



Ricardo-AEA

Understanding the impacts of drought restrictions

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Ballinger

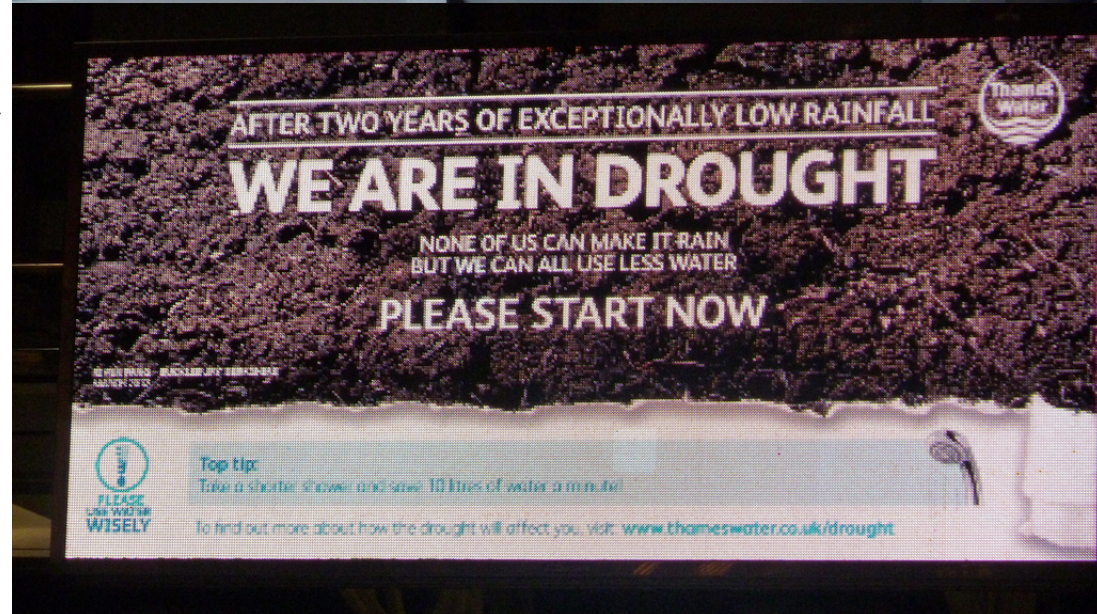
WATEF Water Efficiency Conference 2014

