adopted a purely online methodology. Whilst we had comprehensive quotas for a diverse range of demographic characteristics and specific quotas to ensure the inclusion of some vulnerable consumers, clearly those who are digitally excluded could not take part.

It is worth noting that the participants in this research 'opted in' to the process and actively responded to communication about the research saying that they were willing to participate. It could be that those who opted into the process are different in some way to the wider population as a whole.

The data from this research were both qualitative (free-text responses and discussions) and quantitative (ranking exercises and prioritisation exercise). As a result, this report includes both narrative and numerical findings. However, it is important to bear in mind that this was a qualitative, rather than quantitative, study. It was designed to elicit depth and understanding of participants' views and experiences. The sample size (62 participants from diverse backgrounds) mean that findings cannot be extrapolated to describe the whole population. Any figures presented in this report need to be read as indicative, not representative. All figures presented in the report are raw numbers, not percentages, and apply just to this cohort of participants.

Attribution of verbatim quotes

The report includes quotes from participants in their own words to illustrate the findings. To protect their identity, quotes are anonymous, but attributions for the online forum participants include their gender, age, ethnicity, socio-economic group[8], customer type and country.

Quotations taken from the online groups reference the participant's customer type and country only since transcripts from these groups could not provide the additional detail on individuals' demographics.

Participants views are reported as found and at times reflected poor understanding and / or misinformation. Quotations are clearly indicated by the use of coloured text in order that they can be read with this in mind.

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[8] Classified using a standard market research approach based on main income earner in household as follows: A - upper middle class (Higher managerial roles, administrative or professional); B - middle class (Intermediate managerial roles, administrative or professional); C1 - lower middle class (Supervisory or clerical and junior managerial roles, administrative or professional); C2 - skilled working class (Skilled manual workers); D - working class (Semi-skilled and unskilled manual workers); E - non working (State pensioners, casual and lowest grade workers, unemployed with state benefits only)

3. Engagement with the water environment

Section summary

- The large majority of participants in this research reported spending time in natural environments once a week or more during the last year (which appears broadly similar to national data).
- There was clear evidence of the very high value that most participants placed on visiting these environments in their lives. They provided calm, a connection with nature and natural beauty, and opportunities to engage in enjoyable activities. Sometimes the benefits mentioned were water-specific, but more often they were simply to do with being outdoors in a natural environment.
- Participants recognised that the water environment serves several diverse and important functions. They talked broadly about two sets of functions: for the environment/wildlife; and for human health and well-being. In terms of the latter, the functions discussed ranged from essential functions necessary to support and sustain human life (the provision of a safe supply of water to households and to agriculture to allow for the production of food) to more discretionary functions which positively impact on wellbeing, such as places to walk and enjoy nature.
- Water environmental issues were very much seen as part of the wider environment agenda. When asked what environmental problems they had heard of recently, participants spontaneously mentioned flooding and plastic pollution, but also occasionally sewage pollution, problems with biodiversity and wildlife, and rising sea levels and changing rainfall patterns. When asked about which of these problems they had directly experienced plastic pollution / littering was by far the most widespread.
- Following the provision of information, when asked which water environment-related problems were of most concern, pollution elicited by far the most concern. Climate change, biodiversity loss and water shortages were also widely mentioned. Several factors affected participants' level of concern - how quickly problems might emerge, how easy they will be to reverse, how widely they might spread, and what actions are and could be taken. Again, they considered impacts on both people and the environment/wildlife.
- At this early stage, there was already some unprompted discussion about the cause of problems and where responsibility might lie for addressing them.

3.1 Engagement with the water environment

In the early stages of the research, participants were asked to answer some questions about how frequently they had spent free time outside in green, blue and natural spaces over the preceding 12 months. The answers provided are shown in Figure 1.
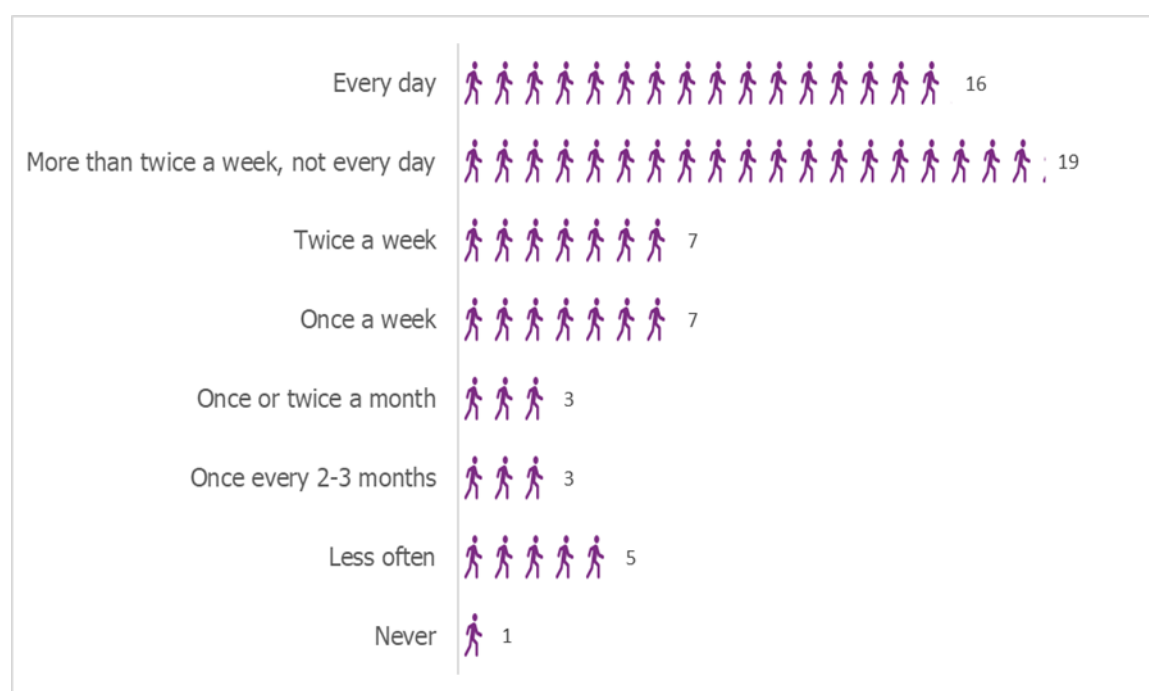
Figure 1 - Frequency of spending free time outside in green, blue and natural spaces[9]

The large majority of participants in this research reported spending time in natural environments once a week or more during the last year. Data in Wales is collected in a slightly different way but the equivalent figure across England only, based on data published by Natural England[10] is that 70% of the population visited such spaces with this level of frequency. Broadly speaking then, our sample appears similar in terms of the frequency with which they were spending time in natural environments. This behaviour has increased over recent years with the equivalent figure being 62% in 2017-18[11].

In the month before taking part in this research, just over half of participants (33) reported they had visited a water environment such and a river, stream, lake, reservoir or canal, whilst around a third (21) had visited a beach.

Participants were then asked to upload a photograph to represent their experiences of UK waters and to describe the place shown and what it means to them. A wide variety of

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[9] These spaces were defined in the question as follows: This includes any visits to…
- green spaces in towns and cities (e.g. parks)
- 'blue' spaces in towns and cities (e.g. canals, rivers)
- the countryside (e.g. farmland, woodland, hills and rivers).
- the coast (e.g. beaches, cliffs) and activities in the open sea

[10] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/967040/Monthly_interim_indicator_data_January_2021.ods

[11] https://www.gov.uk/government/statistics/monitor-of-engagement-with-the-natural-environment-headline-reports-and-technical-reports-2016-2017-to-2017-2018

water environments were represented in this exercise and there was clear evidence of the very high value that most participants placed on these environments in their lives.

A selection of the images shared is shown in Figure 2. The photographs included beaches, rivers, streams, city-scapes, countryside, local parks, harbours and estuaries. The references and descriptions shared were mostly very positive in nature, with many describing the places as important to them:
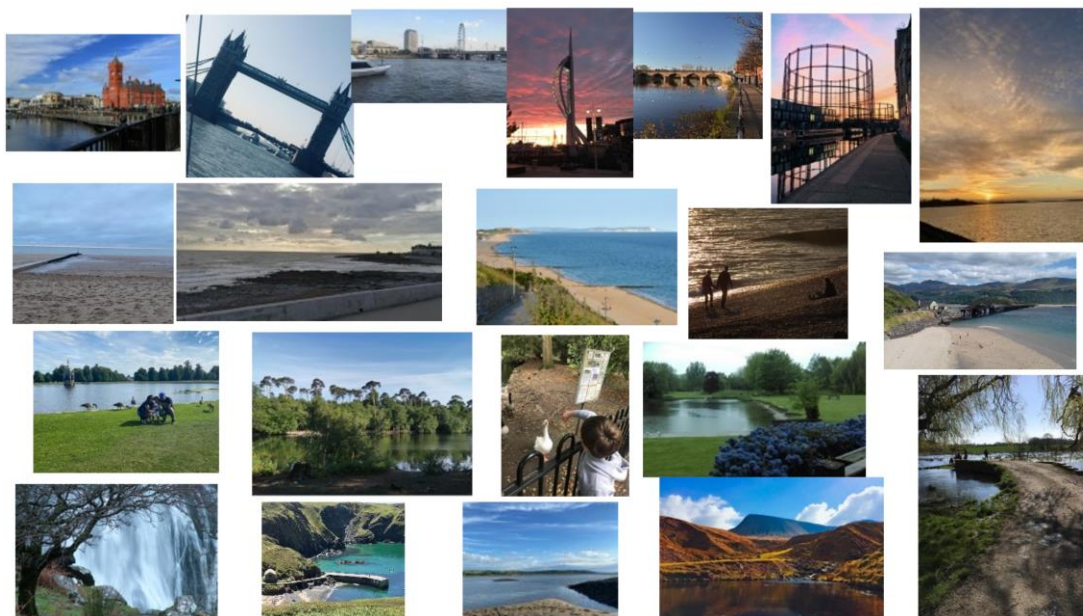
Figure 2 - Selection of participants' images

Alongside the photographs, participants were asked to briefly explain how these places fit into their lives and what they think about them. Later discussions explored this in more detail (see Section 3.2) but, based on the commentary that was provided alongside the photographs uploaded, Figure 3 shows a word cloud - a graphical representation of word frequencies that gives greater prominence to words that appeared most frequently - to summarise the responses provided.

It is immediately clear that these water environments play an important part in many participants' everyday lives. They are used for a variety of activities, but predominantly for walking. They are valued for their beauty and serenity. They evoke mainly positive emotions and memories (in many cases of childhood). They are also associated with sociable and family experiences and enjoying the beauty of nature.

Figure 3 - Word cloud summarising participants' descriptions of their chosen images

3.2 Benefits/functions of the water environment

Benefits of visiting the water environment.

Participants went on to describe three main benefits that they and others derive from visiting water environments. The benefits were clearly interlinked - for instance, it was often the connection with nature that participants found calming and relaxing.

- Water environments can be **calming and relaxing**, ideal places to de-stress and unwind, providing mental health benefits.

    The relaxation and tranquillity that natural waterways can provide. I can relate to the mental benefit as I experience a feel-good factor when I am around such waterways. (Male, current customer, England, 55-74, B, White British)

    Bodies of water help me take a step back from everyday anxieties and help me realise how insignificant those anxieties really are. (Female, future customer, England, 18-24, B, White British)

- They can help people **connect with nature** and are enjoyed for their **natural beauty**.

    Still, peaceful, serene, calm, green and beautiful. They offer the tranquillity away from the bustle of city life. (Female, current customer, England, 55-74, C1, White British)

    I enjoy sitting by the water and watching it, be that the sea or ripples in a lake (Male, current customer, Wales, 25-34, C2, White British)

- They also offer opportunities to engage in **enjoyable activities, often with family, and make cherished memories**.

  This place has fond memories, my son learning to swim, building a sandcastle, the beautiful coastline, and my first taste of scones with clotted cream. (Female, current customer, England, 55-74, D, Mixed Ethnicity)

  I have always loved boats of all types. All these waterways are enablers for fun and healthy activity. (Male, current customer, England, 75+, B, White British)

Sometimes the benefits mentioned were water-specific, but more often they were simply to do with being outdoors in a natural environment. For instance, when discussing activities when visiting water environments, participants sometimes mentioned doing activities that were specific to the water environment, such as crabbing, swimming, kayaking, boating; but much more often they mentioned general outdoor activities such as walking, cycling, walking the dog. Likewise, when describing the pleasure of being in a water environment, they only occasionally referred to water-specific qualities (such as listening to the sound of water and watching ripples or waves); but more often they referred to qualities associated with being outdoors in any natural environment (such as peace and quiet, and greenery and wildlife).

Findings from the forum echoed several findings from the Monitor of Engagement with the Natural Environment (2019)[12]. MENE found that natural spaces were visited for a diversity of reasons, similar to those that the participants mentioned in the forum, including health and exercise, to relax and unwind, and to enjoy scenery.

The Covid-19 lockdown had clearly made people even more aware of the value of visits to water and other natural environments. This was the case whether they were able to make visits and appreciated them even more than usual, or were unable to make visits and missed them. Sometimes they longed to visit water environments specifically (e.g., the coast), but sometimes the longing was for natural environments in general.

  I consider myself fortunate in living in a rural environment where these benefits are readily to hand, and the restrictions of lockdown are less onerous. (Male, current customer, England, 75+, E, White British)

  This exercise has only made me crave going to the seaside even more. It will certainly be my first port of call once lockdown eases. (Female, current customer, Wales, 35-54, D, white British)

  What do I get from this exercise [looking at other participants' photos]? A stinging sense of sad inability to access these things myself. (Female, current customer, Wales, 55-74, D, White British)

This exercise of uploading a meaningful photograph and the related discussion reinforced to participants how important water environments are to them. This was partly because

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[12]   https://www.gov.uk/government/collections/monitor-of-engagement-with-the-natural-environment-survey-purpose-and-results

they tended to choose places to which they had a strong personal attachment. Part of their value frequently came from the happy memories that they evoked.

> As someone who grew up by the sea I've always loved being near water - now that I live in the middle of the country I don't get to the sea as often as I'd like so we do a lot of walking along canals and around lakes, reservoirs etc. Being by water gives me a connection to my childhood and great family memories. (Male, current customer, England, 55-74, C1, White British)

At this early point in the research process, when discussing water environments that meant a lot to them, participants began spontaneously to mention **concerns about their deterioration** and emphasised the importance of looking after them.

> We all need to work together to make sure these places stay as beautiful as the day we saw them. (Female, future customer, England, 18-24, D, White British)

> My picture of the River Thames was nice from afar, but a closer look will tell you a different story - that actually the water is filled with a lot of litter which is a shame. (Female, future customer, England, 25-34, C1, Indian)

Perceived functions of the water environment

Participants recognised that the water environment serves several diverse and important functions, in addition to the recreational and personal benefits discussed already. They talked broadly about two sets of functions: for the environment/wildlife; and for human health and well-being, including for water supplies.

Supporting the environment

Some participants talked about the importance of the water environment for the environment/wildlife. Understanding of the role of water environments differed. Some saw them as a "home for the local wildlife", while others had a more sophisticated understanding of "ecosystems" and "ecology".

Some participants also made clear that they saw the water environment as part of the wider environment. Protecting it was an essential part of protecting the wider environment but it was not enough; the environment as a whole needs to be protected too.

> 100% we should be restoring and enhancing our water environments. Let's look after our planet. (Female, future customer, England, 18-24, B, White British)

> We should maintain all of our environment, not just water. (Male, current customer, England, 75+, E, White British)

Supporting people

Participants talked about the variety of ways that the water environment supports human health and wellbeing, i.e., having a supply of safe water in the home; water being available for agriculture and food production and places for leisure and recreation.

The functions discussed ranged from essential functions necessary to support and sustain human life ("life depends on it") to more discretionary functions such as places to

walk and enjoy nature. When talking about the importance of protecting the water environment to support people, some mentioned the needs of future as well as current generations.

> In order to protect the earth for future generations, the current generation has a responsibility in this respect. If the purity of water is not maintained today then it may be too late in the future to restore it back to its true state. (Male, current customer, England, 55-74, B, White British)

Links and priorities

Sometimes participants mentioned only one of the two functions i.e., they focused either on how the water environment supports people or how it supports nature. Sometimes they mentioned both functions, but made clear that they prioritised one of them. On the whole, the water environment's role in supporting people, including for future generations, was given greater weight than its role in supporting nature, as in the quote below.

> We need to be looked after first as humans. Then wildlife and things like that, they come afterwards. But that has to be managed and balanced in a way that it's proportionate so we can all survive and so it can all be sustained as well for the future. (Online group participant, current customer, England)

However, there were exceptions.

> We should restore water environments to ensure maximum benefit to nature first, to humans second. (Male, current customer, Wales, 55-74, E, White British)

Sometimes participants took a more holistic/integrated view and highlighted the links between the two functions. This was because they saw people as part of nature and/or recognised that people depend on nature. Younger participants, who were also future rather than current customers, (aged 18-34) were particularly likely to hold this more holistic/integrated view.

> We should definitely be enhancing our environmental waters to ensure the life that depends on it is safeguarded and not put to risk. That includes us, as we rely on our water sources like all else. (Male, future customer, England, 25-34, D, Mixed Ethnicity - White and Asian)

> It is our duty as a joint collective to ensure the planet we're using (and abusing) be maintained or there won't be a future for us and further generations. We must take care of it, just as it takes care of us. (Male, future customer, England, 18-24, C2, any other White background)

3.3   Concerns about the water environment. Spontaneous views

Spontaneous awareness of water environment problems

At the start of the research, participants were asked what environmental issues they had been aware of in the last week, either from seeing things in their local environment or from the news.

Even at this stage, before questioning focused in on the water environment, participants mentioned issues related to the water environment, as well as wider environmental issues. This suggests that water environmental issues were very much seen as part of the wider environment agenda. Participants particularly mentioned flooding[13] and plastic pollution, but also occasionally sewage pollution, problems with biodiversity and wildlife, and rising sea levels and changing rainfall patterns. Unsurprisingly given the time of year, water shortages were not mentioned when talking about issues that they had been aware of in the last week.

There were several mentions about how such **problems seem to be getting worse** in recent years. There were no comments about improvements at this stage.

> Plastic pollution in the world's oceans is expected to increase by 80x between 1990 and 2050 according to a newly published paper. Oh, and apparently microplastics have now officially been reported in Mount Everest's snow which is incredibly scary to think about. (Male, future customer, England, 18-24, C2, any other White background)

> Locally I've noticed more flooding in areas there never used to be. (Female, current customer, Wales, 35-54, C2, White British)

At this early stage, before any information had been provided to participants at all, there was already some unprompted discussion about the cause of problems and where responsibility might lie for addressing them. For instance, flooding was attributed to climate change, housing development, "bad drains", and inadequate or absent flood defences. Plastic pollution in the water environment was seen as a problem caused by inconsiderate members of the public, and also solved by prosocial members of the public.

> I do notice rubbish chucked on the ground and can't understand why a small minority of people do this instead of throwing it into bins or taking home, spoiling the countryside, beaches, parks etc. There are a few people in my road who are constantly picking up rubbish from the streams and pathways alongside them, but as I walk every day I still see new rubbish being thrown down. (Female, current customer, Wales, 55-74, E, White British)

> Plastic on the beach, my friend posted a video of her and her family doing a beach clean. (Female, current customer, England, 35-54, C1, White British)

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[13] Flooding had been in the news just prior to the start of the research.

Some participants had direct experience of **flooding**; some knew of people who had experienced it such as family or people living nearby; and some had only heard about it through media coverage of other parts of England or Wales. It was recognised that the impacts could be very difficult for those whose homes and businesses were affected.

> Flooding seems to get worse every year and must be a nightmare for those affected by it, it's so damaging and must be a constant worry. (Male, current customer, England, 55-74, C1, White British)

> Floods and the devastating damage caused to properties and in turn the lives of entire families. Watching the flooded river just 100 metres from my home is quite scary when realising that the water has complete control until there is a manmade intervention to divert it from its course. (Female, current customer, England, 75+, D, White British)

Again, awareness of **sewage pollution** came from a combination of personal experience and media coverage.

