



Prof Anna Davies and Ruth Doyle
CONSENSUS
Department of Geography
Museum Building
Trinity College Dublin
Dublin 2

06/02/2012

Email: daviesa@tcd.ie and rdoyle4@tcd.ie

Re: Reform of the water sector in Ireland: Position Paper: January 2012

CONSENSUS is a research project examining household sustainable consumption funded by the EPA STRIVE fund to examine policies and practices related to mobility, home heating, personal washing and eating across Ireland both North (NI) and South (ROI). The research focusing on household washing practices is particularly relevant to issues raised by the 'Reform of the water sector in Ireland' Position Paper as it directly engages with the central matter of household water consumption. CONSENSUS therefore welcomes the opportunity to engage with the Water Services Section to help shape the water provision and consumption environment in Ireland in the future.

In our response to the Position Paper detailed below we urge the Water Services Section to engage with our research findings in order to maximize the potential to establish a framework for sustainable water provision and consumption. In particular we direct the Section to the Transition Framework attached to this response and also to the consensus website (www.consensus.ie) that contains all research outputs from the project to date. We also encourage the Water Services Section to engage directly with the research team where necessary to flesh out any of the points summarized below. The remainder of this response identifies key areas for the Water Services Section to consider in its proposals for reforming the sector.

Demand side management and integrated resource planning

CONSENSUS believes that the establishment of Irish Water provides a unique opportunity to herald a new era of positive and sustainable water management in Ireland; one which can build upon emerging best practice within water services globally by merging supply side with demand side considerations. However CONSENSUS is concerned that this opportunity will not be fully grasped if the proposed reforms incorporated within the Position Paper are implemented without sufficient attention to crucial issues of demand management. Nowhere in the Position Paper is mention made of 'demand management', neither is there much reference to end-users of water in Ireland (including their different consumption demands and patterns of use). Water Demand Management (WDM) advocates the implementation of strategies to manage and reduce demand of water amongst end-users. Such strategies may include; educational initiatives retrofit programmes implementing water saving devices, financial supports for water efficient technologies and regulatory regimes that promote water reuse and recycling. **We therefore call for Water Demand Management (WDM) to be made an official priority of Irish Water with financial budget allocations made within the 'operational budget' of the organisation.**

In addition, long-term demand reduction targets should be set for each end-use sector in Ireland. Progress towards these consumption targets should be measured and monitored. The EU is currently developing long-term water efficiency targets as part of their 'Blueprint' policy for the EU 2020 Resource Efficiency Roadmap¹. These targets will be at sectoral and basin level. This focus on water efficiency targets should include WDM measures and would require baseline research on national water use practices, motivations, drivers and shifts over time, and further in-depth studies and pilots on the effectiveness of various WDM interventions. Foundational research has already been conducted in this area by the CONSENSUS team as part of an all-island lifestyle survey (contact Dr. Frances Fahy²) and through a process of participatory backcasting (see attached Transition Framework document and the CONSENSUS website³). Ultimately demand management has a significant role to play in sustainable water management under conditions of climate change and predicted population growth. Exploration of both hard (infrastructural) and soft measures (including education for low water consumption in the home) is essential.

¹ http://ec.europa.eu/environment/water/blueprint/index_en.htm

² Frances.fahy@nuigalway.ie. See: Lavelle, M.J., Davies, A., Fahy, F. & Doyle, R. (2012). Consensus Lifestyle Survey – Report on public attitudes and behaviours towards sustainable consumption and sustainable lifestyles in Ireland: (6) Water consumption. National University of Ireland, Galway. (available at www.consensus.ie/publications.html).

³ <http://www.consensus.ie>

Soft path water management (see: Appendix 1)

Soft path water management represents a holistic approach to overall water management integrating wastewater treatment, water supply and water demand measures. It prioritises the improvement of the productivity of water use rather than seeking expansion in supply, with the aim of freeing up water by reducing water waste. In this sense, the use of water is framed in terms of serving various needs. The aim is to determine socio-technical innovations that appropriately fulfill end use requirements. As such the use of differential water qualities appropriate to needs is central to this approach. For example, drinking water quality is not required for gardening where greywater would suffice. Equally the quality of water for toilet flushing need not be as high as for personal washing. At present, the water services strategy in Ireland has shown a preference for capital-intensive infrastructure projects. A soft-path planning approach advocates long term planning for demand reduction and reduced abstraction thereby lessening environmental impacts. It also requires respect for local ecological limits and area-based water planning merging centralized and decentralized methods of provision and wastewater treatment. Such an approach links with green infrastructure measures such as ecological landscaping and natural drainage systems.

