

A Framework for Adapting to Climate Change in the Water and Sanitation Sector: The case of Wales

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INTRODUCTION

Adapting water organisations and their processes and infrastructure to address climate change impacts poses a significant challenge, which will involve using new technologies, but may equally involve new ways of working within and between organisations, or between organisations and the public. In this research we focus on institutional and social processes through which climate change adaptation occurs. Adaptation is underpinned by how climate change impacts are perceived and based on how the current and future water management practices are envisaged. Our contribution has been a 'framework' of four contrasting frames which organisations or individuals draw on to make sense of water policy, practice and adaptation in Wales. The aim is not to identify the optimum climate change strategy, but to bring light to the diversity of the frames and to use this diversity to enable discussions about a collective route to become more adaptive.

Frames: Sets of consistent ways in which water management actions are discussed, judged and planned. Frames emerge from experience, knowledge and common sense understandings of the everyday reality of water management (Burell & Morgan, 2001).

METHOD

Focusing on the main water and sanitation service provider DCWW (Dwr Cymru Welsh Water) and its stakeholders, semi-structured interviews were carried out & documents reviewed in relation to case studies (see Figure 1). Data was coded and thematically analysed using NVIVO* to yield the characteristics of four frames.

*NVivo is a software tool which allows organisation and analysis of qualitative data from sources such as interview transcripts, surveys, documents and videos



Figure 2. Map showing DCWW service areas in Wales and England.

RESULTS

The identified frames are referred to as: *Market*, *Environment*, *People of Wales* and *Technocracy*. These frames represent current and potentially water management ideals in Wales. They do not act in isolation, but a combination of frames, is drawn on in particular organisations, situations or points in time.

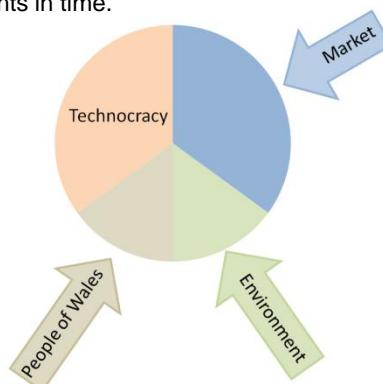


Figure 3. Graphic demonstrating findings. External frame pressures shown by arrows and internal frame balance by circle. Note that the external pressures and internal balance is likely to be different

Market: Argues that a free market, which enables the customer to freely choose where and by whom they wish to buy their water and sanitation services from, will result in better management of the resource.

Environment: Water is a precious resource and part of our natural capital, which we have a responsibility to protect and improve as part of the ecosystem for their intrinsic values.

People of Wales: Water and sanitation are human rights, which should be safe and reliable for people regardless of socio-economic circumstances.

Technocracy: Water and sanitation systems are an asset to be managed to secure human demands for water supply and drainage.

IMPLICATIONS

If articulated and made explicit the frames enable contradictions and alignments to be identified, and therefore support collective negotiation of a strategy for climate change adaptation.

Frame diagrams, like Figure 3, can help facilitate conversations within teams or water management organisations about how external drivers are pushing their policies and practices, as well as about the present and desirable internal balance between frames. The internal balance refers to the policies and practices undertaken which the team is able to influence in the short term. Once an 'appropriate balance' between internal frames has been agreed a specific action plan can be developed to support organisations in moving their policies and practices forward in a coherent and adaptive way.

SUCCESS STORIES

- Presented findings to high level Welsh Water Industry Forum and national water network (Water UK)
- Close working with DCWW, Welsh Government, Environmental Agency Wales and other stakeholders
- Positive feedback from workshops with stakeholders

REFERENCES

Burell, G. and Morgan, G. (2001) *Sociological Paradigms and organisational Analysis*. Ashgate Publishing Company, Aldershot, England.

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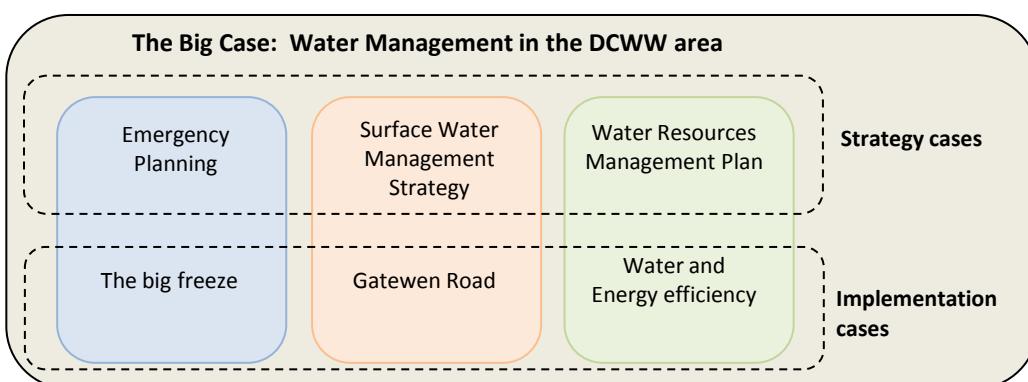


Figure 1. The seven case studies selected to aid our understanding of climate change adaptation in Wales