> I've read in the papers about Thames Water dumping sewage in the river Chess. (Male, current customer, Wales, 55-74, E, White British)

> Locally, run-off flowing into the sea and sewage outfall incidents are a concern for me. I have the Surfers Against Sewage app which alerts me if my local beaches are affected and it's very concerning how often that happens. (Female, current customer, England, 35-54, E, White British)

Plastic pollution was a concern in its own right, but also because of its impact on wildlife. While participants sometimes talked about local plastic pollution, this was also recognised to be a global problem to which we and others have contributed.

> Littering in streets I see a lot in my local environment, and on a more global scale things like plastic pollution in the oceans, rivers or lakes. (Male, future customer, England, 18-24, D, White British)

Some participants also mentioned concerns about **animal suffering**, caused by litter and plastics, as well as **loss of biodiversity** (although not using that term).

When talking about the wider environment, beyond the water environment, concerns were wide-ranging. Common concerns included littering ("in Kent the current biggest environmental issue is fly tipping"); air pollution ("in London… toxic air"); and global warming or climate change. Some participants seemed to have a good understanding about the causes of global warming, e.g., they talked about what they had heard in the news about commitments to cut carbon emissions and increase renewables and plans to open a new coal mine. They also seemed to have a feel for some of the issues that climate change could lead to. Some were felt to be distant events, such as glaciers melting, sea levels rising; but others were more tangible locally, such as very high temperatures in summer and very cold in winter, or bird life being affected.

Experience of water environment-related problems

Participants did a quiz which imparted some facts and figures about the current state of the water environment and were also shown an animation: https://vimeo.com/508785094/00c304ad11, which explained the key issues being faced by the water environment – explaining pollution and the need to manage water resources carefully to balance human needs against eco-system needs.

After the quiz and video input, participants were asked about their direct experience of the issues described. In terms of recognising and experiencing such issues directly, littering in and around rivers, lakes, beaches etc. again stood out as by far the most commonly experienced problem. This was often plastic pollution, and participants sometimes used the words "plastic" and "litter" interchangeably. This was perceived as a very widespread problem, with participants commenting, for instance, that "everyone has been affected" and "I have seen this regularly".

> There are often disposable bottles and coffee cups along the banks and near the lake I often walk to.   (Female, current customer, Wales, 25-34, C1, White British)

> I lived in a seaside town and hated the summer months. The tourists came flooding in and just left tons of rubbish all around the beach despite there being ample supplies of bins and other waste collecting receptacles dotted around. People just dropped litter, plastic and god knows what on the sand when they left even though the beach warden used to use a megaphone asking people to take their rubbish home with them. It is a shame that the world we live in is now just a dumping ground for human beings' waste. (Female, current customer, England, 55-74, E, White British)

Flooding and water shortages were also within participants' experiences. Descriptions of flooding and water shortages were markedly different. The water shortages they described were sometimes distant memories, not particularly troubling, and with little clear indication of the problem besides being told to use water more carefully.

> I've experienced having the water shortage during the summer a few years back when we couldn't fill up our swimming pool because there was apparently not enough water. (Female, future customer, England, 18-24, D, White British)

In contrast, experiences of flooding were generally more recent, sometimes disturbing, and felt very real.

> I have experienced myself the harsh, wet winters we've had in Wales for the past couple of days, with some of the worst storms I've ever seen. (Female, current customer, Wales, 18-24, C1, White British)

> I have experienced heavy rainfall leading to flooding. This was a first-hand view of seeing how our waterworks and infrastructure have struggled with the increasing amount of rainfall, especially when they are meant to deal with a much more steady climate. (Male, future customer, England,18-24, C2, White British)

Other issues to do with the water environment were rarely within people's direct experience.

- Other types of pollution (sewage, agricultural, and industrial pollution) were mentioned much less than plastic pollution. Participants with a special interest or knowledge, because of work or recreation activities, were more likely to have noticed them. For instance, a rower described being aware of sewage pollution in the river he trains in. In contrast a young participant described "what looks to me like chemicals" in water bodies near her home, suggesting that she found this type of pollution difficult to recognise with certainty.

- While participants sometimes made the link between global warming/climate change and flooding/water shortages elsewhere in the forum, it is interesting to note that participants who had experienced flooding or water shortages did not explicitly say here that they had experienced global warming/climate change.

- No-one said that they had direct experience of water-related biodiversity loss. However, a participant with some specialist knowledge raised a related issue, non-native invasive species.

> We see a lot of invasive species in terms of plant life and things like crayfish which have become more of a problem in the last 10 to 15 years. (Male, current customer, England, 35-54, B, any other White background)

Participants sometimes talked about how problems seemed to have changed over time. They gave examples of both deterioration and improvement. For instance, they noted that flooding seemed to happen more frequently than in the past, and some had noticed that sea and beach quality had improved – a fact highlighted in the animation.

> I have seen beaches improve over the years, I have family in Great Yarmouth - Norfolk and I definitely have seen an improvement in the quality of our beaches. (Male, 25-34, future customer, England, B, White British)

As in the earlier, uninformed discussion about environmental issues, participants started to attribute responsibility and to talk about how the issues could be addressed, as the quotes below illustrate. They talked about the role of the public, industry, and "agencies".

> Various agencies are currently doing a lot of management work to improve drainage near the fields. The A55 used to be badly flooded as well, e.g., Xmas 2015, because the road ran at a very low level between fields near the coast. Again, it has been improved, and I have not seen flooding there since. (Female, current customer, Wales, 55-74, B, White British)

> In areas on the coast I have noticed beaches seem to be better cared for. The drive for beach cleaning seems to be working and drawing in more awareness. (Female, future customer, England, 18-24, B, White British)

There was a small group of participants who said they had no experience of the water environment-related issues that they were asked about. This group had no clear defining characteristics. They included men and women, of different ages, from different socio-economic groups, in both England and Wales, living in both rural and suburban areas. In

some, but not all cases, this lack of experience of water environment-related issues may have been because they rarely visit water environments. However, some of those who had no experience of water environment-related issues said they had visited water environments within the last month.

3.4   Response to information about water environment-related issues

Following learning about problems with the water environment[14], some participants did not find them surprising. For a few, this was because they believed that on the whole people mistreat the environment so nothing along these lines would surprise them. More generally, participants explained that they had already heard about the problems through, for instance, the news, documentaries or their education.

> There was nothing in the video that surprised me. It just highlights how badly human beings are treating the planet we live on. (Male, current customer, England, 35-54, B, White British)

> Not really [surprised] as the problems and threats have been well publicised. (Male, current customer, England, 55-74, E, White British)

Some participants began with greater levels of knowledge. As a result, several learned just one new fact while others said they had learned a good deal more. Even some who considered themselves well-informed had learned something new. In the most extreme case, one participant said that she was surprised by six facts.

> Was there anything you found surprising? (1) Only 16% of water bodies in England in good ecological health – I am really glad it is a better situation in Wales. (2) Overflow into main waterways when blockages. (3) Heavy rain is not useful as it can create sewerage blockages. (4) Concerns that too much water is being taken for the environment. (5) 1% of total UK carbon emissions from water companies – this is just a vicious circle then! (6) Extinction of some water-based animals. (Female, current customer, Wales, 35-54, D, White British)

Some participants learned about a problem for the first time from the animation. However, in other cases, they gained new insights into a problem they had already heard about. These new insights fell into four categories, as shown in Figure 4, with illustrative quotations providing examples of how participants expressed their surprise.

Overall, the facts provided on the following issues relating to the water environment seemed to cause the most surprise:

- Sewage pollution
- Biodiversity loss; and

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[14] Through the quiz and animation, already referenced: https://vimeo.com/508785094/00c304ad11.

- The overall health of the water environment.

The information provided aroused a range of emotions including curiosity, disappointment ("16% of waterways being in good ecological health, 40% in Wales - awful!"), disgust ("Horrified! Sewage! Really?"), anger and worry.

I did not know **the extent** to which habitats and wildlife had been affected – 90% of wetland habitats gone!?

I was very **surprised by the statistics** that only 16% of English waters are considered 'healthy'.

Aware in general but made more aware of how serious it was.

Aware in general but had not realised that it applied in England and Wales

Yes, I appreciate there is climate change but **didn't think it would negatively affect us**.

I was surprised that we **can still let sewage into the sea** – from old sewage systems

Assumed the problem had been solved so were **surprised to learn that it still existed**.

Learned why a problem mattered (i.e. its impact) or why it arose (i.e. its cause).

It was surprising to learn the percentage of good water bodies **in England and Wales** ... I assumed that a country of this repute would be much better at things like this

I was surprised to find out that it is **so hard to create a balance** between how much water we take out and its effect on biodiversity.

I was a little surprised at the current impact of agricultural pesticides, as **I thought they were now more environmentally friendly**.

I guess I did not realise water usage was a balancing act so found it interesting that this could have a direct impact on the environment. If I am honest, **I never really understood** why it was environmentally beneficial to save water. The only benefit I could see was cost.
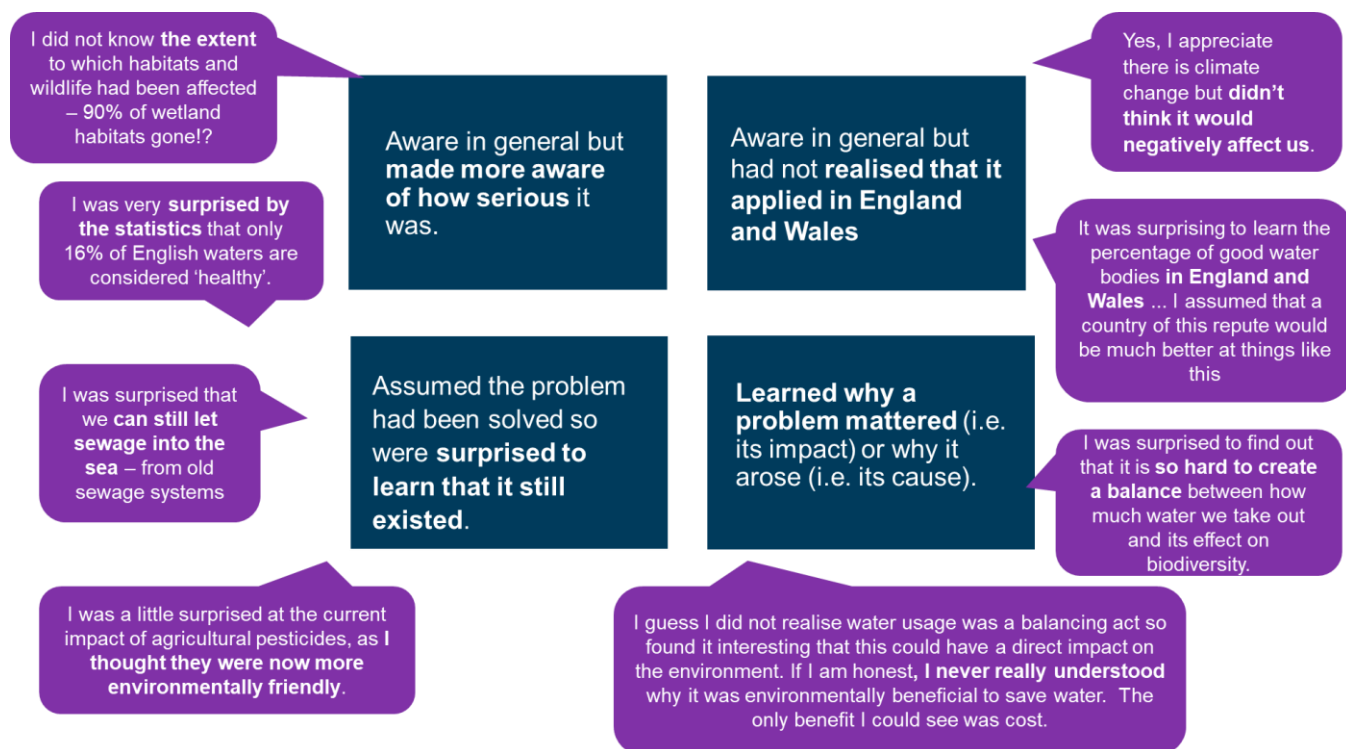
Figure 4 - Categorisation of participants' learning

3.5 Concerns about the water environment. More informed views

When asked which water environment-related problems were of most concern after receiving the information described above, pollution elicited by far the most concern. Climate change, biodiversity loss, and water shortages were also widely mentioned.

At this stage there was no clear pattern to who worried about which issue. For instance, climate change was a major concern across ages, socio-economic groups, and gender. However, different priorities did become apparent later in the forum when discussing on which issues water companies should exceed basic compliance.

Several factors affected participants' level of concern about water environment-related problems. They relate to how quickly problems might emerge, how easy they will be to reverse, how widely they might spread, and what actions are and could be taken.

- **Perceived inaction -** Problems that were longstanding with little apparent action or improvement, such as plastic pollution, made participants feel frustrated, worried and

hopeless. Likewise problems that seemed very difficult to act on, such as climate change, were a major concern.

> I am most concerned about the impact of global warming. It seems really difficult to combat, as the cause of it is vast and wide and deeply rooted in our daily lives. (Male, future customer, England, 25-34, C2, African)

> One of the things I am concerned about is how [plastic pollution] is going to be addressed - this issue has been ongoing for years but still seems to be a problem. (Female, future customer, England, 25-34, C1, Indian)

> The greatest concern would be having insufficient water but I am sure that the UK could solve this - even if it involved running a large pipe from Scotland! (Male, current customer, Wales, 35-54, B, white British)

- **Urgency -** Problems perceived as a current or imminent threat were particularly worrying. However, longer term problems were also a concern, as they would impact future generations.

> I am most concerned about climate change and global warming as it's a serious issue and if we don't act now, it's going to cause more damage to the environment. (Female, current customer, Wales, 35-54, A, Indian)

> For me the biggest single issue I worry about is climate change and it seems to me we are now at a point where the world has to come together and do something about it. (Male, current customer, England, 35-54, B, white British)

- **Fragility and reversibility -** Some problems were seen as easy to exacerbate and/or difficult to reverse e.g. plastic pollution is difficult to deal with because it does not biodegrade; extinction and loss of marine life is irreparable.

> Even though I believe plastic is a serious problem, the amount of plastic pollution will take decades, if not centuries to properly fix, whereas pollutants from things like agriculture is something which has a very rapid effect on biodiversity and will probably cause more harmful and more long-lasting effects if not fixed soon. (Male, future customer, England, 25-34, D, Mixed Ethnicity - White and Asian)

- **Knock-on/snowball effects -** Several problems were of major concern because of their potential wider impact and ramifications. For instance, participants made the links between plastic pollution resulting in biodiversity loss; and climate change leading to water shortages and flooding during extreme weather events among other problems.

> I am concerned about plastic pollution, due to plastic not been degradable, so many of our products are wrapped in plastic, litter left on beaches and riverbanks, the impact this has on marine life, where plastic are been ingested, they get tangled and are suffocated, we lose hundreds of marine species, many die of starvation due to their stomachs been filled with plastic. (Female, current customer, England, 55-74, D, any other mixed background)

> I think the increased demand for water, along with climate change implications concerned me the greatest. This is because we rely so much on fresh water from our reservoirs, lakes, rivers etc and the predicted climate change will make this supply less reliable. (Female, current customer, Wales, 55-74, C1, white British)

Conversely a few issues were a concern because they were seen as indicators of wider or more serious problems e.g., biodiversity loss was seen an indicator of pollution and water toxicity, and flooding as an indicator of climate change.

> I am concerned about the decline of biodiversity of the waterways because this means that the water is becoming more toxic. (Female, future customer, England, 18-24, C2, any other background)

- **Uncertainty -** Although not widely mentioned, there is something inherently frightening about uncertainty, for instance not knowing how bad a problem could get.

> The thing I am most concerned with is the impact global warming. I do feel that we haven't seen the full effects of it yet and that we could have events that could impact us more, this could be flooding or a number of other things. (Male, future customer, England, 25-34, B, white British)

> I am particularly concerned about how much effect water pollution is having on our environments. The things we do unknowingly continue to put into the water bodies and ultimately ourselves. (Male, future customer, England, 18-24, C1, African)

Level of concern was also affected by what types of impacts were expected and how serious they were, in particular whether they would impact mainly on people, wildlife, or the environment. Participants sometimes recognised the interconnections between these impacts. Nevertheless, certain impacts tended to come to the fore with certain environmental problems, and individuals prioritised the impacts differently.

- **Impacts on them personally or society in general -** Impacts on society were a particular concern when thinking about water shortages, flooding and sewer blockages. Water environment-related problems could affect leisure, social harmony, health, and even survival. As elsewhere, participants considered future generations as well as society now. Water shortages, which potentially impact on survival, elicited more concern than flooding, which could be devastating and disruptive, but was not seen as life-and-death. Note the water shortages discussed at this stage (with life and death consequences) bore little relation to water shortages discussed when talking about their personal experiences (where little effect was actually felt).

> Ultimately running out of water, no water and there would be no life. (Female, current customer, England, 35-54, C1, white British)

> I am most concerned about the shortage of water becoming a serious problem in years to come. As it is probably the most important commodity to us as humans, a shortage could lead to serious conflicts over water distribution in the future. (Male, future customer, England, 18-24, C2, white British)

> Plastic pollution & sewer management as it effects my local coastline are my key concerns. (Female, current customer, England, 35-54, E, white British)

Echoing this finding, the Environment Agency's Public Dialogue on Significant Water Management Issues[15] highlighted that **personal fears, experiences and interests** were important in determining the issues that people prioritised.

- **Impacts on the environment -** When talking about the environmental impact, participants' emphases differed. Some participants talked about a strong emotional connection to animals and wildlife. Wildlife suffering was mentioned particularly when talking about the impacts of plastic pollution.

> The single thing that really concerns me is the plastics found in the waters as plastics don't degrade, which affects the animals. I have a passion for animal welfare, and more respect is needed for their environment. Watching programmes like Blue Planet educates myself and its upsetting to see sea animals suffocating with plastics. (Female, current customer, England, 35-54, B, Chinese)

However, participants more often talked about their wish to care for the planet, ecosystems, habitats etc. They saw them as entities worth protecting for their own sake, not just for how they would support society.

> My single thing I am most concerned about is the loss of natural wet habitats and the further extinction of animals that inhabit these areas as this is completely irreversible. (Female, current customer, Wales, 18-24, C1, white British)

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[15]https://www.gov.uk/government/publications/public-dialogue-on-significant-water-management-issues

4. Expectations of who should play a role in water environment management

Who should play a role?

Participants tended to have very low levels of awareness of who has responsibility for managing the water environment. When asked for their views on who <u>should</u> play a role in addressing issues, the broad consensus was that it was a collective responsibility with multiple actors needing to play their part.

- The response of governments was felt to be crucial in terms of leadership and setting an overarching strategy, as well as in terms of regulation and enforcement.
- The majority of participants felt that water companies playing an active role was entirely appropriate - they have a vested interest; they have the means, resources and expertise and a direct relationship with consumers, so can influence behaviour. However, whilst this was prior to any cost discussions, many participants also flagged the fact that they are commercial organisations and so have competing priorities and so any activity will require close monitoring and regulation.
- Those who negatively impact on the water environment (for example farmers, developers as well as individual consumers) were also felt to have a significant responsibility; in addition to individual consumers. Action by the latter was felt to be constrained by consumers not knowing what to do and perceptions that individual actions do not make much difference.
- Participants spontaneously discussed how action to tackle water environment issues might be stimulated. Most focussed on a 'carrot and stick' approach i.e., stringent fines when rules are broken and incentives to encourage positive behaviour change. The call for fines and incentives applied at individual, organisational and community levels, for example fines for individuals who litter as well as fines for companies or farmers who pollute waterways.

4.1 Who should play a role? Spontaneous views

Prior to being provided with information on the management of the water environment, participants were asked for their spontaneous views, as follows:

- What do you know about what is being done to tackle the issues faced by the water environment?
- What role do you (or other members of the public) play?
- Who else should play a role? What should they be doing?