Background to 2012 Drought

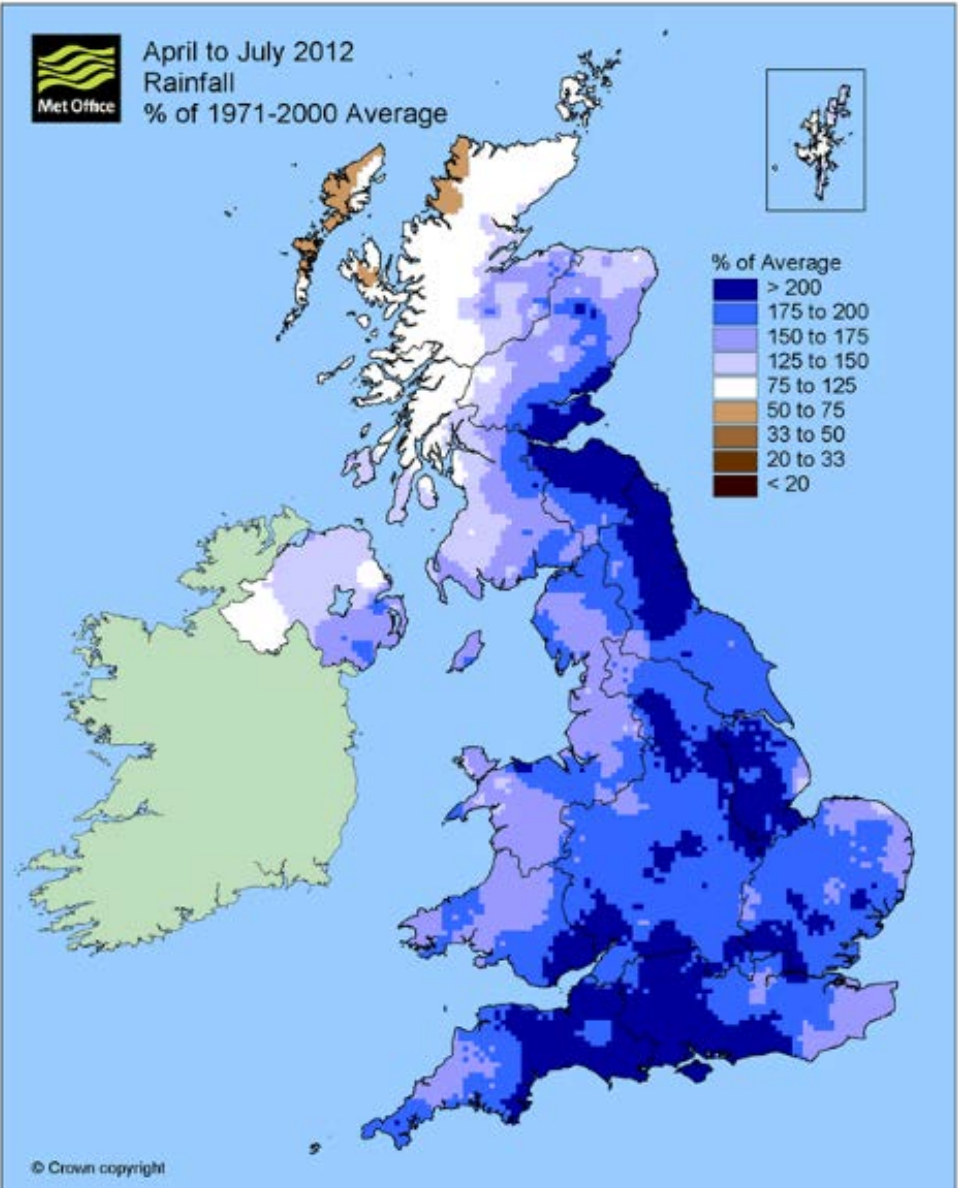
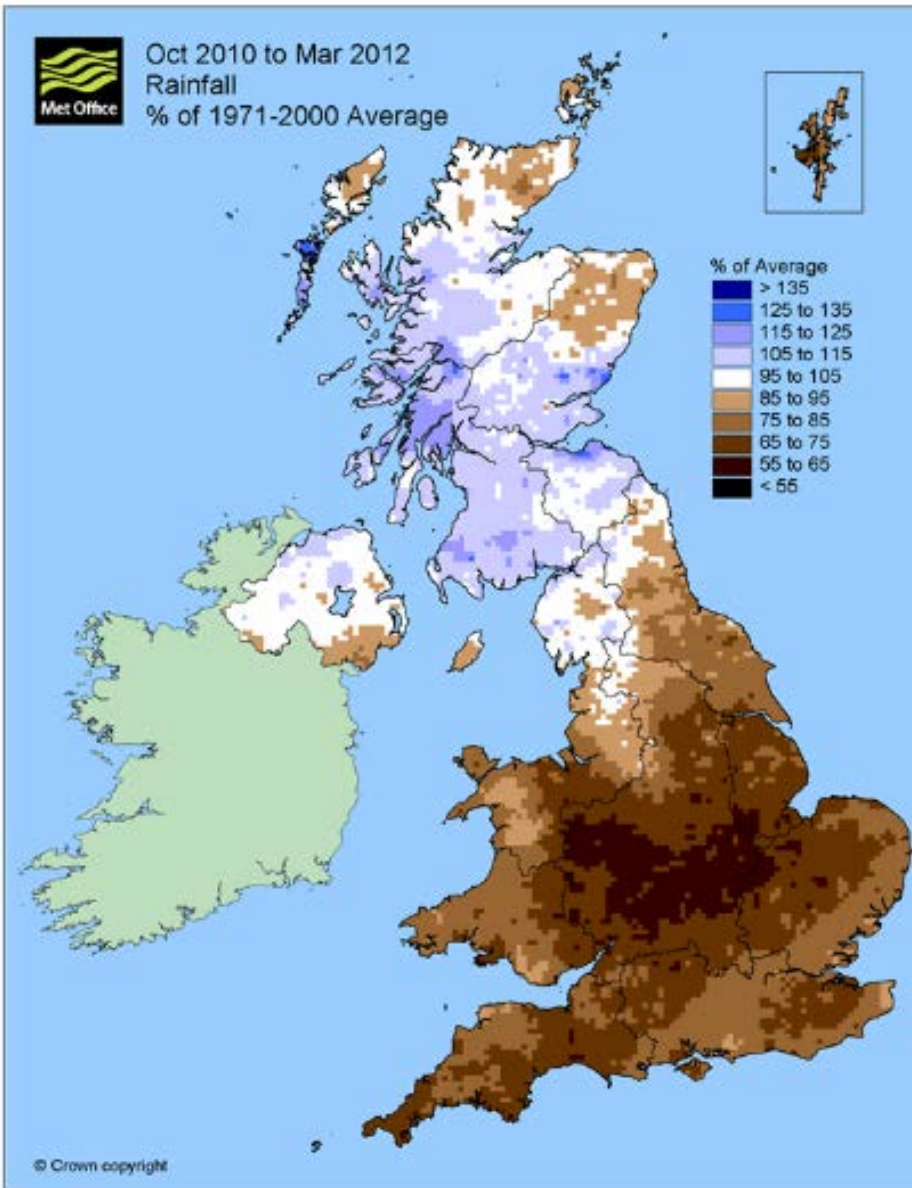
- Two dry winters (2010 and 2011)
- Reservoirs at lowest ever recorded