Water pricing and citizen engagement

Consensus welcomes the introduction of water charges on a metered, pay-by-use scale providing that such charges only come into force after a basic minimum quantity (as established by evidence-based per capita needs for safe daily drinking, teeth cleaning, food preparation etc) is provided for free as a universal human right. It is essential that this metering is coupled with strategies that enable householders to appropriately control and reduce their usage to avoid high costs. While price incentives may contribute to an initial (positive in terms of water consumption) change in behavior, multifaceted and sustained strategies that go beyond financial drivers are required to maintain such changes and build understanding on the value of water and need for charging. Equally it is clear that the impact of water pricing will be felt differentially across sectors of society and it cannot be assumed that simply applying a fixed financial cost to volumes of water will generate a similar behavior change across Ireland.

The introduction of water charges should therefore be accompanied by an active educational and communications strategy with finance available to support water efficiency improvements in households. Providing information (i.e. campaigns such as Tap Tips) is

important, but alone it is insufficient to ensure that behaviour is changed significantly and permanently. Adopting an information-deficit model, as has been the case in many national environmental strategies, as the sole driver of behavior change has been shown to be limited in impact both in terms of the extent of that impact and its duration. This is not assisted by the fact that the Position Paper only mentions citizens in terms of ‘customers’ reducing the engagement of Irish Water with the public to ‘marketing and communications’ and ‘customer service’. Framing the population in this way may lead to fears about privatization of water resources and will not encourage them to participate in the collective endeavour of sustainable water consumption. Irish Water should aim to be progressive in its engagement with citizens building on successes made through incentive and reward schemes such as Tidy Towns and through experiential educational interventions such as Eco-Teams and Green Schools. It would be useful to look at the experience and activities of WaterWise⁴ in the UK. For example, they provided an evidence base for large scale water efficiency in homes in 2010 stating that “savings of up to 34 litres per property per day are possible from applying a multi-measure water efficiency retrofitting method in the traditional way, using current technology and means of engaging customers to encourage behavior change”⁵. The costs of retrofitting range from £41 to £240 per property.

It is essential for Irish Water, in conjunction with researchers and private sector partners, to support more direct interventions to assist householders in overcoming inefficient water-use practices. This could take the form of self-installable low flow showerheads and taps, Hippos, or shower timers and water pebbles. At minimum there is a tripartite structure required here: (1) provide affordable and accessible infrastructure for people to change behavior (2) provide evidence clearly outlining why such a change in behaviour is sound from an environmental, economic and societal perspective (3) ensure practical, hands-on guidance ensuring that householders know how to best use the supporting infrastructure (for example, Eco-teams or local groups could be enlisted in their installation).

Water metering

Water meters and the associated supporting infrastructure (outlined above) should be rolled out in the most water stressed locations first. The demonstration effects provided in these early phases can build additional societal support for change. Equally consideration should

⁴ <http://www.waterwise.org.uk>

⁵ WaterWise (2010), ‘Evidence Base for Large Scale Water Efficiency: Phase II, Interim Report’ pg 14

be given to variable water pricing to reflect weather fluctuations and national water availability, perhaps on a seasonal basis. Such a scheme would have to be accompanied by appropriate systems to enable householders to view fluctuating rates. Information could easily be incorporated into weather forecasts on national media in the same way that UV levels or pollen counts have been incorporated in recent decades. With respect to the estimated reductions in water consumption following water metering we urge the Water Services Section to acknowledge the range of estimations that exist. For example, WaterWise and the Environment Agency (2008) in the UK state the average reduction is 10%⁶ while the 'reform of the water sector in Ireland' Position Paper references the Walker Report's figure of 16% reduction in household demand. Overestimating predicted impact could lead to disaffection amongst the public if reductions are not forthcoming.

There should be clear plans for Irish Water to allow users to actively control and monitor their water usage through the development and implementation of a 'smart water meter' device⁷. Such devices should enable users to identify the major source of their water use through 'informative billing' perhaps including comparisons with similar households or even an indicative 'smart water house' of similar size and occupancy stimulating benchmarking and providing support to achieve better water consumption practices. These bills should also be used to identify and support the most vulnerable. Across England and Wales 14.8% of households are in water poverty⁸

Joined-up thinking

(i) Water Performance of Buildings (WPB), design regulations and water labeling

In addition to water provision and consumption Irish Water must provide, or work with other institutions to provide improved water performance of buildings, design regulations and water labeling of devices. There are clear exemplars of similar strategies in the energy sphere which could be transposed to the water environment. Equally other countries and networks are already first-movers in this regard in the water environment. Examples here include Australia's Water Efficiency Label (WEL)⁹ scheme and AECB Water Standards¹⁰ for

⁶ <http://publications.environment-agency.gov.uk/PDF/GEHO0911BUDR-E-E.pdf>

⁷ This could lead to the development of an expanded demand management information technology sector in Ireland linked to the proposed Green, Smart Economy as detailed by the High level action group on the Green Economy. Working closely with organizations such as IBM or Intel could lead to globally significant developments in this arena.