Participants recognised their own low levels of awareness of what is being done to tackle the issues faced by the water environment. This was largely true across the board, although a small number of current customers and those from higher socio-economic backgrounds had slightly higher levels of knowledge.

> Don't really know what is being done, I do know it's a concern and presume they are taking measures, but I can't really say what. (Male, current, customer, England, 35-54, D, Indian)

> I don't know anything about what's being done to tackle the water environment issue because I didn't really know how big of a problem it was. (Female, future customer, England, 18-24, D, White British)

There were a handful of mentions of The Environment Agency and Natural Resources Wales working with local authorities or water companies on flood management; largely by those who had witnessed work in their locality.

> I appreciate that local authorities and the Environmental Agency [sic] are taking [a role] in safeguarding water ways. As a particular example, the EA take a proactive role before allowing any planning applications to be approved. This involves not only safeguarding the quality of water and protecting people from flooding, but also conserving the natural habitat of flora and wildlife. (Male, current customer, England, 55-74, B, White British)

> I live in Wales so know that Natural Resources Wales and Dŵr Cymru work together to tackle issues faced by the water environment. Last year there was heavy flooding in my local area and a number of people's homes were left uninhabitable - Since then the local council and NRW have funded work on culverts around the river to try and minimise the risk of future flooding. (Female, current customer, Wales, 25-34, C1, White British)

There were a small number of mentions of fines for breaches, for example one participant mentioned water companies being fined for polluting waterways.

Most actions that participants were spontaneously aware of related to tackling plastic and litter pollution, with mentions of the following:

- Legislation banning single use plastic bags/straws and microplastics.
- Manufacturers reformulating products/packaging to use less plastic.
- Innovation i.e., the development of a large net to capture plastic in the oceans.
- Local beach cleans.

There were also some limited mentions of businesses' advertising focussing on environmental issues (e.g., Ikea) and environmental campaigns by charities/lobby groups.

Collective responsibility

When asked for their views on who <u>should</u> play a role in addressing issues, the broad consensus was that it was a collective responsibility with multiple actors needing to play their part.

> Everyone has a role to play. The solution to the impending challenge is a collective effort. The government, regulatory agencies, organisations, the public all have a role to play, it is a joint effort. (Male, future customer, England, 18-24, C2, African)

> Absolutely everyone has a role to play and it's only with everyone doing their bit that the issues will really be tackled. (Female, current customer, England, 35-54, C1, White British)

Some responses were framed in terms of a global response rather than focusing on England and Wales, or even the UK. There were some mentions of foreign governments setting the tone in terms of action (for example, Donald Trump leaving the Paris climate agreement) and also some questioning whether EU standards (for example in relation to bathing standards) would remain, now that the UK has left the EU.

The following key players were mentioned:

- **Government at all levels** playing a role in terms of:
  - Providing leadership in this area and ensuring effective messaging.
  - Introducing appropriate legislation and enforcing standards.
  - Action at a local level, for example ensuring more focus on recycling.
- **Individuals** – There was a widespread belief that individuals have a responsibility to help tackle the issues. This was largely through changing their own behaviours. Messages relating to using less water (when cleaning teeth in particular); using less single-use plastic; and taking care over the disposal of fat, oils and grease were mentioned by some participants.
  - However, the distinction was made between knowing what they should do and actually changing their behaviour, with some mention of day-to-day pressures impinging on peoples' ability and willingness to recall these messages and to act in accordance.

  > I see myself as a fairly intelligent woman, but this exercise has really opened my eyes about a topic which I did not know enough about. The real hard part is knowing and then doing. Can I honestly say since reading this I have turned the tap off when brushing my teeth? And this was when it was fresh in my mind. (Female, current customer, England, 35-54, C1, White British)

  - The point was also made that not everyone would care enough to take any action.

- **Large companies** – participants felt that that large companies are making money as a result of their activities and, if they are depleting natural resources or adversely impacting on the environment, they need both to consider minimising their water use and also 'put something back'.
  - However, there was little explicit mention of **water companies' roles** and responsibilities in this context. The only mentions were in relation to making water meters compulsory and providing incentives for customers to change behaviours (for example to introduce water butts). However, these examples were linked to Government action, rather than stemming from water companies themselves; only two participants amongst 62 mentioned water companies promoting pro-environmental behaviours and only one mentioned water companies investing more generally.

- Participants in Wales were slightly more likely to be aware of water companies' roles in respect of the water environment than those from England.

- **Farmers** proactively tackling issues was not top of mind – there were few mentions of farmers generally and most of these related to ensuring that they are fined for any pollution stemming from agricultural practices.

Levers for galvanising action

Participants spontaneously discussed how action to tackle water environment issues might be stimulated. Most focussed on a 'carrot and stick' approach i.e., stringent fines when rules are broken and incentives to encourage positive behaviour change. This applied at individual, organisational and community levels, for example:

- At an individual level, fines for littering were suggested as well as initiatives to support water consumers to use less water.
- Participants felt strongly that fines for companies or farmers who pollute waterways should be applied:

  Bigger fines and monitoring for farmers and companies if they discharge chemicals or let chemicals run into water system. (Female, current customer, Wales, 55-74, E, White British)

- There were no spontaneous mentions of farmers being incentivised, but one participant was prompted by the question to do further research on the agriculture transition period and liked the current approach of providing farmers with subsidies to improve the environment:

  This will help the water environment because farmers will be able to restore and create habitats for nature recovery. This also introduces an incentive for farmers to use minimal pesticides, as they will receive more support from the state. This will help combat agricultural runoff and reduce algae bloom in natural water resources. (Male, future customer, England, 18-24, E, Mixed background)

- At a community level, government incentives for clean towns or cities were suggested.

Some participants went further and suggested that action to reduce harm to the environment or actively to improve it should be compulsory for businesses; either through increased taxes or levies or by compelling them to reduce water usage.

  However, a lot of big corporations should be relaying these messages considerably and possible have a mandatory budget regulated by the government to tackle these issues. This could be a percentage of the profits for instance. I think the lion's share of the responsibility should go to multi-national companies who have the budget to tackles these issues. (Male, current customer, England, 25-34, B, Indian)

  Working in a restaurant, there are never mentions about how much water we use as a business from local government or from EHO/ Environmental agencies. It's never on their priority list. I think everyone needs to play a part, but this would need

to be a MUST not a 'do if you please'. (Male, future customer, England, 18-24, B, White British)

Educating consumers was a recurrent theme with participants calling for more information about the issues through a national campaign and in schools.

As members of the public, we need to be more conscious of how we use and affect water through our actions. I think a more widespread information campaign is needed to make us aware, or to keep reminding us, of our responsibilities and what we can do to help. (Male, current customer, England, 55-74, B, White British)

More broadly, I'd like to see water companies being much more active - or raise the profile of their current conservation/protection/environmental improvement activities. (Female, current customer, England, 35-54, E, White British)

There was some debate as to whether the **pandemic would be a catalyst for change** in terms of a focus on environmental issues, an enhanced trust in science and a renewed belief in how individual action can change society.

As with so many environmental issues, especially global warming, investment in the future is the answer. Given the need to stimulate the economy post-COVID, now would be a good time to do this. (Male, current customer, England, 55-74, E, White British)

Only once we are aware can we choose to make a positive or negative impact. The continual media coverage of the current COVID 19 pandemic has shown how leadership from unexpected sources [Captain Tom & others] has led to remarkable outcomes. The electronic and social media can play a vital role in helping more people want to participate in a positive way to environment concerns. (Female, current customer, England, 75+, D, White British)

4.2   Who should play a role? More informed views

Following some exploration of these spontaneous views, participants were then provided with information on the different organisations and individuals which have an impact on and can act to improve rivers, lakes, streams and the sea. They were asked to watch the following animation: https://vimeo.com/508876518/d8510ad65d.

Overall responsibility

Participants were then asked who they thought should take most responsibility for issues affecting the water environment. There was a broad recognition that such complex and interlinked problems need a **collective response**. The government response was felt to be crucial in terms of leadership and setting an overarching strategy, as well as in terms of regulation and enforcement. It was felt that the government needs to take the lead in terms of the big issues, for example climate change.

Overall this is so important that the national government must be front and centre. (Male, current customer, England, 75+, B, White British)

The pivotal role played by water companies was noted; although many participants also flagged the fact that they are commercial organisations and so have competing priorities. Those who negatively impact on the water environment (for example farmers, developers as well as individual consumers) were also felt to have a significant responsibility.

> Overall responsibility is the duty of Government in setting out the overall framework, but administration of the policy is devolved to the appropriate regulator, and it is the water companies themselves who bear the final responsibility for implementing the policies, alongside agriculture and industry. However, the responsibility does not end with the water companies. They cannot control what farmers spread on their fields, nor what pollution is produced by industry, nor can they prevent flooding of housing wilfully built on a flood plain. Responsibility here goes back to Government to ensure that such things are suitably defined, regulated and enforced…As always, there is also a duty resting on the individual to behave in a responsible way. (Male, current customer, England, 75+, E, White British)

The role of water companies

When asked spontaneously about responsibility for issues facing the water environment, few participants had mentioned water companies. Following the provision of information about water companies' regulatory responsibilities and examples of what water companies are already doing in this field, views changed.

The vast majority felt it to be completely appropriate for water companies to play a significant role[16], as long as they are operating under a framework set by government and are fully accountable.

> I personally think it's a collective responsibility however as a water company, it should be formed as part of their mission strategy to help the environment and regulators need to play a part in regularly reviewing that companies are doing what they say. The government also need to take responsibility and deliver initiatives and projects which can help further support water companies in what they are trying to achieve. (Female, future customer, England, 25-34, C1, Indian)

Why do water companies have a unique role?
Participants gave the following reasons for believing that water companies should be responsible for tackling environmental issues:

* Their business is **benefitting** from the natural environment – they are making money from it and have a vested interest in securing future supplies to ensure that they have a sustainable business. Some went further, saying water companies have a moral responsibility, as well as a business driver, to take action.

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[16] It should be noted that at this stage there was no input of information about a likely impact on water customers' bills.

> All have areas of responsibilities, starting from the government laying down the legislation, then the regulators to enforce and regulate the water companies. I feel the water companies have a moral responsibility looking after the rivers, lakes, protecting the plant and animal life, as well as delivering a service to water consumers like ourselves. (Female, current customer, England, 35-54, B, Chinese)

- Water companies have the **means, agency and expertise** to make a difference.

> I think water companies should take the most responsibility as they have the most control over our water supply and water environments. Water companies should play a key role in protecting our water environments and should also promote this to educate individual water customers on how to play their part too. (Male, current customer, Wales, 25-34, C1, White British)

> I expect water companies to have a big role because they are the ones supplying the water for use, so they should have all the knowledge needed to properly look after the environment. (Female, future customer, England, 18-24, D, White British)

- The point was also made that water companies have a direct relationship with their customers and so are better able to **influence consumer behaviour** than other players who are more removed from end consumers.

> I think everyone has a responsibility but overseeing this should be the water companies as the go-between, between government, regulator and consumer. I expect water companies to take an active role educating and incentivising and punishing behaviour. (Male, current customer, Wales, 25-34, C2, White British)

A minority of participants expressed reservations about water companies playing a role in tackling issues affecting the water environment. This was largely because of a negative experience i.e., the water company in their area being perceived as failing, resulting in a lack of faith in the company being able to deliver services beyond the basics. These issues, which tended to be related to poor water quality or an inability to deal with leaks, were highlighted by a small number of current customers.

> The water companies are OK at providing water and removing wastewater but are sadly lacking when it comes to dealing with water leaks, I feel they cannot be trusted with handling these issues as they take far too long in acting on problems, there was a major water leak on a main road near my house and it took weeks for them to solve the problem and to stop thousands of gallons of water being wasted during that time. (Female, current customer, England, 55-74, E, White British)

What should water companies be doing?

A small number of participants felt that water companies should focus on the basics i.e., ensuring clean water and an effective sewage system and tackling leakage rather than going beyond this to actively enhance water environments.

> [The role should be] to maintain the water supply systems (without using up too much water in droughts) and maintain the sewage systems and avoid environmental contamination. (Male, future customer, England, 18-24, C1, White British)

However, most saw the issues as being interwoven – with the provision of clean water being linked to tackling pollution and the provision of services being linked to the future security of supply. Many participants were happy with water companies having a fairly wide remit, as a result.

However, some issues were perceived to fall outside their remit, particularly reducing plastics in the environment where responsibility was thought to lie with manufacturers and consumers; and large-scale issues that extend far outside one company's area of operation, such as climate change and large-scale loss of species.

> The English and Welsh water companies are the bodies who are ultimately responsible for reducing, mitigating and preventing environmental failures in their respective areas of control. However, there is little they can do with international issues such as global warming or the decline of plant and animal life on a worldwide basis - short of publicising the problems and issues involved. (Male, current customer, England, 55-74, B, White British)

Distrust does not change perceptions of responsibility

Many participants raised the point that water companies are private entities and as such are ultimately likely to be focussed on profit and stakeholder returns. In the context of water company responsibilities towards the environment they, therefore, indicated that they did not necessarily have high levels of trust in the companies in the water sector (or, indeed, any large businesses).

> I don't trust water companies, or any companies. The most important thing to them is the bottom line. It overtakes any environmental considerations. (Male, current customer, Wales, 55-74, E, White British)

In spite of Dŵr Cymru's status as a not-for-profit organisation, there was no more trust in water companies among participants in Wales than those in England. When asked if they trust water companies, on the whole participants in Wales did not seem to distinguish between their water company, water companies in general, and large companies as a whole.

However, the prevalent view was that this lack of trust did not mean that water companies should not take responsibility for environmental maintenance or improvement; instead, there was a call for stringent regulation to ensure that water companies are held accountable for any actions in this field. A common theme throughout discussions was the need for checks and balances in the system; a call for reassurance about monitoring of company actions; and a focus on robust action being taken to punish companies for non-compliance.

> I personally believe it's down to the water companies themselves that should be taking responsibility for all of these issues, as they are the ones that we pay our water bills to and make all the profits. Having said that I don't necessarily trust them to do this, as I feel sometimes all they are interested in, is making profits for their shareholders, so I definitely think the water regulator needs to be very much

involved to see exactly what is going on (Male, current customer, England, 55-74, B, White British)

There were also calls for greater transparency in terms of environmental challenges and the response to these. This, it was felt, would build trust amongst consumers and ensure that there is greater acceptance of water company action in this arena.

- A small number of participants spontaneously commented that finding out more about what water companies are currently doing through the information provided during the online forum had resulted in them having more faith in water companies to act responsibly.
- The information which reassured them was in relation to the statutory plans that water companies must produce and some of the examples of specific actions taken by water companies to enhance the environment.

I do trust them but with some reservations, as anyone should - knowing human nature. People get greedy and like to push limits and see what their able to get away with, this can be applied on a micro level to the individual or on a macro scale to large organisations which prioritise profits over ethics. As long as everyone is transparent and regulations are put in place fairly, as well as punishment for breaking said regulations, then I believe our future is optimistic. (Male, future customer, England, 25-34, C2, African)

Costs of environmental action not 'top of mind'

Whilst the costs of water company involvement in protecting and enhancing the environment were not explicitly mentioned at this stage, a minority of participants raised this as a factor in their thinking. These participants accepted that consumers may have to bear some of the costs of action but caveated this with the point that there would need to be clarity about what is achieved for the additional money spent.

Water companies must plan and budget for maintaining and improving infra-structure. It is evidently far more costly to provide facilities which can cope with a once in 500 years event compared to a "normal" or once in 10 yrs event. If the public, through government, wants such a level of over-capacity as a safety net, then it must be prepared to pay for it by higher charges. (Male, current customer, England, 75+, E, White British)

As consumers we also need to shoulder some responsibility by paying for the service if that includes decent environmental considerations (I pay something like £1 a day for my water currently - would pay double if needed - I just need to be educated on what that money will do). (Male, current customer, England, 35-54, B, Other White background)

4.3   Individual responsibility

Participants were also asked to consider how they felt about taking action for the water environment themselves; namely what kind of impact they thought they could have and whether it was fair to expect individual consumers to take such action.

There was a broad consensus that the public has a role to play in looking after the water environment, particularly in addressing pollution and water resources. Some saw this as a 'duty' or moral obligation to act in that individual consumers are contributing to and will be adversely affected by the issues, so should 'do their bit'. Whilst there were few apparent differences in opinions between current and future customers, it was in fact older participants who were more likely to mention the need to act now and think about future generations.

> 100% yes, we must! A big impact if everyone helps. Absolutely fair, we all need water for human survival so anyone would be crazy not to take action, to protect human life. There is so much as individuals we can do. (Female, current customer, England, 35-54, C1, White British)

There were frequent mentions of the actions that individuals could (and do) take, including:

- **Day to day actions** - limiting water use, proper disposal of wet wipes, fats, oils and grease; recycling; using less single use plastic.
- **Reporting problems** - for example reporting leaks.
- **Being proactive** - taking practical steps (volunteering) or lobbying/joining environmental causes.

There was a sense that, whilst individuals could only take small steps which would make marginal difference, the end result would be bigger than the sum of the parts.

> I remember a film called A Bug's Life; a single ant could not fight the locusts but when joined together in force had a great impact on their situation so - as a certain supermarket has said every little helps. Every individual's action, however small but positive, can help and aggregated together can have an impact. (Female, current customer, Wales, 55-74, D, White British)

However, a number of barriers to individuals taking responsibility were highlighted as well as some prevalent concerns, including:

- Consumers **not knowing what action to take** per se or what additional action they could take other than what they were already doing.

> I wouldn't really know where to start if I were to take action myself - this is where the government needs to play a part and communicate what needs to be done, and not leave it solely to the general public to resolve. If people are given direction and the right guidance, then everyone can have an impact, whether it's small or large. (Female, future customer, England, 25-34, C1, Indian)

- The fact that **not all consumers will take responsibility** and change behaviours.
- Some concerns were expressed about the **cultural change required** for individual action to make a difference and whether, given that societal norms take years to evolve, any changes in behaviour would be too little, too late.

We can all make little changes to what we do to assist this. But you can't expect a massive change in culture this takes time to evolve and if we act now, we would see the effect in 20-30 years' time. Is this too late? (Male, current customer, England, 35-54, B, White British)

- There was some **concern about whether individual consumers' actions will make a difference**. A number of participants gave the example of recycling where it was pointed out that consumers could conscientiously recycle but then have no control over whether recycling actually takes place.

  The public cannot do much without the help of environmental organisations or the water companies. I don't drop plastic, on purpose, and I pick it up when I can. But if it doesn't get recycled, what I do is a drop in the ocean (literally). (Female, current customer, Wales, 55-74, B, White British)

There was a widespread consensus that individual actions can only go so far and that there needs to be a **collective response to the issue**, with clear leadership from government. The 'bigger ticket' items, such as climate change, in particular need government action.

- Linked to this was the need to see **government taking a lead** and all key players (particularly large business) **leading by example**. The responsibility for individual action was only perceived to be fair and reasonable if others are also playing their part.

  I think it's fair to ask people to abide by certain rules and regulations and take achievable actions but it's up to the government and regulators to do the heavy lifting. It does depend on the environmental issue, there's some things that are outside of the scope of the general public. (Male, future customer, Wales, 18-24, C1, Pakistani)

  The government should set clear legislation and enforce it, where possible. The organisations and individuals further down the chain should ensure it is upheld. None of them can achieve their goals without the government leading the charge. Water companies should implement their objectives, engage with the community at large to preserve water resources and maintain and repair water pipes and create environments for animals to thrive. (Female, current customer, England, 35-54, C2, African)

- A minority of participants expressed strongly held views about the **onus for action being on government and large business**.