TUB restrictions in April 2012:

- 7 water companies affecting 20M customers
- First opportunity to implement wider range of TUB restrictions
- 11 TUB categories plus exceptions led to complicated messaging
- Limited assessment to date



A weird drought?



Aims & objectives of UKWIR research

Aims

- *Obtain a clear picture of the impact of TUBs on various customer groups*
- *Help fill the knowledge gap on impacts of TUBs and link to wider EA / Defra work*

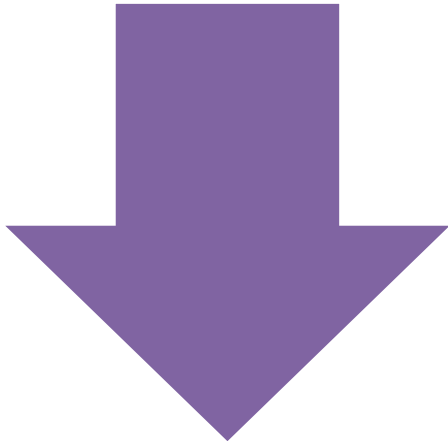
Objectives

- Impacts of restrictions by customer category
- Assess and quantify usage impacts
- Recommendations on collecting and sharing data in the future
- Assessing bounce back
- Avoid customer conflicts

Artesia
Consulting

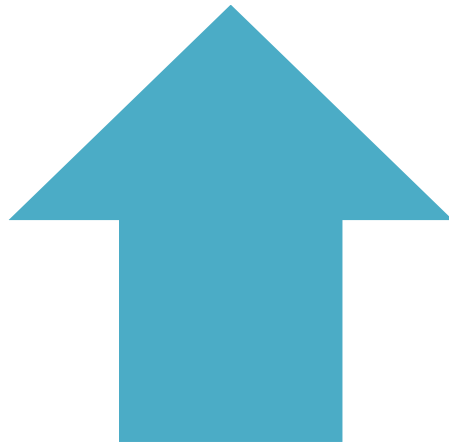
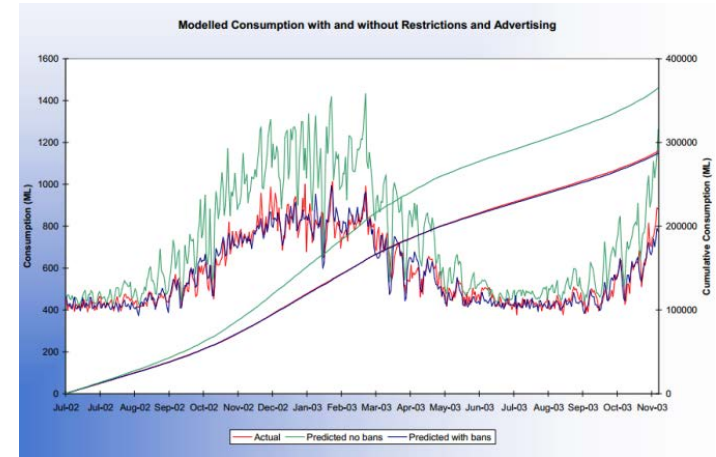


