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Water Demand Management in England and Wales: constructions of the domestic water-user

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Domestic Water Demand Management in England and Wales: constructions of the domestic water-user

Abstract

Measures to manage demand include implicit and explicit messages about domestic water-users which have important potential impacts on their perceptions and practices. Drawing on recent literature, this paper identifies three different 'dimensions' along which demand management measures' constructions of the water-user may vary: these relate to whether the water user is passive or active, whether they are motivated by individual or common needs, and whether they perceive water as a right or a commodity. Demand management measures currently used in England and Wales are then discussed and analysed. The paper concludes by highlighting the importance of communications associated with demand management, and in particular, notes the need to consider the cumulative impact of messages and their interactions with people's existing understandings.

1. Introduction

Even in the stereotypically wet countries of England and Wales, water demand management has been a subject of increasing attention over recent years (for example, Environment Agency, 2001; OFWAT 2001; DEFRA 2002; IPPR, 2005). Growing concentrations of increasingly water-hungry populations, combined with predictions of climate change, have brought fears of a looming water crises, and a re-examination of some assumptions about water availability and provision. Following somewhat behind 'water scarce' countries such as Australia, English and Welsh water companies and government have begun to take steps to implement demand management. With over 40% of abstracted water used to meet domestic demand (EA, 2001), the domestic household seems an appropriate focus for some of these steps.

Jeffrey and Greary provide a useful review of academic contributions to the management of domestic demand (2005). They catalogue multiple studies which provide evidence about how different factors influence water demand – for example, they show that household size and number of children and young people in a household provide an influence on the level of water demand. They go on to assess the effectiveness of different water conservation measures including economic and regulatory instruments, the provision of new technology, and education.

While the studies reviewed by Jeffrey and Greary have much to contribute to guiding demand management, they can be criticised in three important ways. First, the studies are individualistic in their focus. In particular, consumption of water is posited as a matter of individual household choice, with public behavioural responses to a particular instrument or technology presented as dependent variables, (related to age, gender, education, etcetera), with unexplained variations attributed to ‘social context’ (Southerton, Chappells and Van Vliet, 2004). Second, this focus on quantities of water used by households obscures the perceptions of the individuals involved, who may give little thought to their total water use, but instead think about the practices (e.g. showering, clothes washing) through which water is consumed (Shove, 2003). Finally, the policy-makers’ process of demand management is presented as a matter of choice between different instruments which influence consumers’ decisions, ignoring the important and complex relationships between the consumers and producers of water. Thus the studies presented in Jeffrey and Greary frame the policy-makers’ choice as whether to have demand management and what measures to have, rather than how to develop a culture in which demand is managed.

Spaargaren has been one of a number of theorists pioneering a perspective on sustainable consumption that requires a move away from a focus on merely the individual consumer and their decisions (Spaargaren and Van Vliet, 2000; Spaargaren, 2004). Drawn from the sociology of technology tradition, his ‘social practices model’ suggests that consumers’ practices arise from a combination of their lifestyle preferences and the systems of provision available to them. Practices are the specific activities carried out by the individual consumer, for example, car washing, and food preparation. According to this approach, it is the nature and extent of these practices which should be the focus of water demand management efforts. Of the two sets of factors influencing these practices, lifestyle preferences are recognised as affected by social norms, and the practical time-space possibilities available to the individual. In contrast, the systems of provision are constrained by the

rules about provision, and the 'path dependency' created by the existing infrastructure (Spaargaren, 2004). For example, showering is made possible through systems of provision such as water and electricity in the home, as well as the increasing availability of sophisticated shower technology, over which the individual consumer has no active control. The rise in the popularity of showering, however, requires additional consideration given to changing lifestyle norms about cleanliness, as well as the perceived speed and convenience of showering over bathing which it has partly replaced (Southerton, Warde and Hand, 2004).

Spaagaren and the social practices theorists provide an important alternative way to understand public resource consumption as mediated by practices. Here, my aim is to extend the social practices model beyond the explanation of 'consumption', in order to theorise about different demand management policies. In particular, I am interested in the way demand management policies involve assumptions about the domestic consumer (or 'water-user') which form implicit and explicit messages in any communications about the policy.