  I will try to protect the water environment by using less water and disposing of waste properly, but I think it has no impact when compared to the amount of destruction large companies have done. It's not fair that civilians are guilt tripped into saving water, it makes many people believe we are the problem when it's actually the companies' faults. I cannot think of a single environmental issue that isn't caused by huge companies. (Female, future customer, England, 18-24, C1, White British)

I'm not the one pouring waste into the ocean, or plastic or spraying the earth with chemicals that's killing nature as we know it. I recycle everything as I'm told …and don't litter, I am economic with my electric and heating and buy fresh unpackaged vegetables, so I have less waste. But where that waste then goes from being picked up I have no control over so no it's not down to the people it's down to the government's inability to make waste dumping and the burning of rubbish tips illegal. Most of these huge factories have sewage pipes leading straight into the ocean but it's my problem to solve it? I don't think so. (Male, future customer, Wales, 25-34, C1, White British)

It was suggested that the public needs support, mainly information and education but also incentives to encourage behaviour change. Examples given were the provision of water butts or water conserving devices such as hippo bags, as well as a financial incentive to install a water meter. Central government, local councils and water companies seemed well-placed to provide this support.

I think it is fair to ask people to make changes and incentivise them to do so - however the really big changes need to come from industry and government and has to be on the international as well as regional / country level. Some issues are more emotive for sure - it just depends if it's something people can relate to like a dirty beach or river or something more seemingly obscure like a melting ice cap or glacier - some things change more slowly or are not part of people's everyday lives so get overlooked or people cannot easily relate. Education around these things is key but that can only go so far - money unfortunately needs to be at the heart of it - make incentives and taxation core to adoption. (Male, current customer, England, 35-54, B, Any other White background)

For some, their sense of responsibility was heightened by taking part in the research, with a number of participants indicating that they would take more of an active interest in the environment and volunteer to help resolve local issues.

I have in the past volunteered to clean up a waterway and will, as a result of taking part in this survey and my own community's need (Margate beach is notorious for dog fouling), volunteer locally. (Female, current customer, England, 35-54, C2, African)

5. How far should water companies go?

> ## Section summary
>
> Participants were provided with information about the actions that water companies can take on the environment in the form of an animation, which provided examples and described three possible levels of action[17] that water companies might undertake in relation to different issues.
>
> - For all of the stated issues, the desire expressed by the majority of participants was for water companies to go 'beyond the basics' of meeting the minimum legal requirements. This was particularly strongly expressed in relation to both the decline or extinction of plant and animal life and global warming / climate change, where half or (in the case of extinction of plant or animal life) over half, wanted water companies to go to the highest possible level.
> - Within this, there were various 'schools of thought' in terms of whether action was required at the highest level across all issues or whether certain issues should be a greater focus for water companies' actions.
> - Having discussed the degree to which the environment should be a priority for water companies, participants were asked to prioritise a list of six other responsibilities[18] that water companies have to balance (alongside the environmental priorities they had been talking about). 'Managing the environmental impact of what they do' was the third priority when averaged across all responses. This statement was ranked only below statements relating to the provision of clean water and treating used water. It was placed higher than statements relating to affordability and accessibility of services.
> - However, that is not to say that the latter are unimportant - many participants said they had found the process difficult and emphasised that everything listed is important to some degree. Some felt that helping people on low incomes was something for government to consider rather than water companies. Furthermore, at the start of the process few of the participants were aware of water companies' role in respect of the environment or of the action that they already take. The online group participants stated that they would not have selected the environmental statements prior to the research as they simply would not have associated them with water companies – when statements relating to cost and affordability are more top of mind.

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[17] Basic (Level 1) Investing to the minimum level; Beyond the basic (Level 2) Investing more for the benefit of customers; Going further (Level 3) Investing more for the whole of society, as shown in more detail at Appendix 10.3.

[18] The full list of responsibilities was: 1. Providing clean and reliable drinking water to peoples' taps; 2. Removing & treating water that has been used before sending it back to rivers; 3. Managing the environmental impact of what they do; 4. Providing schemes to lower water bills to help people on low incomes; 5. Helping customers access support in ways to suit them e.g. not online / language needs; 6. Planning & investing to keep services reliable, despite climate change/ population growth
7. Keeping bills as low as possible. The order was randomised for participants.

5.1   How far should water companies go?

As shown in Section 4.1, pre-existing knowledge of water companies' roles and actions on environmental issues was limited. Most participants had either no sense that water companies acted on these matters, or only a very vague sense that (as is the case for all big companies these days) water companies would be likely to be taking some action, but with little sense of what their responsibilities or level of activity might be.

When asked individually at the very start of the research to indicate whether water companies are doing too much, about the right amount or not enough to protect the environment, almost half of participants (29 out of 62) simply said they did not know. This lack of knowledge was confirmed by comments from participants in the live online discussion groups:

> I think if I'd sat down and thought about it, I would have probably thought that there must be an environmental priority there somewhere …. but that's probably just because most organisations and companies now do have an environmental impact or an environmental awareness element, don't they? But how that would have looked, I wouldn't have known. (Online group participant, current customer, Wales)

Participants were provided with information about the actions that water companies can take on the environment in the form of an animation https://vimeo.com/512206887/e196d7cafe. The animation provided examples and described three possible levels of action that water companies might undertake, this was then summarised for participants and is shown in Appendix 10.3.

Having watched the animation, participants were asked to allocate a range of environmental problems to the level of action they would like water companies to take (see Figure 5). For all of the stated issues, the desire expressed by the majority of participants was for water companies to go 'beyond the basics' of meeting the minimum legal requirements.

This was particularly strongly expressed in relation to both the decline or extinction of plant and animal life and global warming / climate change, where half or (in the case of extinction of plant or animal life) over half, wanted water companies to go to the highest possible level.
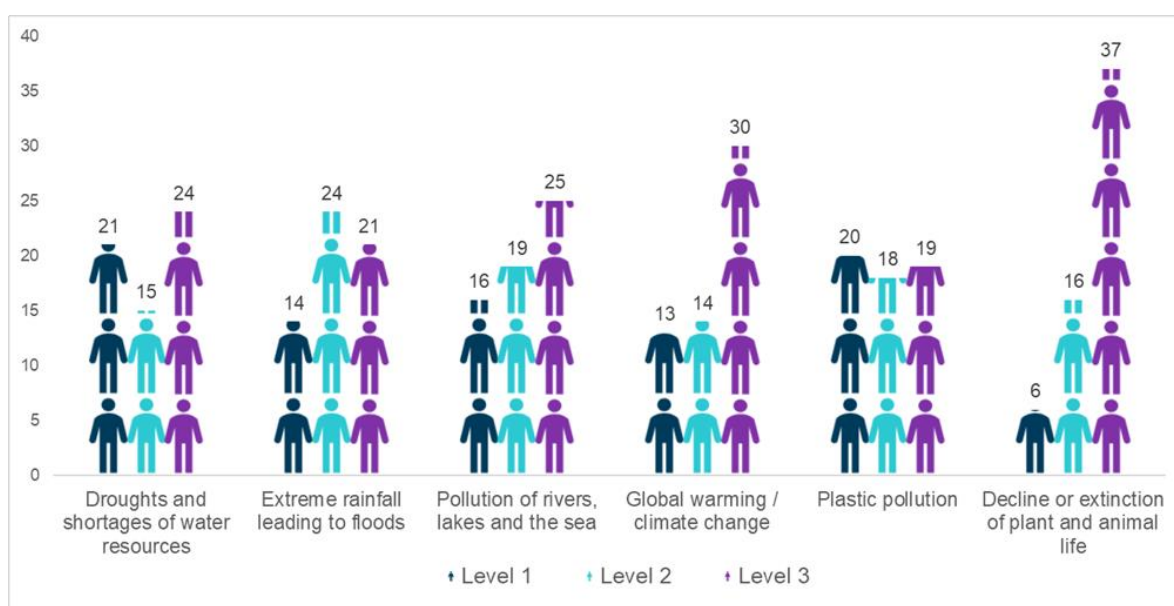
Figure 5 - How far should water companies go?

Participants in the online groups were asked about the call for companies to go to the highest possible level in terms of action in relation to the decline or extinction of plant and animal life. They were told that water companies have particular duties in relation to action and reporting on biodiversity in Wales, something which is not the case in England. Participants broadly felt that the duty in England should be the same as in Wales. They liked the concept of the duty, in principle but they were also aware (through the provision of information) of differences in river water quality in England and Wales. Participants tended then automatically to assume that the different regulatory requirements placed on water companies may be partly responsible for the differences seen in river water quality between the two countries.

> I think they should because clearly monitoring them more closely has caused a big improvement in between England and Wales, and I think if they're monitored more they'd be more likely to spend the money and budget a lot better rather than pouring money just into one aspect. (Online group participant, future customer, England)

5.2 Rationale for responses

When asked to explain the reasons why they wished to see companies act at the levels described, there was a perception from some participants that the Basic Level (Level 1) was simply too low to be acceptable.

> I was very surprised at what was expected in level one - Basic. At a minimum I would expect level two behaviour and thought that is what was happening. Surely at the least level two would help improve or maintain the environment? (Female, current customer, Wales, 55-74, D, White British)

There were also some discernible patterns in terms of participants' views. Broadly speaking, participants fell into five schools of thought, as shown in Figure 6. The size of each square roughly indicates the relative size of each group amongst participants.

A sizeable minority of participants expressed the view that water companies should push hard (i.e., aspire to Level 3) across all the stated issues, feeling that the issues are inherently interlinked, as well as being urgent to address and should, therefore, be given equal and maximum emphasis by all water companies. This group was a broad mix of participants by demographics.

> I think water companies should be championing investing in the environment to address all issues described. All of the issues affect the human and animal populations as well as plants, and we all need each other to survive. Every issue here could be detrimental alone, let alone alongside others. I think water companies should invest in all issues, as solving one will have a domino effect on improving others. (Female, 18-24, future customer, England, C1, White British)

> All above mentioned issues are important and are inextricably linked to one another. It is important that the water companies try to tackle all of the issues that are raised here. (Female, current customer, 35-54, England, C1, White British)
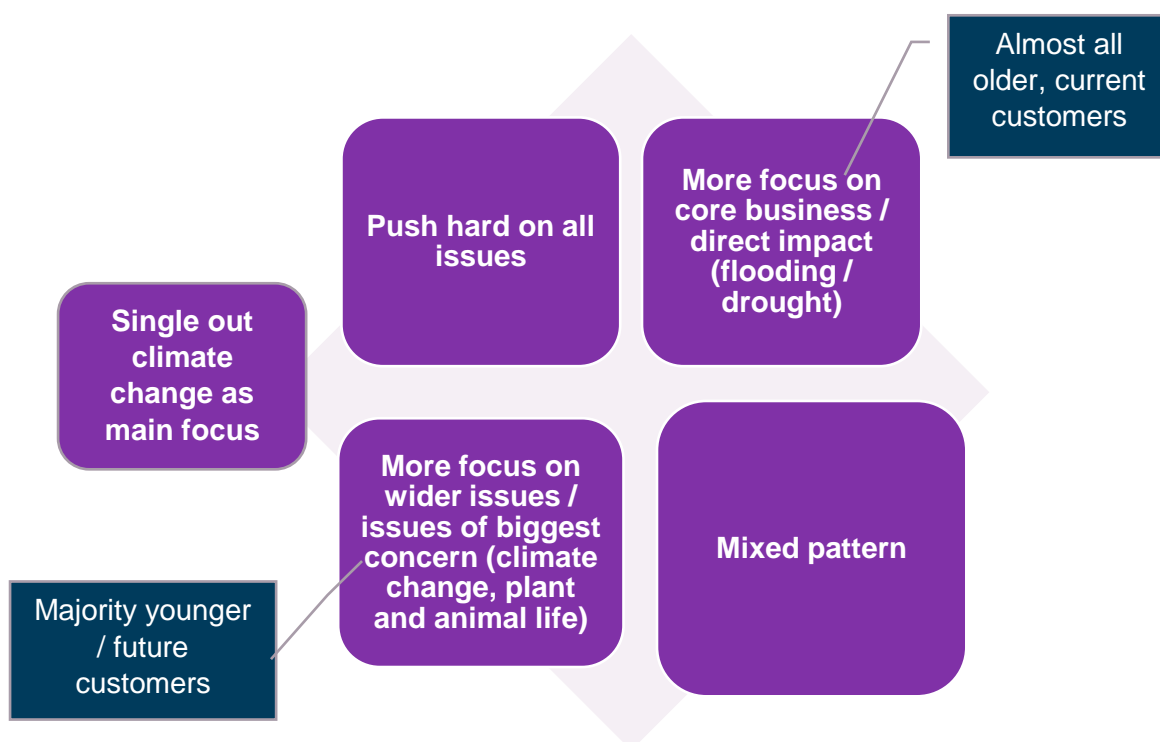

Figure 6 - Schools of thought on how far companies should go

Another significant 'school of thought' was that companies' **strongest focus should be on the combined issues of global warming / climate change; and the decline or extinction of plant and animal life**. This group wanted companies to push hardest on these issues precisely because they perceived them to be the biggest, the hardest to tackle and of the greatest concern. There was some recognition that these are not the prime areas of responsibility for water companies, but nevertheless since these were seen as the most pressing issues, the desire remained for companies to go as far as they

possibly can. Those under the age of 35 (and therefore also future, rather than current customers) made up the majority of this school of thought.

> Although biodiversity is perhaps slightly outside of the remit of the aims of water companies, I think they should focus a lot of their efforts on this aspect, as it's something I feel very strongly about. (Male, 18-24 future customer, Wales, C1, Pakistani)

> [Climate change] is definitely the highest, we can't live in a world with melted ice caps and no way to fix this, it really just isn't a sustainable way to live on Earth and we should really push as much as we can for global warming to be at the forefront of the water companies' issues, and in the grand scheme of things the world's issues. Decline or extinction of plant and animal life - again this is something that really isn't reversible and it can have a huge impact on multiple ecosystems across the country which could just cause a cascading butterfly effect in the worst case scenario, this should be tackled by the water company in one of the more important fashions, because it isn't reversible it's best to fix the issue as quickly as possible. (Male, 18-24, future customer, England, D, White British)

This group tended to feel this strong emphasis was necessary for the sake of the planet and for future generations and they also pointed out that water itself is essential to human life and central to these bigger environmental concerns. There was a feeling that environmental problems have gone too far for maintenance of the status quo (the perceived Basic Level) to be acceptable, actions must be more ambitious. Likewise, the Basic level was perceived as being passive or reactive and participants wanted to see water companies being more dynamic and proactive, acting with a sense of urgency and going further to repair environmental damage that has already been done.

> Seeing as water is essential to life, and is central in the climate crisis, it would make absolute sense that water companies invest in the environment. The process of filtering and supplying water for people has highlighted many issues around how we source our water and how our waste damages our surroundings and the planet as a whole. For this reason, I would believe that water companies have a responsibility to make this process as sustainable as possible. (Male, future customer, England, 25-34, D, Mixed Ethnicity - White and Asian)

A smaller group of participants, more mixed in terms of their age profile, **singled out climate change** as the only issue where they would expect to see companies go to Level 3. This was seen by some as the foundation issue – one that, if tackled, will preserve water supplies for the future and ultimately improve many of the other issues mentioned.

> The highest level is about global warming and climate change. The water company should go further to ensure that our water is protected and preserved. (Female, current customer, 35-54, England   , C1, Chinese)

Conversely, a separate group of participants suggested **water companies should focus their strongest efforts on their core business** and suggested that the bigger / global environmental issues were much more of a collaborative responsibility. This group, who

were predominantly current (rather than future) customers and over the age of 35, tended to want water companies to aspire to Level 3 only in relation to flooding, drought and, in some cases, pollution of rivers, lakes and the sea.

> I was surprised that water companies are involved in such wide-ranging projects such as extinction on plant and animal life! I think that all agencies should be involved in saving us and the planet, not just the water companies. I expect water companies to combat droughts and shortages, extreme rainfall, pollution of lakes etc. (these should all be in level 3 on your chart) but global warming, plastic and extinction of plants and animals should not be the responsibility of the water companies alone. (Female, current customer, 75+, England, C1, White British)

> I don't see the main role of water companies to improve/invest in the environment beyond the water systems. Being universal is stretching it too far. (Female, current customer, 55-74,Wales, B, White British)

The largest minority of participants had a more mixed pattern of responses to the various issues. From all participants there was a strong sense that the issues are all interlinked and they, therefore, found it difficult to differentiate in terms of where the most effort should be placed. For example, participants pointed out that climate change might lead to flooding and drought, so increased effort on that might lead to better outcomes across the board. This group was, again, a broad mix of participants by demographics.

> Based on my knowledge of things and what I've learnt so far, I believe water companies need to go further to improve and invest in the environment. They need to go further than meeting standards, get proactively ahead of situations. … I believe they are all inter-connected to one another. The negative impact of handling one wrongly will, in the long run, spill over to affect the others. (Male, future customer, 25-34, England, C2, African)

In the live group discussions participants explicitly discussed why so many participants might have directed water companies towards Level 3 effort in addressing the decline or extinction of plant and animal life, since this might be seen as being beyond the direct remit of water companies. Three main reasons emerged from this discussion:

- **Immediacy** – it was felt that whilst some of the other issues were more removed or remote (e.g., drought or flooding) the value of nature in people's lives, every day, especially through COVID, is very current. This was felt to heighten people's desire to see water companies make their most strenuous efforts regarding the protection of nature. It was recognised that this immediacy to participants may have been further emphasised by taking part in the research, especially given that people had been asked to stop and think about the value of the water environment in their own lives.
- **Profile** – participants mentioned that there is much television news and documentary coverage of the decline of, in particular, of threats to marine animals; whilst some of the other issues received less attention (e.g., the possibility of drought, the extent of river pollution).
- **Emotion** – furthermore there is a degree of emotional attachment to the natural world and its need for protection that is not as strong for some of the other issues, this may

have led to the large number of participants seeking the highest level of effort to be directed at addressing the decline.

> I think you expect a high number because, I said that was like a passion of mine, seeing water life being extinct, and it's regularly on the local news as well. So, I'm aware of that, also I'm quite sensitive especially to animal life. (Online group participant, current customer, England)

5.3   Differences between water companies

Whilst the exercise sought participants' views about how far water companies in general should go, there was recognition from some participants that different water companies may need to have different standards and levels because of differing priorities and issues. In addition to differing needs and priorities some participants mentioned that water companies are currently performing at different levels, so some will need to 'get the basics right' before they become more ambitious.

> I am not sure about all of the level three activities - that may be dictated by individual (area?) situations (budgets?). After all each water area has its own individual needs and I think that this needs to be factored in. There is no 'blanket' answer to these problems and what may suit one area, may not suit another. (Female, current customer, Wales, 55-74, D, White British)

Some others, conversely, felt there should be uniformity of action – all reaching very high standards - and it should not be left as a decision for each individual company as to how far they want to address environmental issues.

The suggestion was also made by one participant that water companies, whilst having their own unique priorities, might be able to work collectively to achieve the desired outcomes for the environment more efficiently:

> I believe that water companies should try to achieve Level 3 in ALL areas, wherever possible, but this would depend upon many variables. Water companies are privatised and each will have their own set of plans, priorities and budgets. Some of these may be in accordance with other water companies and it could be possible for certain priorities to be actioned as a collective, sharing financial implications and other resources. (Female, 75+, current customer, England, D, White British)

5.4   Spontaneous mentions of cost and water company profit

At this stage of the research no explicit mention had yet been made of how water companies' actions might be paid for. This was deliberate, since the aim at this stage was to ascertain the citizen view without bringing in the bill-payer perspective. However, when discussing the levels of action that water companies might take, **affordability and payment** for this work was raised spontaneously by some participants, who recognised that their aspirations may be unrealistic:

> Water companies should go over and above for the long-term benefit, but whether financially that is possible or practical is another matter. (Female, 35-54, current customer, C1, White British)

> In an ideal world the water companies should go beyond the basic levels and aim for Level 3 but supported financially by industry, agriculture and fisheries and the government. I do think that the consumer pays more than enough for the service we receive, but we all want to preserve the planet for our children and their children so small increases incrementally are acceptable but not everybody can afford this, particularly at the moment. (Female, 55-74, current customer, Wales, B, White British)

This included several spontaneous mentions of minimising water companies' profits in order to be able to make such investments.