⁸ <http://publications.environment-agency.gov.uk/PDF/GEHO0911BUDR-E-E.pdf>

⁹ <http://www.waterrating.gov.au>

¹⁰ http://www.aecb.net/about_us.php

buildings that sets performance requirements for individual water using appliances without compromising on comfort and quality. Building regulations (e.g. expansion of Part L¹¹) should include targets for water reduction and a code for sustainable homes as developed in the UK¹², which includes rainwater harvesting, greywater systems, efficient devices and behavior changes that collectively can reduce household water consumption to less than 80 litres per person, per day.

(ii) Link between water and energy consumption

There is a strong energy link to the supply and consumption of water. Energy is used in water services (from extraction, treatment, delivery) and energy is used in the home for water practices (heating of water and energy use in water using devices). This has been labeled the 'water energy nexus'. For example, the UK Environment Agency (2009) revealed that 6% of the UK's emissions are related to water, 90% of which are associated with hot water use in the home. Therefore an immediate task of Irish Water should be to quantify energy used for water services as was done in California under the progressive and influential report by Bob Wilkinson (2000) 'Analysis of The Energy Intensity of California's Water Systems'. **A more nuanced understanding of water-energy consumption linkages is important as significant carbon and energy savings can be made by strategies to reduce water consumption.** Likewise, it is possible to integrate water and energy demand management strategies. Research by the California Energy Commission¹³ reported that the energy savings from water conservation programmes would achieve 95% of the savings expected from their 2006-2008 Energy Efficiency Programmes at 58% of the cost. These savings are significant and further illustrate the importance of holistic sustainable development strategies and collaboration across government departments.

Ultimately water and energy monitoring, reporting, management and efficiency programmes should be integrated. Such an integration will also require significant awareness raising as demonstrated in the EU Life + RENEW project involving the Energy Saving Trust and WaterWise in the UK who found that only 8% of consumers are aware that their water use contributes to their energy bill¹⁴.

¹¹ <http://www.environ.ie/en/TGD/#Part L Supplementary Documents>

¹² http://www.planningportal.gov.uk/uploads/code_for_sust_homes.pdf

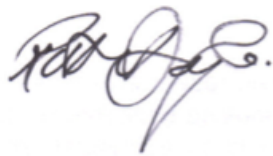
¹³ Klein et al (2005) California's Water Energy Relationship: <http://www.energy.ca.gov/2005publications/CEC-700-2005-011/CEC-700-2005-011-SF.PDF>. See also research by the POLIS institute on Ontario's Water-Energy Nexus:

<http://poliswaterproject.org/publication/341>

¹⁴ <http://www.energysavingtrust.org.uk/About-us/Our-recent-work/EU-Life-water-and-energy-project>

Once again we welcome this opportunity to engage with the Water Services Section in their work to reform the water sector in Ireland and we fully support any attempts to develop a sound and sustainable water system. Please do not hesitate to contact us should you require any further details about any information provided in this response. We would be delighted to talk to you further about our research if that would be useful.

Yours faithfully

A handwritten signature in black ink, appearing to read 'Anna Davies'.A handwritten signature in black ink, appearing to read 'Ruth Doyle'.

Prof. Anna Davies and Ruth Doyle

Appendix 1

Pacific Institute definition of 'soft path' water management

The soft path can be distinguished from the traditional, hard path for water in six main ways:

1) The soft path directs governments, companies, and individuals to meet the water needs of peoples and businesses, instead of just supplying water. People want clean clothes, or to be able to produce goods and services – they do not care how much water is used and may not care if water is used at all.

2) The soft path leads to water systems that supply water of various qualities for different uses. For instance, storm runoff, gray water, and reclaimed wastewater are well-suited to irrigate landscaping or for some industrial purposes.

3) The soft path for water recognizes that investing in decentralized infrastructure can be just as cost-effective as investing in large, centralized facilities. There is nothing inherently better about providing irrigation water from a massive reservoir instead of using decentralized rainwater capture and storage.

4) The soft path requires water agency or company personnel to interact closely with water users and to engage community groups in water management. The hard path, governed by an engineering mentality, is accustomed to meeting generic needs.

5) The soft path recognizes that the health of our natural world and the activities that depend on it (like swimming and tourism) are important to water-users and people in general. Often times, the hard path, by not returning enough water to the natural world, harms other water users downstream.

6) The soft path recognizes the complexities of water economics, including the power of economies of scope. An economy of scope exists when a combined decision-making process would allow specific services to be delivered at a lower cost than would result from separate decision-making.

(Source: Pacific Institute: 'The Soft Path for Water'. Available at:

http://www.pacinst.org/topics/water_and_sustainability/soft_path/index.htm