Any given demand management measures – for example, a price increase – implies a particular understanding of the water-user – in this case, that the water-user is a purchaser of water and that he or she will react to the price increase through reduced use. Moreover, the way the price increase is discussed in the media and presented in communications from government and from the water service provider will also imply and thus re-produce assumptions about the water-user as a water purchaser. Such messages are important because water-users are not passive recipients of messages; at both a conscious and unconscious level they will react to messages they receive. Water-users' reactions to a particular message will be complex, depending on their particular understandings and personal context. For example, the idea that the water-user is a purchaser of water emphasises their independent choices over how much water they use, and when and how they use it. Some water-users may react to this message exactly as demand managers expect, and reduce their demand accordingly. Some, however, may feel frustrated by the implication that they can choose to use less water when they may not perceive themselves as having any choice to use less, as all their current uses they may consider essential. Others might also feel frustrated by the message because they perceive water as commonly owned and not for purchase. Yet others might embrace the idea of water as a commodity and purchase high-water use prestige goods like a Jacuzzi which becomes a symbol of their wealth. Whichever their specific reaction, each demand management measure communicated

will leave a legacy of understanding which will be present as and when further demand management measures are introduced. The key argument is therefore that these implicit and explicit messages are important. When combined, the messages from different demand management measures will create a culture which could facilitate or hinder the effectiveness of subsequent measures.

The aim of this paper, therefore, is to look at the package of demand management measures used in England and Wales at present and to unpack what specific messages are being communicated to people using water in domestic settings. The academic contribution is the development of a framework through which the messages associated with different demand management measures can be classified. Through unpacking the communicative work of demand management policies, I also hope to open up the possibility of alternative measures to aid the management of demand in the future.

Constructing the water-user

What possible assumptions could demand management measures make about the water-user? This section draws on the literature to highlight three different ways in which the assumptions about the water-user made by different demand management measures could vary.

First, demand management measures seek to influence practices in the two different ways identified from the social practices model by Spaargaren and Van Vliet discussed above (2000). Some interventions are directly intended to (try to) influence the lifestyle norms around water use practices – these types of intervention seek to recruit the water-user as an active participant who consciously and purposively undertakes new or changed practices to reduce the demand for potable water (Guy, Marvin and Moss, 2001). For example, requesting citizens to take shorter showers is asking them to take an active role in reducing their water use. Similarly, specific technologies, for example, the provision of rainwater tanks for toilet flushing, require active choice and maintenance by the consumer. In contrast, some measures influence the systems of provision, and thus change the amount of water used by a particular practice without changing the users' choices in relation to that practice. A smaller toilet cistern, or a reduction in pressure, for example, will reduce water usage with relatively little impact on consumer practices. Likewise, encouraging the manufacture of water efficient washing machines requires little change in consumers' daily practices (though it may require a one-off change

in behaviour when making a purchasing decision). These latter interventions can be seen as positioning the consumer as a more passive recipient of water services.

A second dimension in which assumptions about the water-user varies arises from Strang's ethnographic research with people living in the basin of the UK's River Stour (2004). She takes a normative perspective arguing that people want to manage water communally:

'Water is still central – literally and metaphorically – to ideas about individual being and identity, social inclusion and concepts of 'community', rights to health and wealth, and access to power, agency and life itself' (248)

An example of water demand management interventions which are aimed at influencing communal consumption is the provision of local reservoir levels as part of weather forecasts. The contrast with this perspective is the idea that water is consumed and managed individually – as implied by the metering of an individual household. Strang argues that people's continuing idea that water *should be* a communal resource means that they react negatively to others' appropriation and 'ownership' of it as a commodity which they have to consume individually:

'a large proportion of people are abidingly unhappy about their loss of collective control over water resources' (251-2)

A third dimension along which assumptions about the water-user may vary can be identified from Bakker's work on the privatisation of the UK water industry.

'Commercialisation implied the re-scripting of consumers as customers rather than citizens, a deliberate de-politicisation of water regulation through the creation of arms length regulators, and a shift from social equity to economic equity in water pricing, and hence consideration of willingness but not ability to pay' (Bakker, 2003: 371)

As a citizen, therefore, the water-user had a right to water, to which they should make a contribution according to their ability to pay (which in the UK was calculated according the value of their property). As a customer, water-users can buy different quantities of the commodity, water, according to their willingness to pay. Page warns us, however, against seeing this transformation as 'singular, momentous, irreversible and universal', (Page, 2005: 295) highlighting how the history of water

provision in particular localities has seen continual shifts and gradations between more commercial and political ways of seeing water.

These three dimensions of the water-user are represented in Figure I. It should be stressed that the dimensions are continuums rather than dualities. Moreover, the different poles of any one dimension are not mutually exclusive. For example, water-users may be portrayed as both customers and citizens in relation to water at the same time, and perhaps even by the same initiative.

The above discussion raises two questions which will be explored through this paper. First how do the dimensions help to understand and interpret the messages conveyed by current demand management measures in England and Wales? Second, how do the dimensions relate? In particular, is there a pattern where particular types of initiatives are associated with 'extreme positions' along two or more dimensions?