> Water companies should be expected to invest some of their profits back in improving the environment at the same level for all issues, as they are also a cause for some of the issues we face i.e. pollution. (Male, 35-54, current customer, England, B, White British)

When specifically asked about the idea of water companies making improvements that might not directly or solely benefit their customers, albeit that such actions may benefit society as a whole, this did not change participants' views. For many, the response was that water customers and water companies are part of wider society and will, themselves benefit from such work, regardless of whether customers are the primary beneficiaries.

Some participants questioned whether water companies, as profit making companies, are sufficiently motivated to pursue such work, where it is not to the benefit of their own customers or shareholders. A small number of participants (both English and Welsh) went further and questioned whether it is right for the water industry to be structured as it is in England, with companies that have profits and shareholders to consider.

However, most participants simply called on water companies to address this responsibility for the sake of everyone, saying this is now what is expected of all socially and environmentally responsible companies:

> All companies with focus on the green agenda would now be considering business changes that could impact society as a whole and not just their customers, for example Sky are implementing electric vehicles, this doesn't have a direct impact on the customer or the service they receive however it is helping to improve the environment for the future. Why should water companies be any different? (Female, 35-54, current customer, Wales, D, White British)

Whilst many expressed the view that all companies, individuals and government bodies need to do as much as they can for the environment for the benefit of everyone, some did express the view that water companies have a special and unique responsibility because of the fact that their business is dealing with a natural resource:

> I believe if a decision has been made to monetise a natural resource then the people benefiting financially have an obligation to work their hardest to ensure they go above and beyond in terms of corporate social responsibility and resource management. (Female, 35-54, current customer, England, E, White British)

5.5   Competing priorities

Spontaneous discussion

Having discussed the degree to which the environment should be a priority for water companies, participants were invited to suggest what other, competing priorities companies might have to trade such activities off against. This line of questioning immediately brought to mind, for many, the driver for companies to make a profit.

Participants who raised this tended to be concerned that the need to make profits for shareholders may be prioritised to the detriment of environmental responsibilities.

> Making profit will always be a competing priority in addition to looking after the environment. Water companies could be spending all their time improving the environment, but they must still make profit. Finding a balance between this is important. (Male, 25-34, current customer, Wales, C1, White British)

> Water companies were privatised and thus have a duty to their shareholders to maximise the return on their capital. This conflicts directly with looking after the environment, because money spent on environmental projects comes out of the shareholders' profit. (Male, 75+, current customer, E, White British)

Participants also recognised that the key priority for water companies was to maintain water supply and adequately achieve their primary functions of delivering clean water and removing sewage waste. Those who mentioned this, recognised that since this is a water company's primary function, the ability to maintain basic operations would come before environmental considerations, whilst also recognising that the two are interlinked.

A small number of participants also, at this point, spontaneously raised the issue that water companies need to have concern to keep the costs of water low for their customers, although this was not raised widely.

> Costs are always a factor for both the consumer and the company. Customers don't want their water bills to rise, but I would be happy to pay a little extra each month/year if I knew that the money was being used to support environment issues. (Female, 25-34, current customer, Wales, C1, White British)

> I suppose cost to the customer is a competing priority. Acting to improve the environment may incur a cost that may ultimately have to be imposed on the customer. They also have to ensure a stable, sufficient water supply to customers which in turn may have detrimental effects on the environment e.g. chalk stream running dry. (Male, 55-74, current customer, Wales, E, White British)

Prompted prioritisation

When asked to prioritise a list of six other responsibilities that water companies have to balance (alongside the environmental priorities they had been talking about), '*Managing the environmental impact of what they do*' was the third priority when averaged across all responses. Figure 7 shows the mean score for all 7 priorities where a score of 1 is

assigned to the highest priority and a score of 7 to the lowest across all participants responses. Only the core responsibilities of providing clean and reliable drinking water and removing and treating water that has been used, were assigned a higher priority overall.
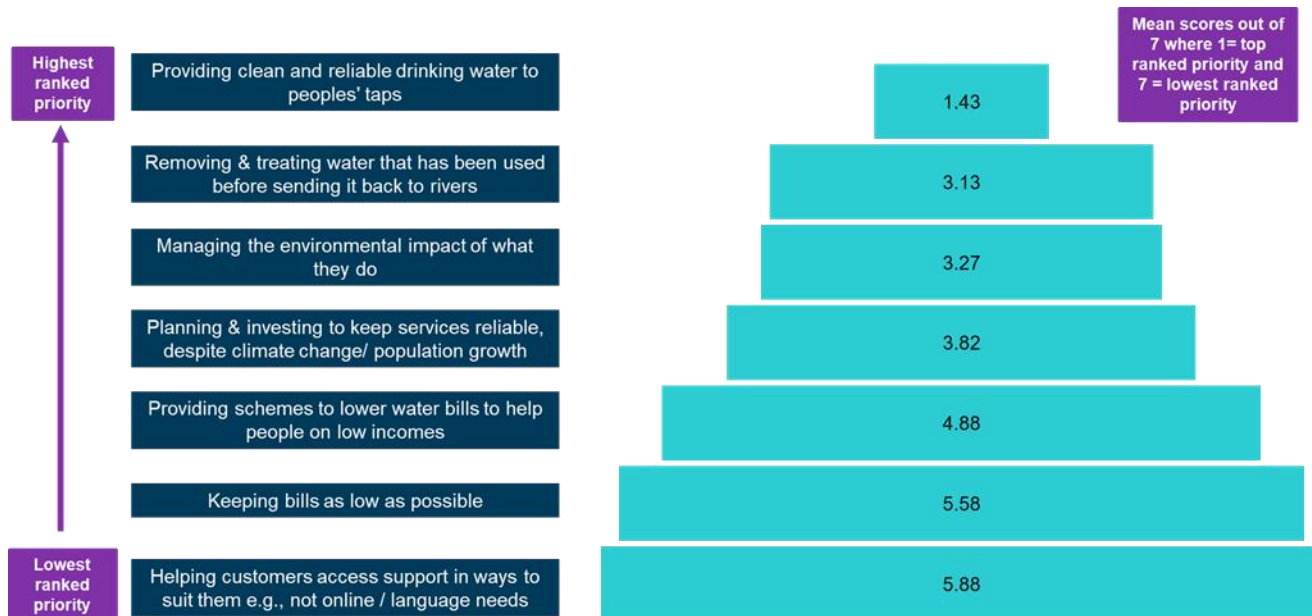

Figure 7 - Prioritisation exercise results[19]

When asked to explain how and why they had chosen the priorities that they had, many participants said they had found the process difficult and emphasised that everything listed is important to some degree. Whilst they had made these difficult choices, they were keen to ensure that it was understood that, for example, whilst less of a priority, keeping bills affordable and looking after people on low incomes remains important.

> It's a hard decision, but I mainly put some environmental impacts high along with providing clean and reliable drinking water as I believe this is a huge priority for these companies, as I believe if any of these were to stop then this is the one that would cause the biggest problem. The items put lower on the priorities were unfortunately helping lower income families and accessibility, I still believe they are important but ranked other items higher. (Male, future customer, 25-34, England, B White British)

With regard to giving a low priority to helping people on low incomes, some participants felt that this was something for the Government to consider rather than water companies:

> I do not believe people on low incomes should be a priority for them - that's the job of the Government. (Male, 35-54, current customer, Wales, B, White British)

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[19] Comparisons with the responses of a representative sample of adults in England and Wales who were asked the same question in a CCW survey are provided in Section 7.3

A number of participants, while cognisant that most people would prefer that water bills remain low, wanted to emphasise that this cannot be at the expense of delivering the core service and / or investing for the future and managing environmental impact.

> For me, the core functions of providing clean water and removing/treating waste water are the top priorities for water companies, and ensuring their future ability to do so by planning, investing and taking into account the effects of climate change. Minimising their own environmental impact in doing so is also obviously very important. While we would all like to have lower water bills, it's important that this is not achieved by cutting back on these key priorities. (Male, 55-74, current customer, E, White British)

6. Who should pay for environmental improvements and how?

> ### Section summary
>
> Many participants were comfortable in principle with the public paying for improvements to the water environment. They saw benefits in terms of the environment, society and future generations. They also acknowledged that it is acceptable and fair because the public would benefit and have also contributed to the problems. However, a substantial minority disagreed, arguing that polluters should pay, beneficiaries should pay, or water companies should pay from profits etc.
>
> - There was some debate on the best way to pay for environmental improvements and the suggestion that a combination of approaches (e.g., tax, water bills, charitable donations) would work best - mainly because each approach had different strengths and weaknesses.
> - Overall, there was widespread support for paying for environmental improvements through water bills. However, there were several caveats, limits and assurances that would make them feel more comfortable about this approach relating to the amount charged (ensuring affordability and keeping increases reasonable) and how the money is spent (money being ring-fenced, activity being monitored and there being evidence of a positive outcome).
> - Generally, participants accepted paying more for environmental improvements (however, it should be noted, that whilst hypothetical bill increase amounts were deliberately not given, some participants assumed that any increases would be fairly small). They also believed that such increases need to be fair. In particular, the need for the polluter to pay was mentioned repeatedly.
> - Views differed about whether water bill-payers should pay for improvements related to all environmental issues or only some of them. Almost all future customers (who are not yet paying bills themselves) were in favour of paying for action on all environmental issues.

It was only after participants had discussed the levels of action they would like to see water companies take to address environmental issues that they were provided with information about how such work might be paid for. Whilst some participants had recognised the possible impact on customer bills at an earlier stage, this was not something that they had been asked to focus on.

Participants were shown an animation https://vimeo.com/512533335/92de3d52b5 which explained how environmental activities might be paid for, including the fact that actions taken by water companies might impact on customer bills.

6.1   Should the public bear the cost?

Support

Many participants were comfortable with the public paying for improvements to the water environment. They gave a range of reasons for this support:

- They argued that **water and sewerage services are essential** so taking steps to protect them was worth paying for.
- They expected that paying to address environmental problems promptly would mean paying less later, because otherwise the problems and associated costs could escalate.

    It's good to think long term… More action now will mean less action in the future. And it'll be a lot cheaper now than when issues get much bigger and much more expensive to put right. (Male, current customer, Wales, 55-74, E, White British)

- They believed that, in principle, **it is everyone's responsibility** to care for the environment, for society as a whole, and for future generations. It is notable that participants continued to take this citizen's perspective even while explicitly thinking about bills i.e., citizen and billpayer perspectives co-exist.

    I am happy to contribute to environmental improvements in my water bills. We have a responsibility to try and leave the world in a better state than we found it......or at least no worse! (Male, current customer, Wales, 35-54, B, White British)

    I am happy with water companies paying for environmental improvements through water bills as it's the responsibility of every citizen to keep our environment clean and safe. (Female, current customer, Wales, 35-54, A, Indian)

- In the animation before this discussion, it was mentioned that they might not benefit personally from environmental improvements and some participants raised this and explained why they did not mind. They were happy to pay for environmental improvements for the benefit of the environment, wider society, and future generations. This was in marked contrast to participants who objected to paying because they believed they would not benefit (see below).

    Improvements to water quality and environmental quality benefit society as a whole, and society should therefore pay. Any specific improvement might not directly benefit everybody, for example cleaner beaches do not mean much to someone who never goes to a beach BUT cleaner beach = cleaner sea = better fish, and perhaps that person who never goes to the beach might love fish and chips. But that is the way a complex society works - things are done for the greater good. (Male, current customer, England, 75+, E, White British)

- They believed that it was fair because they had somehow contributed to the problems. This was in marked contrast to participants who objected to paying because they believed they had not caused the problems (see below).

> I am very comfortable paying for environmental improvements through water bills. We have all contributed in some way shape or form to the declines in our environment. (Female, current customer, England, 55-74, C1, White British)

Contributing to the cost of environmental improvements was seen as part of 'the bigger picture'. It fitted with taking other steps to address environmental problems in their daily lives.

> As water is an essential part of our lives, it seems only fair that we contribute, whether that be with our own time and resources, or by raising costs like taxes. (Male, future customer, England, 25-34, D, Mixed Ethnicity - White and Asian)

Participants who agreed that the public should pay, mentioned that they expected or hoped that any increase in costs would be small and explained that this would make paying for environmental improvements more acceptable. Only a couple of participants noted that it had been explained that bills would not necessarily need to increase in order to pay for environmental improvements.

> I do not think that people would mind paying a little extra tax to ensure a constant supply of water. (Female, current customer, England, 55-74, C1, Caribbean)

Opposition

In marked contrast, a substantial minority of participants questioned whether the public should have to pay at all. Perhaps surprisingly, this group were mostly from B or C1 socio-economic groups (middle or lower middle class groups). These participants raised several **objections** to paying for environmental improvements, as follows.

- The public pay a lot already through taxes and bills, and so it would be a worry to have to pay more. This was partly because it could make bills unaffordable, a particular concern now with incomes hit by the pandemic. It was also partly because an increase did not feel justified.
- They objected strongly to others making large profits or being paid large wages while the public shouldered the cost, something that they felt happened too often. They, therefore, argued that environmental improvements should be paid out of reducing profits or by cutting wages. The focus tended to be on water company profits but politicians' wages were also mentioned and even occasionally farmers' profits.

> Why is it the only realistic options come down to us paying more??? Why can't the politicians take a wage cut? It's always a case of the working people have to pay all this tax whilst anyone earning over the threshold get all their money sent to offshore accounts. What a joke of a world we live in. (Male, current customer, Wales, 25-34, C1, White British)

> Bills are expensive enough, but I still think some of it should come from the huge profits water companies are making. Keeping increasing bills in the current pandemic just isn't fair. (Male, current customer, England, 35-54, B, White British)

- It seemed unfair to pay for resolving environmental problems caused by others, particularly pollution. Instead, the costs should be borne by whoever was responsible for causing the problems.

  My first thought is that the polluter must pay. (Male, current customer, England, 75+, B, White British)

  I think that on the whole the water companies should take action but should then claim money back from anybody found to be causing pollution, farmers, industry etc. All farmers should have to have the strip at the edge of their fields and fence the land off to prevent pollution. If not, they should be subject to heavy fines. Industry causing spillage into seas and rivers should pay for the clean-up. Fast food outlets whose packaging contaminates our beaches and damages wildlife should also face penalties as should members of the public found polluting, whether by littering or adding contaminants to the water... If the government have to step in then they should be able to claim the money back from the polluters. (Female, current customer, Wales, 55-74, B, White British)

- Along similar lines, it seemed unfair to this group of participants to pay for problems that did not affect them personally. Instead, the beneficiaries of environmental improvements should pay.
- The last two issues, i.e. polluter and beneficiaries paying, were mentioned later in the discussion in relation to other matters e.g. what environmental problems the public should pay for and who should pay for local environmental problems.

6.2   How to pay for environmental action

The animation described four possible routes for paying for environmental improvements - through water bills, taxes, charitable donations, or food prices - and participants discussed their preferences. They mentioned several pros and cons for each option, summarised in Figure 8 and discussed below.
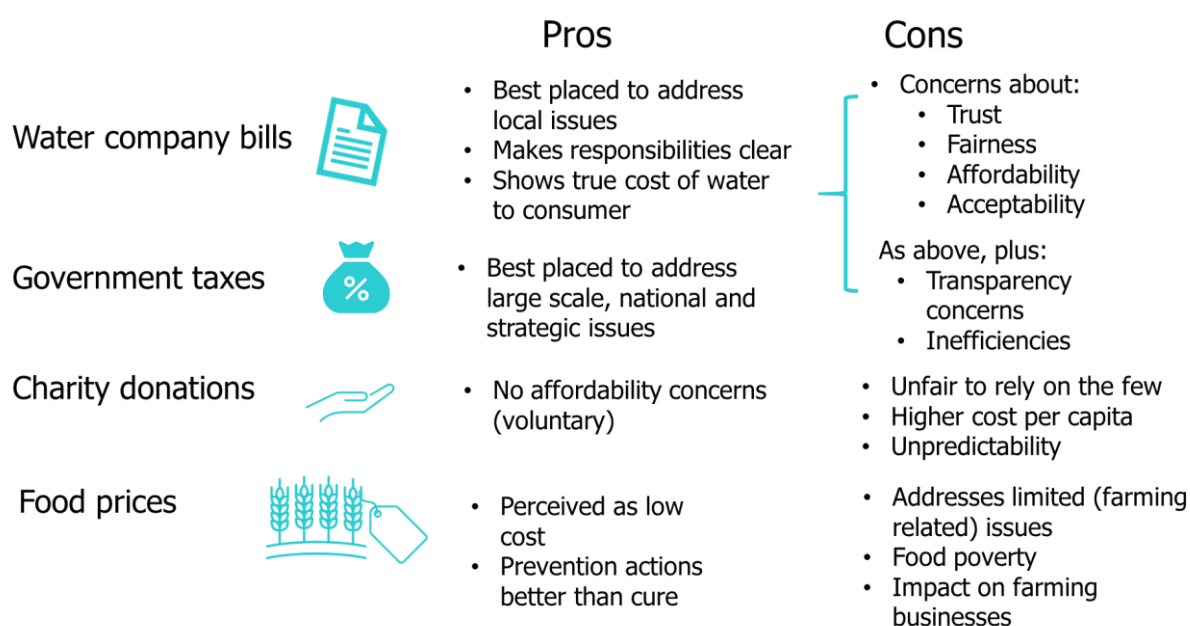
		Pros	Cons

Water company bills		• Best placed to address local issues
		• Makes responsibilities clear
		• Shows true cost of water to consumer
			• Concerns about:
			  • Trust
			  • Fairness
			  • Affordability
			  • Acceptability

Government taxes		• Best placed to address large scale, national and strategic issues	As above, plus: • Transparency concerns • Inefficiencies
Charity donations		• No affordability concerns (voluntary)	• Unfair to rely on the few • Higher cost per capita • Unpredictability
Food prices		• Perceived as low cost • Prevention actions better than cure	• Addresses limited (farming related) issues • Food poverty • Impact on farming businesses

Figure 8 - Pros and cons of ways to pay for environmental actions.

While **paying through water bills and through taxes** were both popular, they also raised some concerns. Both raised concerns about trust (the money might not actually be used on environmental improvements); fairness (depending on views about whether all or some people should pay for environmental problems); affordability (a tax or bill increase would be unaffordable for some people) and acceptability (a tax or bill increase would be annoying if, for instance, people did not think it was justified).

> I prefer the water companies/consumer option. They have more control over expenditure. If our money goes to government then it will just be prioritised somewhere else. (Female, current customer, Wales, 35-54, C2, White British)

> If water companies take the most responsibility the bills will go up and customers would be unhappy. (Female, current customer, England, 75+, C1, White British)

In addition, **paying through tax** raised other concerns. It would feel, to some, like paying twice because people already pay for water-related matters through their water bills. Government was not generally seen as having a direct role in these matters so did not seem best placed to tackle them. It would also raise concerns about possible inefficiencies and a potential lack of transparency about how taxes are spent.

Paying through tax would be advantageous because government could address large-scale problems in a strategic way. **Paying through water bills**, on the other hand was seen to offer more unique advantages, including the following:

• Water companies were seen as ideally placed to address water-related environment issues, particularly local ones, as they deal with water day-to-day. A few participants said that they thought their water bills already included charges for environmental improvements.

> I think I prefer the water companies paying as I feel it is expected when you pay a water bill that that money is to ensure you have clean and reliable water, and any other actions that can improve or support this. (Male, current customer, Wales, 25-34, C1, White British)

> It would seem to me that the way forward would be to pay a little more on our water bills as then we would be sure that the money would go towards water issues. (Female, current customer, England, 55-74, E, White British)

- The information provided about Ofwat's oversight of pricing decisions reassured participants that water companies would spend the money well.

> It was interesting to hear about the way in which water bills are calculated and how the companies have little control over the pricing. This is good to know... I think customers would want to know that their money is being spent according to plan. (Female, current customer, England, 35-54, D, White British)

- Paying through water bills would also make water companies more clearly responsible and accountable for the state of the water environment.