Comparison of approaches to assess restrictions



Top down approach

- Water into supply – leakage & statistical modelling to determine impacts of restrictions



Bottom-up approach

- Quantification of survey responses for volumes
- Property level metering



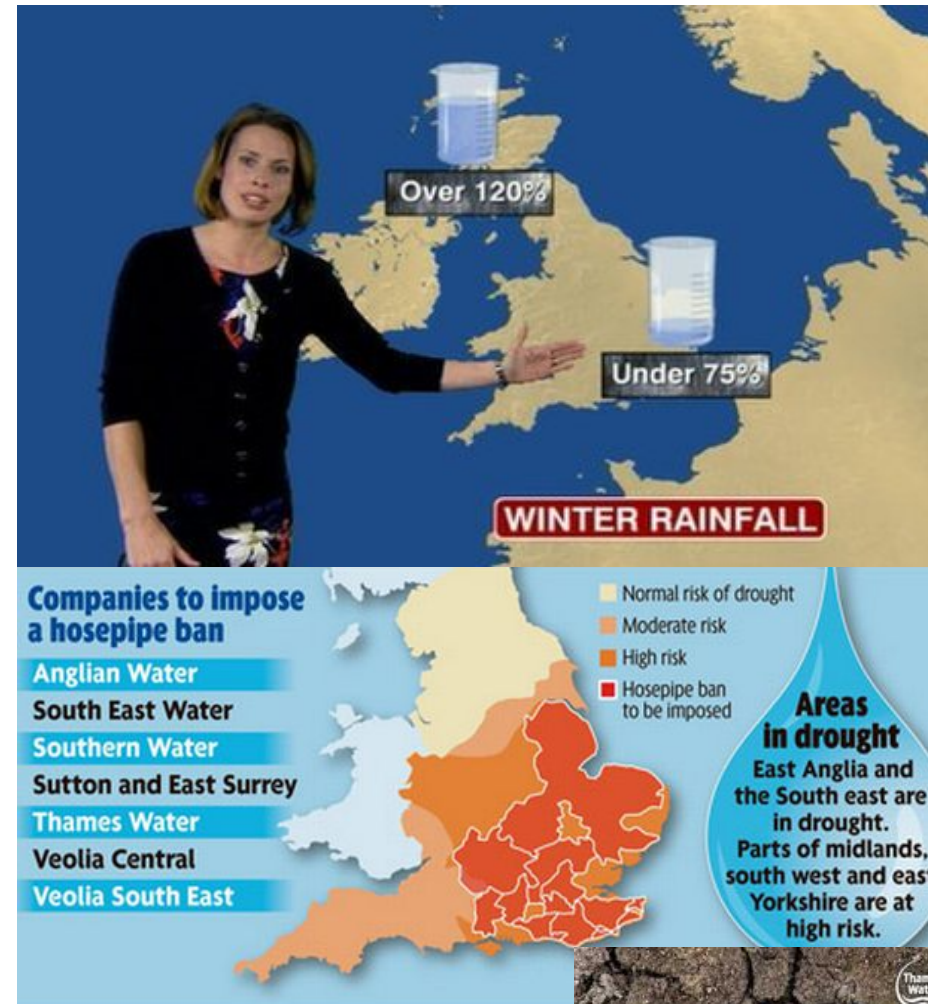
Communications

Task 1

carry out an analysis of communication mediums and messages used by water companies.