Method

The discussion below focuses on the four principal sets of demand management measures used in England and Wales, these are: Planning and Building regulations; Regulation of Water Companies; Water Metering; and Water Efficiency. Information sources in relation to each set of demand management measures vary, and include Government documents, company documents and company web sites. Table I summarises the main information source in relation to each set of demand management measures considered.

The systematic analysis of all water company web sites involved accessing the web sites, copying the text available on the required subject into a table, and subsequent analysis by themes. The programme of research described was iterative, starting with the water efficiency research during 2004. The initial research design of this research in 2004 followed a dual track approach in which analysis of web sites was conducted alongside analysis of paper information. Difficulties in obtaining paper information, alongside assurances from some water companies that the material on the web was similar if not identical in content to their paper information, led us to concentrate just on the web analysis. The subsequent analysis of the promotion of metering therefore drew exclusively on web data.

2. Measures to manage domestic demand in England and Wales

Influencing demand through planning and building regulations

The location of new homes is a crucial driver of future domestic water demand. Broad brush development decisions are made by the Government on the basis of anticipated housing need, and translated into regional spatial strategies. Current planning guidance requires that the Environment Agency is consulted about such strategies. It also indicates that the environment, and the capacity of existing infrastructure – including water infrastructure – are valid ‘material considerations’ in the formation of such plans, (ODPM, 2000: Paragraph 5). Of course, the precise interpretation and balance between these and other material considerations such as economic growth and housing need will depend on the strength through which competing arguments are made, and the interpretations and decisions of Government planning inspectors. Similar considerations are required at a local level when planning authorities making decisions about Local Development Frameworks. Recent controversy about the water demands of the proposed developments in the Thames Gateway certainly suggest that water supply capacity has had limited input into development decisions. Overall, it appears that while there is space to include issues about water supply in planning decisions, the system has not worked to this effect in the past.

Apart from restricting the extent of development, further impact on domestic water demand can be achieved through ensuring the efficient use of water in household appliances. Since 1999 the Water Supply (Water Fittings) Regulations have reduced the maximum amounts of water used in new washing machines and toilets (Stationary Office, 1999). While useful, these requirements have no impact on showers, another significant and growing use of water. Moreover, they do not address the increased use of appliances, which also adds significantly to the growth in demand (Shove, 2003). Finally, that there is currently no provision for appliances to be rated in terms of their water efficiency.

An attempt to embed stricter requirements in terms of water fittings and fixtures for new housing is the recent provision in the Sustainable and Secure Buildings Act for minimum sustainability requirements to be included in UK Building Regulations. Alongside this, the Government are developing a ‘Code for Sustainable Building’ (CSB) (ODPM, DTI, DEFRA, 2004), which will enable new buildings to be rated according to the extent to which they include sustainable features such as energy and water efficiency.

The minimum level of the CSB will be the required level of energy and water efficiency in building regulations, and the latter will be 'ratcheted up' through time such that successively higher levels of the CSB will be the building regulations in the future (ODPM, 2005). These plans enable 'certainty' to be introduced for the building industry, while also ensuring improved standards through time. However, the standardised nature of the proposed code leaves little room for local shortages – such as water – to be taken into account. Moreover, because these requirements apply to new buildings only, it will take many years for them to have an appreciable affect on overall water use.

Balancing supply with demand through regulation of water companies

Water companies' supply is guaranteed in terms of licenses they hold from the Environment Agency to abstract water from rivers and aquifers. A river quality grading system indicates which ecosystems are considered vulnerable and are unavailable for further abstraction. In certain locations, therefore, the future availability of further water supplies is very restricted. It follows that, unless demand is managed, future water supplies are going to be transported over longer distances, at considerable financial and environmental cost.

The medium term balance of supply and demand is achieved through the interaction between water companies and the regulators. The Environment Agency's main concern is with the quality of the environment – defined in terms of the extent to which the defined water quality objectives can be met. Their judgement over the quality of a river or aquifer from which a water company wishes to extract will influence their willingness to grant new licences. In contrast, OFWAT's remit is to look after the interests of the customer through imposing a competitive framework to compare the performance of water companies in different areas. OFWAT generally expects companies to achieve a standard of 'security of supply' which does not impose a hosepipe ban in any area more than once every ten years (OFWAT, 2004a). Every five years companies prepare resource plans which include anticipated demand, demand management measures to be used, and resources to be accessed. The regulators judge whether the demand management measures are sufficient before they offer permission (in terms of prices or access) to develop new resources. For example, OFWAT explain that, 'costs of developing new supplies will only be included in price limits where we are satisfied that leakage is at an economic level and demand is properly managed' (2004a: 1). Similarly, in their environmental regulatory role, the Environment Agency's assessment of water company plans in 2004 commented