> I would prefer water companies to take charge and the cost be passed on to the customer. I feel if the true cost was readily apparent then it may make consumers more alert to water use and the environment. Farmers could also charge more for their produce, it would give an indication of the true value of our food, and also help reduce food waste. I believe that paying through our taxes doesn't provide education on water, food, environment… I would like to know that I'm paying for the water company to do their job, and what they are doing is apparent to me. If they are being paid directly blame can't be shoved in the direction of the government. (Male, current customer, Wales, 55-74, E, White British)

- Paying through water bills would give customers a sense of the "true cost" of water, reflecting the cost of protecting the environment and discouraging waste.

Relying on charitable donations was seen to have serious drawbacks. It seemed unfair to rely on the few people who choose to donate because it is everyone's duty to share the cost of environmental improvements. The cost per person would be lower if divided between everyone. Donations were unpredictable so could not be relied upon for core funding and would be best suited to filling gaps not already covered by government and water companies. On the plus side, donations are voluntary so there are no concerns about affordability; and charities already work on environmental issues and should have the skills to be effective.

The potential of **paying through food bills** was discussed least. This was partly because this would be limited to farming-related matters. It was also because some participants saw little need for farmers to pass the cost of environmental improvements on to customers. Many actions they could take were assumed to be very low cost and it was also thought that grants might be available. The main concern about involving farmers was that if food prices increase to cover environmental improvements, this could exacerbate food poverty, a particular problem now, in the pandemic. It could also

negatively impact on their business. The main advantage discussed was that there are simple steps farmers can take to prevent pollution, which is preferable to sorting out pollution after it has happened.

> Farmers charging more for food produce is a very tricky option as there are so many people in food poverty at the moment. (Female, current customer, England, 55-74, E, White British)

> Farmers would potentially suffer if they start charging more for produce that being said they can stop pollution before it happens and it is vital to prevent rather than cure. (Female, current customer, England, 35-54, C1, White British)

It was often suggested that a **combination of approaches** to fund environmental work would work best. This was partly because, with so much at stake, it was important to make rapid progress by addressing environmental problems through as many approaches as possible. However, it was mainly because each approach had strengths and weaknesses, therefore it makes sense to use a combination of approaches that complement each other. For instance, tax could be used to address national issues and other approaches to address local issues; or tax for core environmental improvements and other approaches for the 'extras'.

> Personally I think it should be a country wide effort to maintain and clean up the environment. So, the majority of the costs should be collected through government tax. That way it would be fair all round and not just be dependent on your water company in your area allocating enough funds for the environment. Saying that the other means of acquiring funds could be a good way of boosting the funds available and allowing the pursuit of going the extra mile. (Male, future customer, England, 18-24, C1, White British)

> I would have thought charity donations perhaps are geared more towards wildlife. Whereas the government would be more focused on issues such as flooding so, yes, I guess each would perhaps focus on different issues and in doing so would contribute to the overall good. (Female, current customer, England, 35-54, C1, White British)

The rest of the discussion on paying for environmental action focused on paying through water bills, as discussed below.

6.3 Assurances and limits (if paying through water bills)

If environmental improvements are to be paid for through water bills, participants suggested several **caveats, limits, and assurances** that would make them feel more comfortable about this approach. These are summarised in Figure 9 and discussed in detail below.

It is important to note that almost everyone who answered the question about caveats, limits and assurances was broadly comfortable paying for environmental improvements through water bills. This is because the minority who opposed the idea in principle tended not to suggest anything that would make them comfortable about the idea.
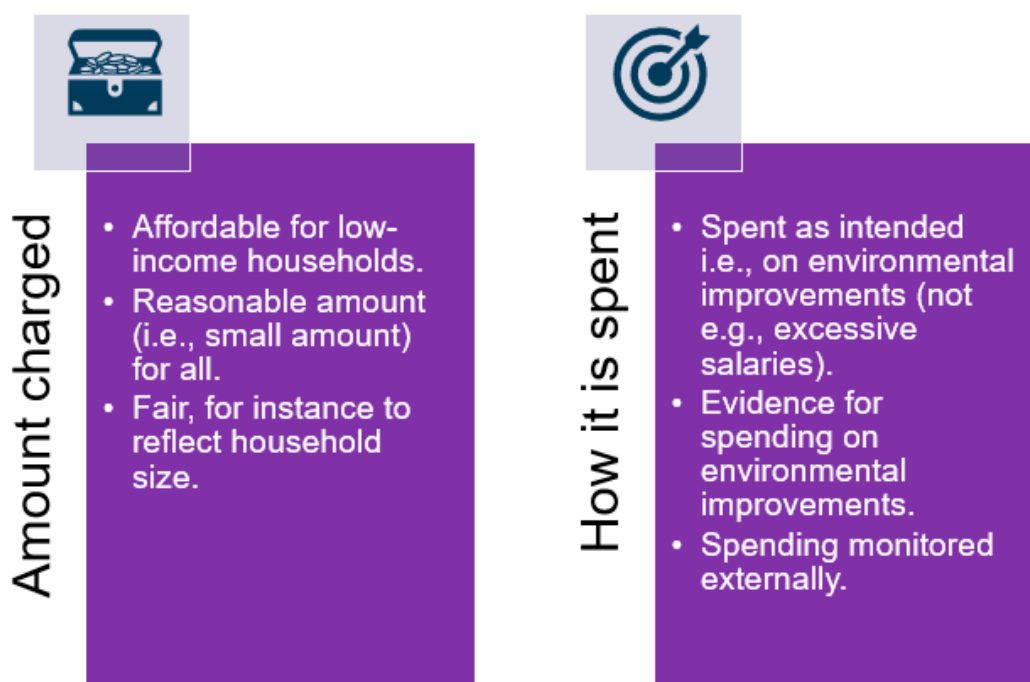
Amount charged
- Affordable for low-income households.
- Reasonable amount (i.e., small amount) for all.
- Fair, for instance to reflect household size.

How it is spent
- Spent as intended i.e., on environmental improvements (not e.g., excessive salaries).
- Evidence for spending on environmental improvements.
- Spending monitored externally.

Figure 9 - What would make people more comfortable paying for environmental improvements through water bills?

Several of the limits and assurances that participants asked for related to the **amount charged** for environmental improvements. When participants made these comments, they assumed that bills would increase, even though it had been explained that bills would not necessarily need to increase to pay for environmental improvements[20]. Reassurances sought included:

- **Ensuring affordability for low-income households -** any bill increase for environmental improvements needs to be affordable for those on limited budgets. Participants were sometimes concerned for themselves but sometimes did not mention the personal impact and seemed to be concerned for others. As well as keeping the amount small, it was suggested that this could be achieved by not charging low-income households or perhaps making such payments optional for those on low incomes.

  I don't think people on low income should be expected to shoulder any additional costs so would this as a caveat. (Female, current customer, Wales, 25-34, C1, White British)

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[20] The animation script explained: "The more they [water companies] do, the higher the customer bills might be. But prices don't necessarily increase, because water companies can also find ways to do things more efficiently. In fact, between 2020 and 2025 average bills will fall by about 9 percent, after taking account of inflation."

- **Keeping increases reasonable -** any bill increase needs to be kept low for all customers, to help boost acceptability.

    My caveat would be 'don't take the mickey' bill-wise. (Female, current customer, Wales, 55-74, D, White British)

- **Fair distribution** - the amount charged for environmental improvements needs to be fairly distributed between customers. For instance, a participant living by herself, on a meter, wanted to ensure that small households were not charged the same as large households.

    I am comfortable to assist with the costs incurred by my water company for environmental work on an equitable basis. I am one person so would feel aggrieved if it was a flat rate per household. (Female, current customer, England, 75+, D, White British)

During the online focus groups some further discussions were held about affordability and some information was shared about some of the schemes available to water customers on low incomes or benefits (i.e., water companies' financial help schemes; Water Sure and water companies' charitable trusts). Knowing that such schemes exist did make some participants feel more comfortable about the potential of bills increasing to pay for environmental action, as long as the schemes kept pace with the scale of any bill increases:

    I think if you're able to pay more and you had an option to and you were happy to, then I think that's perfectly fine. But for those people who already struggle, or would struggle without help schemes, I don't think it would be fair to ever increase their bills unless their other income sources also increased in line with that. (Online group participant, future customer)

However, for some, the help schemes raised their own concerns:

    If you look at the fact that water companies do have these products in place and this safety net in place for people that can't afford their bills, it does go to show there's a percentage of the population who already can't afford them. So, when you start to hike them up then what's going to happen is you're going to have more people requiring those safety nets. I'm not a huge fan of having safety nets … there's a little bit of shame that comes along with that and I don't think anybody that is having to pay bills should feel that. (Online group participant, current customer, Wales)

Other limits and assurances were to do with **how the money raised would be spent**. Reassurances sought included:

- **Ring-fencing for environmental improvements –** participants' main concern was that money collected through bills for environmental improvements might be spent on something else. They wanted to ensure that it would not be spent on, for instance, profits or excessive salaries for senior staff, or projects with no benefits to customers or the environment.

> If water bills were to rise, I would like a caveat included to state that the extra money must go to improve environmental issues and must not be used to pay shareholders extra dividends or increase the company's profits. (Female, current customer, England, 55-74, E, White British)

- **Evidence of outcomes -** participants repeatedly requested evidence that money is spent on environmental improvements, as intended. This was by far the most widely requested assurance. They suggested that this could take the form of information in, for instance, a water company's annual report, their bills, or the media. It is worth noting, however, that participants did admit, when questioned further during the online group discussions, that, they seldom had the time or inclination to read information provided along with water or other utility bills.

- **Monitoring/oversight** - participants sometimes asked that an independent body might monitor charges, spending and activities. It was also suggested that penalties could then be applied, if the money was not spent as intended.

> I would like to see in an annual report exactly what my water company has done that year and what it intends to do over the next year. They need to be held accountable by Ofwat if they don't spend the extra money from an increase in bills in the right areas to protect the environment. (Male, current customer, England, 55-74, C1, White British)

6.4   What environmental issues should be addressed through water bills?

Views differed about whether water bill-payers should pay for improvements related to all environmental issues or only some of them. Their reasons are summarised in Figure 10 and discussed in detail below. Almost all future customers (who are not yet paying bills themselves) who were happy for the public to pay for environmental improvements were in favour of paying for action on all environmental issues.

Comfortable paying for ALL ENVIRONMENTAL ISSUES

- All issues are important.
- Issues are linked, so it does not make sense to tackle in isolation.
- Water companies / regulators should prioritise.

Comfortable paying for SOME ENVIRONMENTAL ISSUES

- Whoever caused environmental problems should pay for them i.e., polluters should pay.
- Only people affected by drought and flooding should pay for addressing these issues.
- Not comfortable paying to address environmental issues outside water company remit.
- Not comfortable paying to address environmental issues that feel too large for water companies to affect.

Figure 10 - Reasons for paying to address all, or only some, environmental issues through water bills.

There were three main reasons why participants were comfortable paying through water bills to address **all environmental issues**, as follows:

- **All the issues are important** - participants mainly argued that all the environmental issues they had been asked about are important, so all should be addressed through water bills.

    We should all contribute to improve these issues. Each one of those are important, I'd like to know that I'm helping to create a healthy world for future generations to live in. (Female, future customer, England, 18-24, B, White British)

- **Interdependence** - participants also argued that it does not make sense to tackle any of the environmental issues in isolation since they are interlinked.

    They are interdependent on each other and all need to be addressed. (Female, current customer, Wales, 55-74, C1, White British)

    I think all of these things are important. Many go hand in hand. Improve one thing and it has an impact on the other. (Female, current customer, England, 35-54, C1, White British)

- **Water companies/regulators should prioritise** - while participants hoped that the money raised through bills would be spent on the most urgent issues first, some had no strong preferences and believed the decision about where to focus efforts should be left to water companies and regulators, who have the more insight, including local knowledge, to make such decisions.

> I don't feel more strongly about any one issue being addressed using my money over another. I would just be happy if my money was going towards resolving the most pressing issues first. (Male, current customer, Wales, 25-34, C1, White British)

> I've no affiliation to a specific problem. I believe the companies and local councils should make that decision based on local priorities. (Female, current customer, Wales, 35-54, C2, White British)

However, the occasional participant did suggest that customers should be consulted about these decisions:

> The different water environmental areas are subjective and consumers will have varied opinions as to how important they are. My water company may have different priorities to mine. At the moment, I don't think the consumer has enough of a voice to make a meaningful impact. I think some consumers would want to question the water companies, if permitted to do so. (Female, current customer, England, 75+, D, White British)

Participants who were comfortable paying through water bills **to address only certain environmental issues** gave a variety of justifications to explain which issues they would be happy to pay for and which they would not.

- **Water company remit** - as was the case when discussing the level of action that companies should take on various issues (see Section 5) some participants felt that it was not appropriate for water companies to address environmental issues beyond their own remit or core services.

  > I think water company should try to address those issues to maintain our water supply and the customers should contribute towards it. (Female, current customer, England, 35-54, C1, Chinese)

- **Water company impact** - on a related point, it was felt that water companies simply might not be able to make a big difference on large-scale issues, such as global warming. However, the opposite view was also mentioned posited - that these bigger issues are, in fact, most important to address.

  > I think it too easy to be confused about problems that are not the direct business of water companies. Droughts are a water company problem that requires long-term planning and investment. Global warming coupled with extreme rainfall also demand long term planning but cannot be solved by water companies acting on their own. (Male, current customer, England, 75+, B, White British)

  > I imagine global warming is the one thing they have less control over but the points raised earlier about using sewage to fuel greenhouses etc. will have some effect. (Male, current customer, England, 55-74, C1, White British)

- **Polluter should pay** - some participants argued that pollution should be paid for by whoever has caused it, rather than through water bills in general. While it was recognised as impossible to target bill increases at the most polluting households,

farmers and industry should be asked to pay where problems could be traced to them. This is discussed further in 6.5.

> I'd be happy to pay for any of the above environmental issues. I wouldn't be happy to pay for anything that was avoidable and traceable back to a specific place (e.g., chemical spill from a company/farmer's land spreading fertiliser into a river - I would expect those responsible to shoulder the cost. (Female, current customer, Wales, 25-34, C1, White British)

- **Beneficiaries should pay** - while fewer mentioned this, it was also occasionally suggested that problems that only affected certain people, mainly drought and flooding, should be paid for by those people. However, when this was discussed in more detail, more nuanced views emerged, as discussed in 6.5.

6.5   Issues of fairness

Paying for problems caused by others.

Pollution

There were strong feelings about the concept of the polluter paying to rectify environmental damage caused. It was raised spontaneously in the online forum as a reason why consumers should not be responsible for paying for environmental action at all (see Section 6.1) and why they should not pay to address certain environmental issues (Section 6.4).

There was also a fairly clear-cut response when participants' views on this issue were reality-checked during the online group discussions. They felt that, if the polluter responsible could be traced, then they should be responsible for paying to resolve the situation. This was particularly when the pollution was caused by farmers (who could take steps to deal with it) or by large businesses (who were perceived as being able afford to pay).

> I think where there is a responsibility, whether it's a company has been dumping chemicals into the local stream, then obviously they should foot the bill for that to be cleaned up, not the consumers or the water companies. (Online group participant, current customer, Wales)

Generally, it was felt to be appropriate for water companies to address (but not fund) issues directly caused by others as they have the knowledge and expertise. It was also acknowledged that there are some grey areas; that the causes of some pollution may be unknown and that some pollution is actually caused by consumers.

> Some things are directly at fault in terms of the actions we take but some things are indirectly… I mean, it's still our actions but sometimes you just don't really think about it. Like you don't really understand how positively or negatively you impact on lots of things, sometimes it's normal human activity (Online group participant, future customer, England)

Flooding

In the online focus groups participants were asked about who should pay to address flooding: all customers in an area covered by a water company; or only those directly affected by flooding. Some participants felt strongly that customers should not have to pay largely because they felt that others were responsible for the problems (e.g., local authorities and developers who allow or build homes too close to flood plains). They argued that consumers should not have to suffer financially as a result and/or that flooding is an issue that should be addressed by the government.

> I don't know really, I guess it doesn't sit that well with me for the majority to pay for a few, if I'm pushed to an answer on that one. (Online group participant, current customer, Wales)

However, most participants felt it was reasonable for all customers to share the cost. This was because they recognised that the problem of flooding was complex, multi-faceted, with no single cause. Whilst they talked about the culpability of local authorities and housing developers for building on flood plains, they also mentioned their own contributions to climate change.

> I live on the top of a hill so I don't get affected by the floods but, if I were to pay the water bill here, I would be more than happy to pay extra to help those people who were lower down, because maybe some of them can't afford it and they're living in that house because it's a cheap place to live?....Really it's more global warming related flooding, so I'd be driving my car more than I should, meaning that I'm causing more global warming. So, it's kind of an issue for them, so I should be covering the shortfall. (Online group participant, future customer, England)

Paying for local problems in principle – a national or water company cost?

In the online forums, when asked how local problems should be paid for, the dominant view was that the cost should be shared nationally and should not just be borne by water company customers in the affected area only.

This view was prevalent across the sample – from young and old, those in Wales and those in England, future and current customers. Participants gave several reasons for believing that the cost should be shared, summarised in Figure 11 and described in more detail below.

Figure 11 - Reasons the cost of local problems should be shared nationally.

Some participants argued that ultimately everyone would benefit from addressing local problems so it was fair for everyone should pay. Participants appeared to be considering this question from both a consumer and citizen perspective (i.e. I am personally likely to benefit because everyone will benefit). Reasons given included:

- Local environmental problems such as pollution or water shortages would, in time, have wider impacts. For instance, local pollution would spread, and water shortages could affect food costs. Therefore, resolving these issues would have wider benefits than for those in the area directly affected. This point was mentioned by proportionally more participants in Wales, but not exclusively so.

  Everyone will benefit from the improvements no matter where they live. People should not just pay for their own issues such as pollution, droughts and flooding as what happens down South still has an impact to people living up North as they are all affected by the resulting food shortages i.e., reduced marine life and crops etc. (Female, current customer, England, 55-74, E, White British)

- People travel, under normal circumstances. While visiting other parts of the country, they enjoy beaches there, use the water there and so should contribute to looking after them. People might also move to other parts of the country in the future.

  I don't think that different areas should have differing bills as we all travel and enjoy areas where more investment is needed. As a city dweller I would be happy to pay more if it made it possible to go to the Lake District for example and enjoy the wildlife and clean water in that area. (Female, current customer, England, 75+, C1, White British)

- Finally, every area will probably, at some time, have environmental problems of some sort, so all areas will eventually benefit from sharing costs.

  I am happy with the idea that we all contribute to each other's regions as it is quite clear that no matter where we live there are all different kinds of problems that affected the environment. (Female, current customer, England, 55-74, C1, White British)

Going further than this, some participants argued from a citizen perspective that it is simply right to share the cost, irrespective of who benefits, because:

- Everyone contributing equally is a fairer way of doing things:

  It's fair for everyone to pay the same amount irrespective of where they live. (Female, current customer, Wales, 35-54, C2, White British)

- The cost per person would be smaller if divided between everyone nationally, rather than a small number of people locally.
- Participants also referred to wanting the best for the country or society as a whole. This view went beyond environmental problems, with participants objecting in principle to the idea of "segregating the country."

> It would be for the greater good to protect and maintain our country to a good standard of living. (Female, current customer, England, 35-54, B, Chinese)

> The U.K. is a Country and I personally have no objection paying for things for an overall better country to live in. (Male, current customer, England, 55-74, B, White British)

However, there were some dissenting voices who believed that local problems should be paid for by local customers, except perhaps in the case of a major incident or local emergency. Those who took this position were almost all current customers, but they included a range of ages, socio economic groups and participants from both England and Wales.

Their main argument was that only those who benefit from having local environmental problem resolved should pay. It would not be fair to expect people who do not benefit to pay.

> I believe that consumers that live in specific areas that need that special attention e.g., coastline, drought problems should be a higher cost to their bill rather than average it out to all consumers… they are the ones who will be specifically benefiting from the projects and not all customers nationwide. (Male, current customer, England, 35-54, D, Indian)

Some also felt that this more localised approach would make local water companies more accountable to their customers and motivated to protect their specific local area.