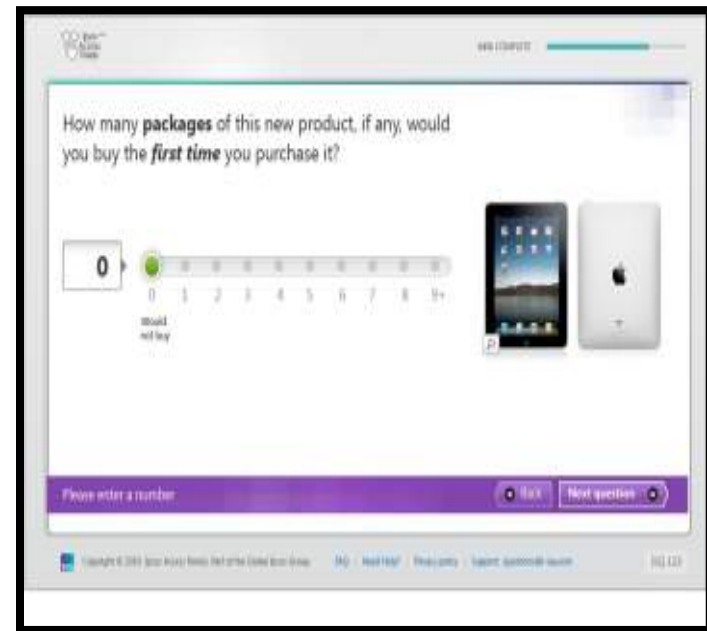
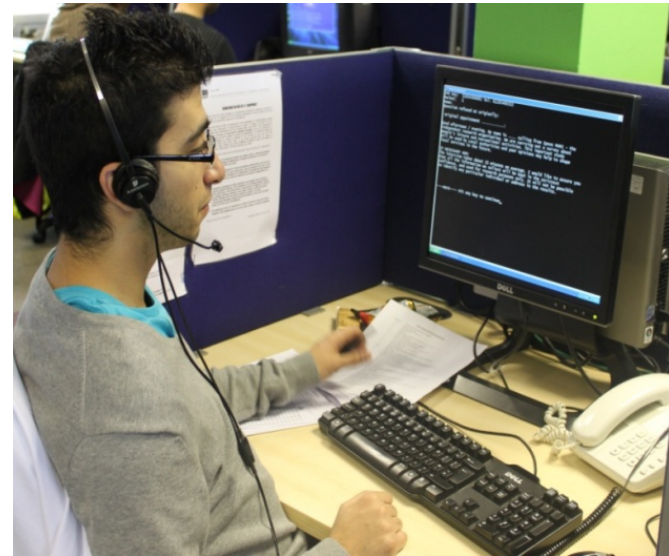
- Frequency of communications across 2012 was varied
- Significant increase in activity around the time of the TUB implementation
- Collated information on the range of strategies.

Visitors to the South East Water website doubled between March 2012 and April 2012!

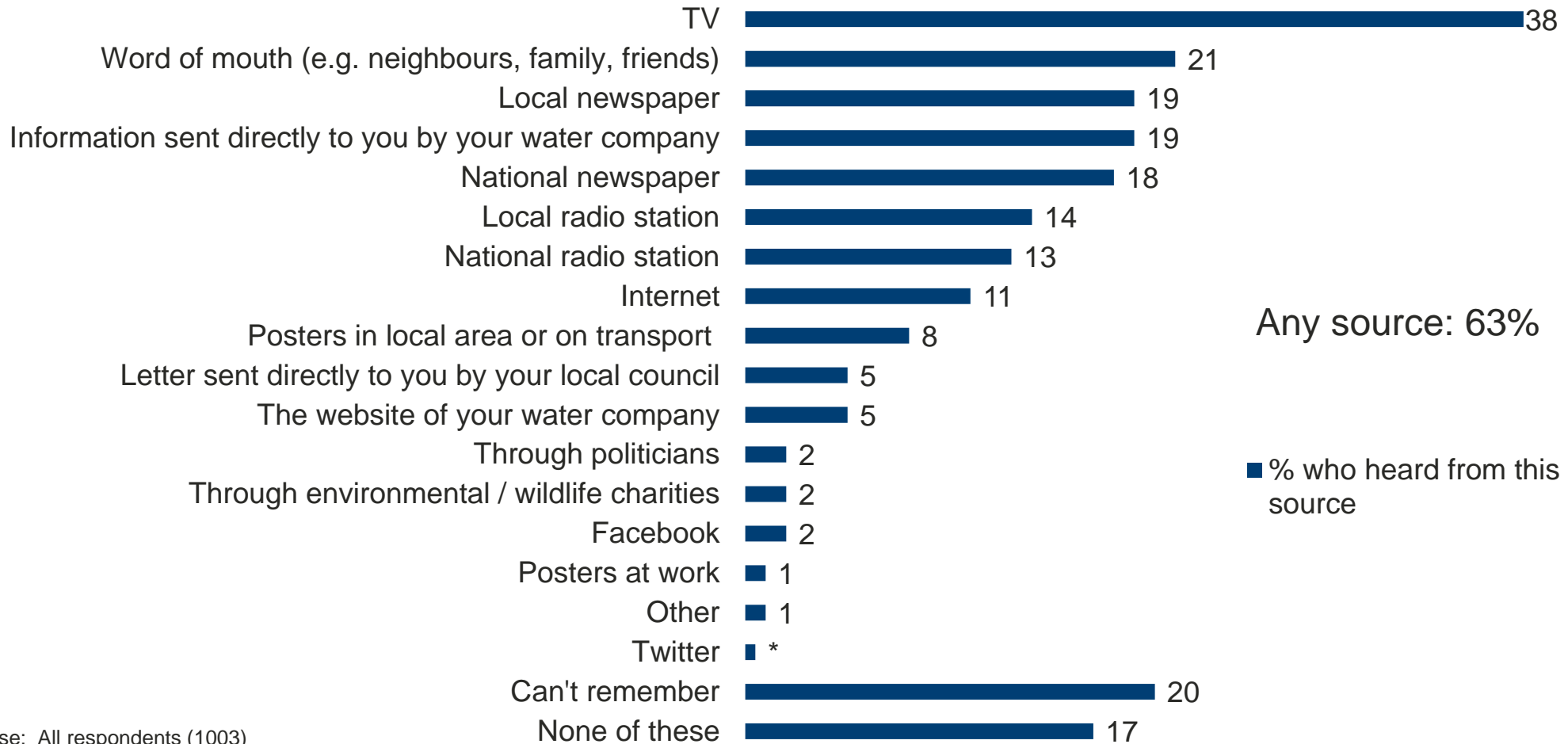


Stakeholder survey

- Conducted by Ipsos-MORI in summer 2013
- Thames Water, South East Water and Anglian Water chosen as proxy
- 300 telephone interviews were conducted with non-domestic customers across these water company areas; and
- 1,000 interviews with household customers via Ipsos online panel which provides a good demographic of customers.



Q17: In which, if any, of the following ways did you see or hear information about the 2012 drought or the hosepipe ban?



Base: All respondents (1003)

Interviewed online from 26 July 2013 to 7 August 2013

Understanding of TUB restrictions

(non domestic shown below)

To what extent do you agree or disagree with the following statements about the 2012 hosepipe ban?



Q15: To what extent, if at all, did the frequency with which you use a mobile car valeter/ window cleaner/ gardener change during when the hosepipe ban was in place in 2012?

- % Increased a lot
- % Increased a little
- % Stayed about the same
- % Decreased a little
- % Decreased a lot
- % Don't know



Data analysis

To complement and further explore the findings of the survey, data analysis was carried out on a number of sources including:

- Total metered consumption for smart meter datasets in Thames, South East and Anglian regions
- Identification and analysis of high flow events thought to be linked to hosepipe use in Thames and Anglian Water regions
- Analysis of non-domestic meter data provided by Thames Water
- Quantification of survey data – based on microcomponents for all of the three proxy regions.