> I think water companies should be responsible for their own areas unless a major incident and then it should be shared. The reason is it makes each of them accountable and makes them more motivated in their local area. (Female, current customer, England, 35-54, C1, White British)

Unlike participants who were happy to share the cost, these participants did not consider that in a mobile society, where people often visit non-local spaces such as beaches, lakes or rivers, everyone benefits from some activities to tackle pollution. Nor did they realise that in their locality they are likely to be benefitting from things which other customers are chipping in for. They also did not take into account how far some pollution can travel i.e. that local pollution does not stay local.

In the online focus groups when we asked whether it is fair for all customers in an area covered by one water company to pay for investments (for example to tackle flooding or improve a riverbank) which will only benefit a sub-group of customers in that same area, participants added one more reason for all customers to share the costs.

- There was also **broad acceptance** that consumers already pay for things that they do not benefit from directly (through various forms of national and local taxation).

> [The Council tax] doesn't benefit me but it benefits my area….It would be nice to have libraries, amenities and, if I want to go out, it's great to have nice parks and things if I wanted, but it won't be important for me, it's not a direct benefit. (Online group participant, current customer, England)

Paying for long-term investments

In discussions within the follow up focus groups participants were asked their views about whether it is fair for current bill-payers to pay for investments that they themselves may not benefit directly from. The response was broadly positive. Some acknowledged a possible, initial knee-jerk negative reaction to such a proposal, which after consideration would seem more acceptable.

> Yeah, my initial reaction was 'hell, no'…. if I thought about it and there was obviously a greater understanding of the actual impact it would have on future generations then you would reluctantly pay that premium and accept it, I would have thought, 'yeah'. Because it's for the greater good so you would just accept it. (Online group participant, current customer, England)

There was a recognition that this lack of direct personal benefit may equally apply to many investments that are paid for through taxation.

> We're all paying for infrastructure that will last, long beyond our lives anyway, through our general taxes. So, I don't see how that's any different really. (Online group participant, current customer, England)

Those with children or grandchildren or other younger relatives pointed out that, whilst they may not benefit directly their descendants would.

> I've had children and they've now got children and I have absolutely no problem with the notion that I need to spend money now to make sure they're okay. It's a sort of parent thing. I have no problem at all with that idea and, if I drop dead before I get any benefit from it, c'est la vie, that's life. (Online group participant, current customer, England)

Some also made the point that, in exactly the same way, they are benefitting from the investments of previous generations:

> I think it's been happening since people started paying bills really, hasn't it? Somebody made all the sewage systems and stuff before I was born, so it makes sense that something is in the pipeline now for future generations. It will be the same when they get to our stage of life, that they'll be paying for something that they won't see. I think it's just that cycle of life, isn't it, we all do it. (Online group participant, current customer, Wales)

It was also not lost on participants that early investment in projects that prevent issues from worsening, is likely to be a better and more cost-effective approach for everyone than leaving problems to be addressed further down the line:

> I think the benefits of preventing these problems could last for so many years … it will be so much more financially worthwhile to have put these measures in place now than try and constantly clean up pollution etc. that happens in the years to come. (Online group participant, future customer, England)

7. The citizen vs. customer perspective

Section summary

- There was no clear separation between participants' thinking as citizens versus their thinking as bill-payers. There was a spectrum of views between 'strongly citizen' and 'strongly customer'. Whilst some were more firmly concerned about the customer and bill-payer perspective throughout; many saw both perspectives at different stages in the process and some took a more firmly citizen approach throughout. Many participants showed signs of thinking in both ways. Nevertheless, with this backdrop, it was possible to discern a shift in views through the deliberative process and a difference between future and current customers.
- Participants themselves recognised that taking part in the research process and building their knowledge had fundamentally changed their views and likely responses.
- From early in the forum, it was clear that the water environment spontaneously inspired 'citizen thinking'. It was seen as a valuable resource shared and enjoyed by many now and to be preserved for future generations.
- Based on a greater understanding of the extent of the issues facing the water environment and a broader knowledge of water companies' roles, views about companies' priorities and willingness to accept that this may impact on bills had changed. Participants said that the process had moved them from the potential to focus on personal financial impact (customer viewpoint) towards support for collective and societal responsibilities (citizen viewpoint).
- Knowledge gleaned over the course of the project changed people's perspectives and supported the citizen perspective. Examples of current water company projects (as shared in Appendix 10.4) appeared to be instrumental in changing participants' views about the role of water companies in managing the water environment. There was very limited prior awareness that water companies did work of this kind. Knowledge of projects, particularly those affecting nature and wildlife, were appealing to people and influenced their views of water companies.
- Knowing about the issues and water companies' actions had multiple impacts, it:
  - Emphasised the citizen perspective – seeing the water environment as a collective responsibility, with some even vowing to volunteer and help with solutions;

  but it also:
  - Made water bills more justifiable (giving bill-payers understanding of what is delivered, beyond the delivery of tap water and removal of sewage).
- When asked about who should pay, there was inevitably more focus on bills but the citizen perspective was still strongly in evidence.
- Some key differences were found between future and current customers:
  - Future customers were less likely to suggest water companies should focus their strongest efforts on their core business or central remit.
  - They were, conversely, almost universally likely to suggest that companies' strongest focus should be on the combined issues of global warming / climate change; and the decline or extinction of plant and animal life.
  - Almost all future customers were in favour of paying for action on all, rather than some, environmental issues.

In addressing the objectives of this research CCW was keen to ascertain whether there were any discernible differences in opinion when people responded as water customers/bill-payers (thinking about their personal financial impact, as well as other personal costs/benefits) or as citizens (thinking about collective and societal responsibilities, costs and benefits). This is important because if views from a citizen-perspective are different from those from a customer perspective, this creates learning for the framing of future engagement and future research by water companies on this subject. Furthermore, the perspective taken could potentially affect acceptability of environmental actions taken by water companies, bill increases to pay for them, and calls for individual action/behaviour change.

This research programme sought to explore this by:

- Building people's knowledge and understanding of issues and exposing them to the views of others from different areas, with different experiences and from different generations, to see whether this affected what perspective they took (citizen vs customer).
- Separating discussions about payment for environmental action from broader questions about what should happen in principle, to see how far introducing questions of cost would change participants' views about what water companies should do.
- Ensuring that the question asked at the end of the exercise (overall priorities for water companies) could broadly be compared to a national data-set where people would be responding as uninformed, individual consumers, rather than from the basis of the more knowledgeable citizen-perspective.
- Looking, throughout the process, for any differences between the views of those currently responsible for bills and future customers who do not yet have this responsibility.

7.1   Complexity of citizen and consumer perspectives

Looking at the issue of citizen vs customer perspectives was not straightforward. There was no clear separation between participants' thinking as citizens versus their thinking as bill-payers for several reasons.

- First, the citizen perspective and the customer perspective each consist of a collection of ideas, as summarised in Figure 12 below.
- Second, there was a spectrum of views from strongly 'citizen' at one end to strongly 'customer' at the other.
- Third, different perspectives held by individuals coexist at different stages in the process. Whilst some were more firmly concerned about the customer and bill-payer perspective throughout; many saw both perspectives at different times and some took a more firmly citizen approach throughout. Overall, however, participants generally showed signs of thinking in both ways, at different points in the forum.
- Fourth, unsurprisingly different people hold different perspectives on the same issue.

For instance, participants who held a strongly 'customer' perspective were not willing to pay more for any type of environmental improvements under any circumstances and

argued forcefully that the water companies should pay because they benefit from improvements and/or polluters should pay because they had caused the problems. Participants who held a strongly 'citizen' perspective believed that bills should be increased to pay for improvements on all important environmental issues as this would be of benefit to the wider community, future generations, and the wider environment.

Nevertheless, with this backdrop, it was possible to discern a shift in views throughout the process, e.g. as information was provided (see 7.2), and a difference between future and current customers (see 7.4).

	Citizen perspective	Customer perspective
Why is the water environment valued?	Benefits to the community as a whole Benefits to future generations	Individual/ personal benefits
Why are environmental problems of concern?	Societal impacts Environmental impacts	Individual/personal impacts of environmental problems e.g. personal impact of flooding
Who is responsible for addressing and paying for environmental problems?	Collective action – individual, governmental, corporate	Whoever caused the problems (polluter pays) Whoever benefits from addressing the problems e.g. water companies should pay because they profit, rather than customers.

Figure 12 – Citizen vs. customer perspective

7.2 The impact of knowledge

Participants themselves recognised that taking part in the research process and building their knowledge had fundamentally changed their views and likely responses. Many of the final messages relayed by participants made explicit reference to this fact (see Section 8). The effect of information and tasks on citizen/customer thinking at each stage in the process is discussed below.

What was the impact of focusing on water environments that people value?

From early in the forum, it was clear that the water environment spontaneously inspired 'citizen thinking'. The exercise in which participants described to each other a water environment they valued got participants thinking about the value of water environment for themselves, others, future generations, and the environment as a whole (see Section 3). It was seen as a valuable resource shared and enjoyed by many now and to be preserved for future generations. The customer perspective was not really in evidence at this stage.

What was the impact of providing information about environmental problems and actions to address them?

Participants told us that, based on a greater understanding of the extent of the environmental issues facing the water environment and a broader knowledge of water companies' roles, views about companies' priorities and willingness to accept that this may impact on bills had changed. The process had moved people from the potential to focus on personal financial impact (customer viewpoint) towards support for collective and societal responsibilities (citizen viewpoint).

> I think I learnt a lot more about the environment and the responsibilities of everybody through doing this research. Whereas before I might have been thinking about my future and … whether I would have the finances to pay for these things. But I think it changed my view to think actually, if we're paying to prevent issues, then actually in the long term we will be saving money. (Online group participant, future customer, England)

What was the impact of finding out more about what water companies do for the environment?

Examples of current water company projects[21] appeared to be instrumental in changing participants' views about the role of water companies in managing the water environment. Many were surprised and impressed by the examples and ideas that were shared in the animation with particularly positive mentions of some of the example projects cited, such as the construction of leaky dams and re-use of sewage waste as an energy source. Indeed, it was noticeable from the comments made, both immediately after seeing the animation, and in the later online groups that the examples cited seemed to stick in participants' minds - particularly projects affecting nature and wildlife. Providing these tangible examples was felt to be helpful as a way of bringing to life how water companies can act positively for the environment in a variety of ways – something that was not immediately obvious.

> Some of the examples did surprise me in the video like tracking species of birds that are endangered and also using natural leaky dams. These are both great examples of water companies going the extra mile and using natural resources to combat an issue. (Male, 18-24, future customer, England, C1, White British)
>
> I liked the idea of 'leaky dams' and helping the nightingale population. Shows concern for wildlife and finding a simpler more natural solution to problems. (Male, 55-74, current customer, Wales, E, White British)
>
> I think it is good that water companies have been switching to electric vans and also giving farmers extra payments to use less harming pesticides in the upkeep of their land. (Male, 18-24, future customer, C2,   White British)

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[21] The examples that were shared in the animation are summarised in Appendix 10.4.

Additional knowledge gleaned over the course of the project certainly changed people's perspectives. Knowing about the issues and water companies' actions had multiple impacts, it:

• Emphasised the citizen perspective – seeing the water environment as a collective responsibility, with some even vowing to volunteer and help with solutions;

but it also:

• Made water bills more justifiable (giving bill-payers understanding of what is delivered, beyond the delivery of tap water and removal of sewage).

What was the impact of talking about who should pay?

Participants inevitably focused more on bills once the issue of who pays was raised in the forum (see Section 6). In some cases the customer perspective was strongly expressed. However, even at this stage, the citizen perspective was still clearly in evidence. For instance, concerns about keeping bills affordable (e.g. keeping increases to pay for environmental improvements small) were not always made from an individual consumer point of view - in many cases affordability concerns were raised on behalf of other, more vulnerable customers.

7.3   Prioritisation exercise compared to national data

As previously shown in Section 5.5, participants' priorities for water companies ascertained towards the end of the research (although prior to the introduction of discussions about payment) were as shown in Figure 13.
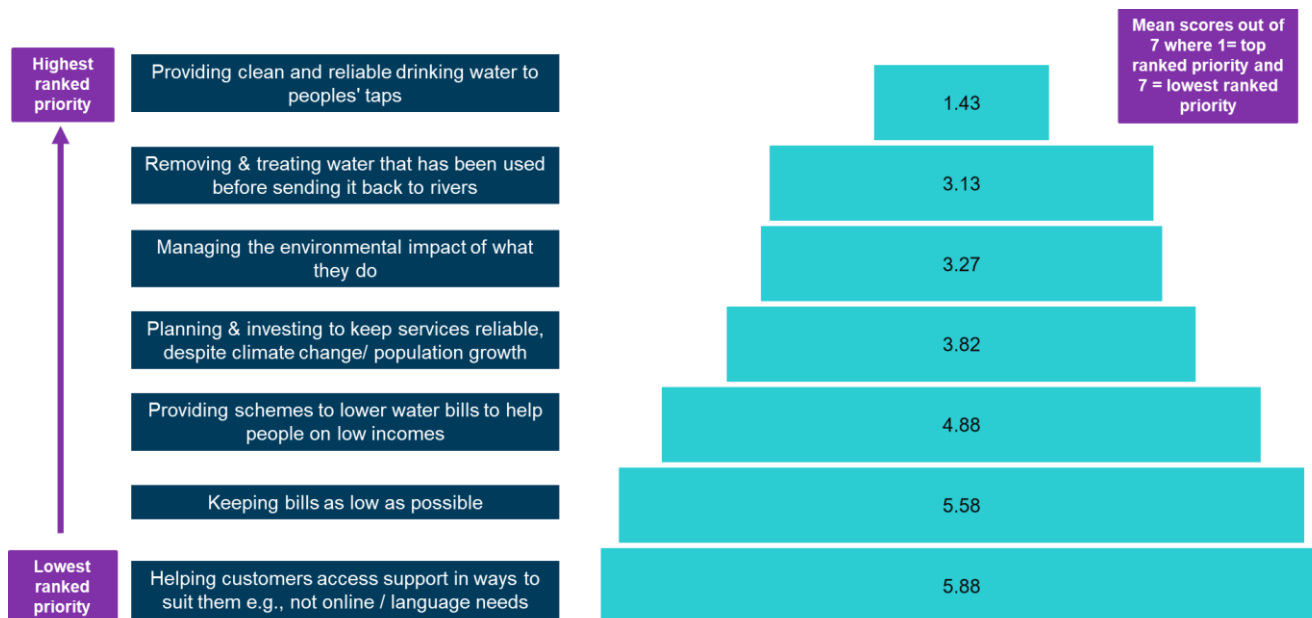
Priority	Item	Mean score
Highest ranked priority	Providing clean and reliable drinking water to peoples' taps	1.43
	Removing & treating water that has been used before sending it back to rivers	3.13
	Managing the environmental impact of what they do	3.27
	Planning & investing to keep services reliable, despite climate change/ population growth	3.82
	Providing schemes to lower water bills to help people on low incomes	4.88
	Keeping bills as low as possible	5.58
Lowest ranked priority	Helping customers access support in ways to suit them e.g., not online / language needs	5.88

Mean scores out of 7 where 1= top ranked priority and 7 = lowest ranked priority

Figure 13 - Prioritisation exercise results vs national data

By this stage in the process the participants' responses look very different to those of the wider public. This exact question was asked in November 2020 of a representative sample of adults in England and Wales in a survey commissioned by CCW. Those

results[22] showed that '*Keeping bills as low as possible*' was the second ranked priority amongst this general sample and that '*Managing the environmental impact of what they do*' was the sixth priority, higher only than '*Helping people access help and support in a way that suits them.*'

Whilst the two samples and the methodologies used to ascertain responses are not directly comparable, clearly, amongst the sample of participants in this research who had, by this stage, learned a great deal about environmental issues; water company responsibilities; and the range of possible actions they might take, '*Managing the environmental impact of what they do*' had become a much higher priority than might otherwise have been the case.

In follow up discussion groups, participants were asked about this apparent difference in the results and they explained that their additional understanding and wider perspective was, in their view, the clear reason for this difference.

> Like consciously/subconsciously our answers were a combination of what we already know, what we find out from other people and the information provided to us all combined together….So I think the survey is probably different because people are just looking at it from personal experiences – 'I don't think I can afford that or why should I be doing that'. (Online group participant, current customer, England)

> I think we've been educated through the process really and we've become a bit guilty or felt duty-bound to contribute to the future. That's the reason for it. I think I might have gone with keeping bills lower, prior to the event, myself. I don't think I did by the end of it. (Online group participant, current customer, Wales)

At the start of the process few of the participants were aware of water companies' role in respect of the environment or of the action that they already take. The online group participants stated that they would not have selected the environmental statements prior to the research as they simply would not have associated them with water companies – when statements relating to cost and affordability are more top of mind.

> If people just think that the water company is just the person responsible for when they turn the tap the water comes out and when they flush the loo the sewage disappears, if that's all they think a water company is, course they don't want to pay any more. So, if they're not aware, if they're not walked, as we were, walked through some of the other stuff that water companies do, then why on earth would they be interested in it or believe that they should pay for it when they don't know about it? (Online group participant, current customer, England)

7.4   Future vs. current customers' views

Some key differences were found between future and current customers. Of course, it is not possible to be certain whether these are generational differences (since all future

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[22] https://www.ccwater.org.uk/wp-content/uploads/2021/02/WaterVoice-February-2021.pdf

customers were under the age of 35, and most were under 25); or differences in view based on the fact that they are not yet responsible for water bills. The differences were as follows:

- Future customers were less likely to suggest water companies should focus their strongest efforts on their core business or central remit.
- They were, conversely, almost universally likely to suggest that companies' strongest focus should be on the combined issues of global warming / climate change; and the decline or extinction of plant and animal life.
- Almost all future customers were in favour of paying for action on all, rather than some, environmental issues.

British Social Attitude 35 (2018)[23] looked at how views about climate change differed with age and educational status. It found that older people were comparatively less worried than younger people. This pattern was not clear when discussing concerns about water-related environmental issues initially but did emerge later in the forum when discussing where water companies should exceed basic compliance.

In the prioritisation exercise future customers also gave greater priority to water companies managing their environmental impact than was the case for current customers. On average, future customers placed '*Managing the environmental impact of what they do'* as the second priority for companies, whilst current customers placed it fourth, on average, as shown in Figure 14.

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[23] https://www.bsa.natcen.ac.uk/media/39284/bsa35_full-report.pdf

Figure 14 - Current vs. future water customers' priorities

8. Final messages from participants

Participants were asked to give one final message to water companies based on what their reflections of discussions throughout the forum. The points they made, emphasised what they had said earlier in the research.

Many commented on the fact that the research had given them lots of food for thought and had opened their eyes about the seriousness of the issues and the challenges ahead.

There was a broad consensus that action is required and that there is a **collective responsibility**, with key players and individuals working together (see Section 4).

> Though every individual is responsible for their actions and how they decide to live within this world, it is truly up to the governments, and the industries that work directly with the environment, to make a real change and safeguard this beautiful world we so luckily get to be part of. (Male, future customer, England, 18-24, C2, Any other White background)

Participants noted that they were previously unaware of the key role played by water companies but, based on their new knowledge, they felt that this was appropriate. There was a **call for water companies to keep doing what they are doing**, but to also do more (see Section 5).

> It's pretty terrifying how damaged the environment is, and I hope water companies contribute to healing it. My message to the water industry would be to be transparent, honest, and kind. Take action before the world falls apart, and so we can live life to the fullest. (Female, future customer, England, 18-24, C1, White British)

> My message to the water industry regarding environmental issues is for them to address them in accordance with firstly their regulatory responsibilities and secondly to society as a whole. After all they control and provide water to the nation. (Male, current customer, England, 55-74, E, White British)

There was some mention of the challenges faced by water companies in terms of both the scale of the task but also **competing priorities** of delivering for both consumers and their shareholders (see Section 5).