Example for London Water Resources Zone

ample with four 15 minute periods of flow > 480 l/hr between 6pm and 11pm (GMT)



Principle 1: Ensure a consistent and transparent approach

- Water companies worked well together, but messaging could be firmed up
- Standardise data collection (e.g. SIC codes)

Principle 2: Ensure that water use restrictions are proportionate

- Interpretations of restricted activities were not always consistent

Principle 3: Communicate clearly with customers and the wider public/users

- 16 – 24 year olds are a key stakeholder group
- Low awareness among cleaning / sanitary sectors
- Water company messaging linked with improved behaviour change and awareness
- Television seen as main information source

Principle 4: Consider representations in a fair way

- Customer queries and responses should be better shared across companies in future

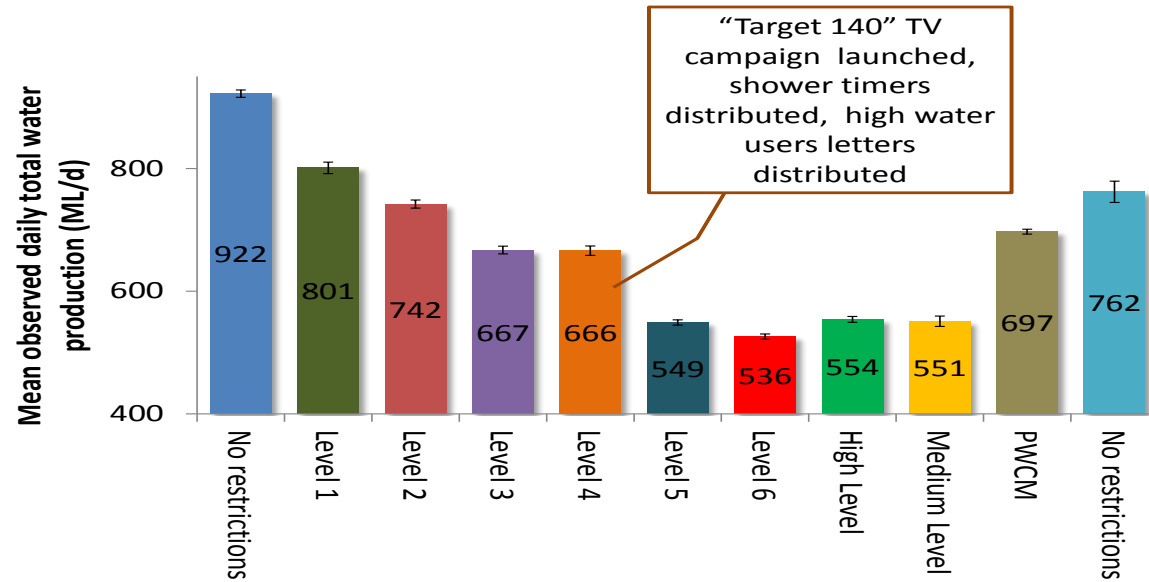
Australian comparison and considering bounce-back

A bottom-up metering analysis has been undertaken in the State of Queensland:

- Restrictions removed following flooding
- Less media coverage
- Bounce-back in demand observed

Bounce-back not seen to the same extent in Melbourne, Sydney and South Australia following relaxation of watering restrictions:

- Imposition of water wise rules (low level restrictions)
- Penetration of water efficient appliances
- Socialised behaviour change



Conclusions and further research

- TUBs appear to have reduced consumption
- Bottom-up analysis provides further detail on individual measures, how these were understood by customers, and potential impacts on business
- Recommendation to inform drought and water resources planning
- Further research
 - Longer running end use analysis to observe changes in wider water use during TUB periods and linked to communication/ behaviour change programmes
 - Apply statistical approaches to account for rainfall to bottom-up meter data
 - Permanent water efficiency measures
 - Water sensitive cities and communities – how can we address flood risk and drought over the long term?

Thank You

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