> I do recognise the dichotomy that water companies face - pressure to manage a resource to the highest possible standards for the lowest possible cost, plus a responsibility to shareholders to be profitable. Notwithstanding that, they cannot shirk the task of acting now to ensure a clean & sustainable water supply into the future. It is not their sole responsibility, their role is to act in concert with the state and their customers. (Female, current customer, England, 55-74, E, White British)

Many commented that they had learned a lot through the research process and there was a **call for more education**[24] of consumers so that others were made aware of the issues and what was being done. Some consumers were optimistic about the future and encouraged by what they had heard, particularly about new initiatives and innovation in the sector.

> I've learned a lot and I'm encouraged by what is actually being done already, but there's still a long way to go! I'm encouraged by some water companies using electric vehicles and using sewage to fuel heating in greenhouses - we need more of this sort of activity. (Male, current customer, England, 35-54, C1, White British)

Some referenced the discussions on individual responsibility and who should pay for environmental improvement/initiatives. They reiterated a willingness to get more involved on a personal level as well as to pay for action in this area. However, they were only willing to pay if there is **transparency and accountability** in terms of how the money is spent; as well as guarantees about **protection for financially vulnerable** customers (see Section 6).

> The more I learnt the more engaged I feel, as would any reasonable person. Reach out, tell us how we can help and also how we can best use the waterways recreationally - to feel we're getting value for money. (Female, current customer, England, 35-54, C2, African)

> My eyes have definitely been opened in terms of what actually needs to be achieved...Therefore I believe that paying a substantial amount of money towards this is perfectly fair, within reason of course, it shouldn't be an exorbitant amount and it should be affordable for everyone as it is a right and not a privilege. That being said, I believe people can be sceptical of companies trying to squeeze money from their pockets so a method of preventing this could be to be 100% transparent with where the consumer's money is going and what it is contributing towards. (Male, future customer, England, 18-24, C2, Any other White background)

> My message to water companies is please keep environmental issues as top priority and please inform the public as much as possible regarding these issues. The more people are informed the happier they may be to work harder at protecting waterways, beaches, reducing usage etc as well as paying for the water companies to do these things more. It is the preservation of the future of the planet at the end of the day. (Female, current customer, Wales, 55-74, E, White British)

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[24] It is worth noting, however, that within the online discussion group reality-checking process, participants did admit that, in reality they would be unlikely to engage with information sent to them by their water company, for example, within their bill: "I probably wouldn't have read it anyway, the bill isn't something that you read."

9. Conclusions

The key findings of the research are summarised below. It should be noted that the research context influenced the discussion in several ways, as participants acknowledged:

- Flooding was front of mind because of recent widespread flooding and media coverage about it.
- The fieldwork was conducted during the Covid-19 lockdown and this had a number of (possible) repercussions:
  - Restrictions associated with the Covid pandemic had made people even more aware of the value of nature and water environments.
  - Poverty associated with the pandemic had made affordability even more of a concern.
  - Although participants did not say so directly, it is possible that the strong pro-social views expressed in the forum were partly due to stronger than usual feelings of community engendered by the pandemic.

9.1   Areas of broad consensus

It was evident that, across the sample, people valued water environments greatly and recognised how important they are. This was the case irrespective of demographics and behaviour i.e., whether they visit them regularly or only occasionally. The need to look after these environments for future generations was raised throughout the research.

There was widespread agreement that collective action is essential to address problems with the water environment. The public, industry, and government all have a role to play (although specific problems were seen as primarily the responsibility of different actors). Once participants were more informed, water company involvement was seen as entirely appropriate and sensible, as long as they are operating under a framework set by government and are fully accountable.

There was a prevalent call for a 'carrot and stick' approach i.e., stringent fines when rules are broken and incentives to encourage positive behaviour change at individual, community and organisational level.

Generally, participants accepted paying more for improvements to the water environment (however, it should be noted, that whilst hypothetical bill increase amounts were deliberately not given, some participants assumed that any increases would be fairly small). They also believed that such increases need to be fair. In particular, the need for the polluter to pay was mentioned repeatedly. Apart from that, what exactly they meant by 'fair' differed, as discussed below.

9.2   Information requirements/gaps in knowledge

There was widespread awareness and/or personal experience of littering and plastic pollution and some experience and/or awareness of flooding and water shortages. There was lower awareness of other types of water pollution, particularly agricultural pollution.

Whilst levels of knowledge varied, overall, the facts provided on the following issues relating to the water environment seemed to cause the most surprise:

- Sewage pollution;
- Biodiversity loss; and
- The overall health of the water environment.

People had little knowledge about how the water environment is currently managed. They had particularly low awareness of the roles of water companies and farmers.

9.3   Areas of debate/contention

When thinking about the functions of the water environment, participants recognised that it serves diverse and important functions, for human health and well-being, and for the environment. On the whole, its role in supporting people was given greater weight although this was not true for everyone. Concern for the environment was sometimes a concern for the concept of 'nature' or 'the planet', but sometimes related to an emotional attachment to wildlife.

Participants were asked how far water companies should go in tackling various issues facing the water environment. For all of the stated issues, the desire expressed by the majority of participants was for water companies to go 'beyond the basics' of meeting the minimum legal requirements. This was particularly strongly expressed in relation to both the decline or extinction of plant and animal life and global warming / climate change, where half or (in the case of extinction of plant or animal life) over half, wanted water companies to go to the highest possible level.

- However, within this, there were various 'schools of thought' in terms of whether action was required at the highest level across all issues or whether certain issues should be the focus for additional action.

There was some debate on the best way to pay for improvements to the water environment but, overall, there was wide support for paying for environmental improvements through water bills with an acknowledgement that this is acceptable and fair because customers would benefit and had also contributed to the problems.

- However, there were several caveats, limits and assurances that would make them feel more comfortable about this approach relating to the amount charged (ensuring affordability and keeping increases reasonable) and how the money is spent (money is ring-fenced, activity is monitored and there is evidence of a positive outcome).

In terms of differences by type of audience, participants in Wales seemed to be more aware of water companies' role in protecting the water environment as they were more likely to mention water companies' role unprompted, before being informed. They also seemed to be more aware of pollution incidents spreading beyond the local area. However, in spite of the different structure of Dŵr Cymru, there was no more trust in water companies among participants in Wales than participants in England. The following key differences were found between future and current customers:

- Future customers were less likely to suggest water companies should focus their strongest efforts on their core business or central remit.
- They were, conversely, almost universally likely to suggest that companies' strongest focus should be on the combined issues of global warming / climate change; and the decline or extinction of plant and animal life.
- Almost all future customers were in favour of paying for action on all, rather than only some, environmental issues.

9.4 Overarching themes

When thinking about management of the water environment, there were several key overarching themes that were mentioned throughout the forum and in the focus groups.

- **Fairness** was a key issue underlying views about paying for environmental improvements. The principle of 'polluter pays' was an important aspect of fairness. On other discussions around fairness, views differed about exactly what it meant. For instance, on the one hand it was seen as fairer for local people to pay for local issues because they would benefit from having them resolved; while on the other hand it was seen as fairer for all to share the cost nationally.
- **Affordability** was a concern. If bills increased, participants pointed out this could mean that they or others might struggle to pay. Alongside issues of affordability, there was also a feeling that bill increases should be 'reasonable' and justifiable. There was some reassurance given when information was provided about Ofwat and about water company schemes to help those on benefits or low incomes.
- **Trust** was an undercurrent which ran throughout the discussions. Customers generally accepted water company involvement in managing the water environment and were willing to pay for improvements to the water environment but they had concerns.
  - For instance, they worried that water companies would cut corners because of an emphasis on profit, or they would divert funds raised for environmental improvements into high salaries or paying shareholders.
  - Transparency, monitoring and regulation would help to address these concerns.
  - It is noteworthy that there was also some distrust of government as well as of water companies; and there was distrust of large companies in general, not water companies in particular.
- **Protecting essential services** was important to all participants. Some worried that improvements to the water environment might be made at the expense of essential services and made clear that this would not be acceptable to them. However, others believed that improvements were necessary to *protect* essential services, but not everyone made this connection.

'Citizens' and 'customer' perspectives were not clear-cut but overlapped/co-existed. For instance, when thinking about bills (a 'customer' issue), participants were often concerned about affordability for other people on low incomes, rather than for themselves. Conversely when arguing for the need to share the cost of local problems nationally (a 'citizen' perspective), they were sometimes thinking that this would protect

services that they would use or would keep bills lower for them in the long term (a 'customer' perspective).

9.5   Lessons for future research exercises

How to ask about options for and willingness to pay for environmental improvements

Water companies and others may wish to consider the following learning points from this research:

1. Engage & make the issues concrete - Ask people to spend some time thinking and describing their use of water environments, day-to-day or occasional. While this engagement might make a difference to responses that follow, it is essential to ensure the engagement needed for deliberative research. Any bias can be addressed through careful reality checking (see below).
2. Ask uninformed views - This serves three purposes. First, it provides insight into uninformed views. Second, it provides useful context for the rest of the discussion. Thirdly, starting to think about the issues makes people more interested in and receptive to the information that follows.
3. Present information about the options - Make the information short, simple and engaging – so that people pay attention, understand and remember key points for the discussion that follows. Concrete examples (stories) make the information real and tangible for people. Short animations or videos are more engaging than written information.
4. Explore views - This is the meat of the research, that the three previous stages have led up to. Views were often nuanced and complex, allowing people to explore the views of others and respond to differing viewpoints was an important part of the process.

There are also implications for water companies' future research activities, particularly when engaging 'uninformed' customers about their willingness to pay. This research suggests that, once informed about environmental issues and water company activities in this area, participants prioritise environmental action relatively highly. However, the effect of informing customers about environmental activities would need testing in willingness to pay research where customers are equally informed about other aspects of services as well. Consideration needs to be given to how willingness to pay surveys can achieve this and whether the process set out above can be followed in some way in a survey in order to avoid downplaying environmental activity because of respondents' lack of knowledge. There are a number of points to bear in mind:

- People pay very little attention to water company communications so any information that water companies want customers to consider in the survey needs to be provided in the survey.
- The provision of information ideally needs to be slotted into the four-stage process outlined above because making the issues concrete and then asking for uninformed views makes people more receptive to information.

When and how to 'reality check'

- When immersed in a topic, participants might pay less attention to everyday demands on time, finances etc. This might make them more 'willing to pay' in theory and more interested in receiving information. So, it is important to reality-check willingness to pay and requests for information.
- It is best not to reality check in online forums as it can be difficult to do so sensitively. It would be better if possible to check in some other context. In this instance, we saved reality checking information from the forums until the online focus groups.
- It is important to ask sensitively. For instance:
  - Draw attention to differences and ask participants if they can explain the reason for them.
  - Remind participants about constraints they might not be thinking about and ask if they would make a difference to their views. e.g., 'So you've suggested that people should be given more information about this issue. When you are busy in your day to day lives, would you really want more information? Would you read it?'

Building on the research findings in future research

- Areas of broad consensus (Section 9.1) - There might be little need for further research on these issues, besides double checking that they still hold.
- Gaps in knowledge/experience (Section 9.2) - When providing information, it should focus on filling these gaps.
- Areas of debate/contention (Section 9.3) - Explore all possible views and reasons behind views.

9.6   Lesson for future engagement/communication

How to engage on water environment topics

Concrete practical examples, such as using sewage to heat greenhouses, were of considerable interest and also increased positive feelings about water companies taking action for social good. The examples that were particularly well received mentioned natural (including direct impact on wildlife), food, and issues that are generally feel good. However, the research did not set out to look at what examples were of most interest or generated most enthusiasm, so further research on this issue might be helpful.

Importantly participants did not know at the start of the research process that these actions were within water company remits. Therefore, some explanation might be needed, emphasising that water companies are well-placed to do this work and it will not distract from their core services. Also they were not aware of certain environmental problems. Therefore it might make sense to focus on the problems that they are already aware of and concerned about.

How to shift into citizen mindset

Participants seemed to take on a citizen mindset when they were asked to focus on water environments that they value and were shown (through the forum discussion) that many other people value them too. This suggests that people might be more receptive to calls

for individual action and more comfortable with bills covering environmental issues when engaged in this way.

Please note that while the above steps might make calls for individual action more acceptable, this does not necessarily mean that they will also make them more effective. Simply providing information about environmental matters does not tend to lead to behaviour change.

How to make calls to action more acceptable

Participants emphasised the need for collective action and sometimes felt that their individual action would be ineffective. Therefore, it will help to emphasise what others, including water companies, government, and other individuals, are doing.

This is likely to make calls for action more effective, as well as more acceptable, because normalising behaviours i.e., demonstrating that that environmental actions are widespread and widely supported, is in general more likely to lead to behaviour change.

How to make water bills covering environmental action more acceptable

It will help to provide reassurance on the following issues.

- **Fairness** – Participants argued strongly for the 'polluter pays' principle. Therefore reassure people that polluters will pay for problems they create i.e. customers will not have to cover the cost.
- **Affordability** – Participants worried that bills might become unaffordable for some. Therefore make sure that bills remain affordable by (i) keeping bill increases associated with environmental protection small, and (ii) ensuring that customers who might find bills unaffordable are protected.
- **Trust** – Participants felt more comfortable about possible bill increases for environmental improvements knowing that water company charges are regulated by Ofwat, and as long as there was some reassurance that any bill increases would be used as intended. Therefore make clear that regulators will be monitoring water companies and ensuring that funds raised for environmental improvements are properly spent; and make public information about the funds are being spent.
- **Protecting essential services** – Participants worried that environmental improvements might be made at the expense of essential services. Therefore make clear that covering the cost of environmental improvement will not mean compromising on core services i.e. supplying water and dealing with wastewater.
- **Water company expertise** i.e., the many and complex processes involved in protecting water environments, helped to justify bill increases for environmental improvements. This fits with the general principle identified in behavioural economics that perceived efforts justifies higher prices. Therefore explain this simply to customers.

How to engage with future customers

It is possible that engaging on environmental issues might be particularly effective for younger people. However, although the research found differences between future/younger customers and current/older customers in how much they prioritised environmental issues, we cannot tell whether this was because younger people have more interest in the environment or because not paying bills led to less emphasis on other issues. It will be important to check whether this age cohort continues to prioritise environmental issues once they start paying bills.

10. Appendices

10.1 Participant profile

Category		Target	Achieved
Gender	Male	28-32	30
	Female	28-32	32
Age group	18-34	15-20	24
	35-54	15-20	17
	55-74	15-20	16
	75+	5-10	5
Country	England	40-45	45
	Wales	15-20	17
Socio-economic group[25]	AB	At least 10	17
	C1C2	At least 20	25
	DE	At least 15	19
Ethnicity	White British	No more than 45	44
	Black, Asian, Mixed, White other (a mix of these)	At least 15	18
Household composition	Dependent children living in the home	15 min – 25 max	19
Working status	Employed (full, part time or self); including those on furlough	30-40	41
	Unemployed, student, retired, other	20-30	31
Location	Urban/suburban	At least 40	48
	Rural	At least 10	14
Water meter	Metered	At least 25	30
	Unmetered	At least 25	32
Bill-payer	Responsible (partly or fully) for water bill	40-45	44

[25] A - upper middle class (Higher managerial roles, administrative or professional); B - middle middle class (Intermediate managerial roles, administrative or professional); C1 - lower middle class (Supervisory or clerical and junior managerial roles, administrative or professional); C2 - skilled working class (Skilled manual workers); D - working class (Semi-skilled and unskilled manual workers); E - non working (State pensioners, casual and lowest grade workers, unemployed with state benefits only)

	Future customer (aged under 30 and never been a water company customer i.e. bill paid by parent or landlord	15-20	18
Vulnerable circumstances	With a disability or long-term condition	At least 5	10
	Living in poverty	At least 5	5
Environmental attitudes – thought about climate change	A lot/great deal	At least 20	25
	Some	At least 20	26
	Very little/not at all	At least 10	11

10.2 Agendas for the online forum and online groups

CCW Environment research agenda FIN

CCW Environment research online grou

10.3 Stimulus showing possible levels of action

	Basic (Level 1) Investing to the minimum level	Beyond the basic (Level 2) Investing more for the benefit of customers	Going further (Level 3) Investing more for the whole of society
Pollution of waters	Meeting basic legal water quality standards by acting such as reducing the number of pollution incidents.	Going beyond the legal requirement by spending more now, to help reduce the risk or severity of pollution incidents in the future. Work with key polluters to help them change their behaviour.	Through extensive investment, modernising the sewer system so that pollution incidents are very rare even when there is heavy rain. Work with polluters and potential future polluters to prevent pollution, even where this does not directly affect the water company's operations.
Carbon emissions	Meeting legal requirements, to reduce carbon emissions by e.g., reducing energy use and switching to more renewable energy sources.	Investing more now to reduce carbon emissions, sooner than the legal requirement.	Engaging with local communities to help customers (including other businesses) reduce their own carbon emissions.
Biodiversity	Help maintain and, where they are poor, improve biodiversity in areas of special interest (e.g., areas classified as Special Areas of Conservation and Special Protection Areas).	Help improve biodiversity in other areas of land owned or overseen by the water company, where this helps water company operations, by helping to keep the future costs of treating water low.	Help improve biodiversity in areas of land that are not within the company's area of responsibility and where there is no direct benefit for their customers (e.g. nightingales project).
Flooding	Do what is necessary to keep their operations running smoothly by protecting their water treatment works, sewage treatment works, pumping stations against flooding – to ensure that they can cope during extreme weather events.	Investing earlier to prevent or reduce the risk of possible future flooding to benefit their customers sooner.	Volunteer to undertake work that has no particular benefit for a company's operations, but which helps to reduce flooding for the wider community (e.g. leaky dams).
Managing water resources	Develop detailed plans (as required by law) to maintain adequate water supplies for the future.	Invest earlier to prevent leakage, install more smart meters and educate the public to use less water.	Invest even more extensively in leakage prevention. Lobby for water efficiency labelling on devices. Help develop more water efficient technology. Roll out smart meters to all customers and help them to reduce water usage.

10.4 Water company projects, given as examples.

The following example projects were shared in this animation: https://vimeo.com/512206887/e196d7cafe

Examples of what water companies are doing to **reduce pollution** and **protect wildlife:**

- Building more storage and pipes so that sewers are less likely to overflow.
- Improving sewage treatment works.
- Schemes where they work with farmers to help, encourage and support farmers to reduce pollution, including payments to farmers who agree to use less polluting pesticides and offering specialist advice on how to prevent soil erosion.
- One water company that had a handful of nightingales[26] around one of its reservoirs, worked with wildlife charities to tag and track the birds there and in the land nearby.
- Some water companies are finding ways to reduce the amount of rainwater that actually reaches the sewers by catching it and redirecting it away from the sewers or slowing down how long it takes to reach them e.g., strips of grass can be installed instead of pavements, so the water soaks through them.

Examples of what water companies are doing to **reduce carbon emissions** and **make good use of sewage waste**.

- One water company realised that about two fifths of their carbon emissions came from their vans, so they decided to trial electric vans.
- Turning sewage sludge into fuel – burning it to produce electricity to power sewage plants, meaning sewage plants are completely self-sufficient run using only electricity produced from the sewage that they process.
- One water company plans to share the heat from burning sewage sludge with two enormous greenhouses located in its area of operation.

Examples of what water companies are doing to **reduce the risk of water shortages** and flooding.

- Water companies are taking action to reduce water loss through leakage.
- Water companies are trying lots of different ways to spot leaks, such as drones that fly over large areas of rural land and sniffer dogs trained to find leaks.
- Water meters measure how much water people use, so they pay for the amount used. Ordinary meters are read maybe once a year. But with smart meters information about water use is available much more often. This can help to detect leaks, but it can also help people to track the amount of water they use, and maybe look at whether they can use any less.

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[26] The project was not identified to participants in detail, but was a reference to this work by Anglian Water   https://www.anglianwater.co.uk/in-the-community/protecting-our-environment/our-biodiversity-work/nightingale-project/

- Water companies are encouraging manufacturers and the government to put water-efficiency water labels on all bathroom fittings, like showers, taps and toilets.

Example of a water company acting to **reduce the risk of flooding**.

- Using natural flood management, for example, building a leaky dam, (visual shown to illustrate) to slow the flow of water, planting woodland and restoring peat bogs to help absorb water, as well as reducing the risk of flooding during times of heavy rainfall.

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