Academy of the Social Sciences in Australia

Promoting the Social Sciences

Wednesday 3 November 2010

Wendy Craik AM
Commissioner
Australia's Urban Water Sector inquiry
Productivity Commission
Melbourne

RE: ASSA Submission to Productivity Commission inquiry on Australia's Urban Water Sector

Dear Wendy,

On behalf of the Academy of the Social Sciences in Australia (ASSA) I am pleased to be able to provide these comments to the Productivity Commission to assist its inquiry in Australia's Urban Water Sector.

The Academy welcomes the opportunity to respond to this important issue and will be more than happy to promptly follow up these comments with the Productivity Commission on any matter for which additional information is desired.

Please do not hesitate to contact me should you require anything further. I thank you for your time in this matter.

Yours sincerely,

Dr John Beaton
Executive Director

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Academy of the Social Sciences in Australia
Promoting the Social Sciences

Submission from the Academy of the Social Sciences in Australia (ASSA) regarding the Productivity Commission's inquiry into Australia's Urban Water Sector

November 2010

Introduction

The Academy of the Social Sciences in Australia welcomes the opportunity to respond to the inquiry into Australia's Urban Water Sector being conducted by the Productivity Commission.

A foundational element of ASSA's Constitution is the commitment "*to comment where appropriate on national needs and priorities in the area of the social sciences"*. The Academy therefore wishes to outline its responses to the questions raised in the Issues Paper which was prepared for this inquiry. In doing so, we have made some suggestions which are relevant to the first Terms of Reference for the Inquiry, namely the opportunities for efficiency gains.

In particular, ASSA considers that in the past too many of the policy decisions for the urban water sector have concentrated on supply augmentation arrangements, and that there has been inadequate utilisation of social science research to understand demand management and other aspects of human behaviour relevant to urban water use.

Further, ASSA is conscious that in considering systems for the delivery of urban water services and reforms by which those services might be made more efficient, there are legal and ethical considerations which will need to be taken into account. Foremost amongst these are:

- The resolution of the ethical considerations which surround the use of manufactured (recycled) water as a means of supply augmentation. Any strategic approach to provision of urban water services in Australia will need to consider the role manufactured water will play. Prior to doing so however, it is essential that not only the scientific, but *ethical* issues which surround, for example, attempts to use manufactured water to provide potable water to households, are explored and resolved.
- The establishment of an agreed upon legal framework within which different urban water services providers, planners and governing bodies operate. A clear and agreed upon framework addressing issues such as rights to water, ownership of water, and ownership of wastewater (which will be of increasing importance as technology allows the more efficient manufacture of water from wastewater) is a necessary precursor to the development and implantation of new urban water services policies.

In response to the issues raised by the Productivity Commission in its Issues Paper, *Australia's Urban Water Sector*, the Academy would like to raise the following social-science based points in relation to the Terms of Reference, with the hope that these will contribute to strengthening the breadth and utility of the inquiry.

ASSA's response to selected Key Questions from the Issues Paper

- **What objectives should governments have for the urban water sector?**

Recognising that potable water and hygienic wastewater disposal are fundamental human necessities, ASSA supports the development and implementation of policy frameworks whose objective is to equitably supply adequate water for the needs of individuals in urban areas, as well as for needs of the communities and industries which sustain them socially and economically.

In so doing, such policy frameworks should at all times ensure that urban water systems utilise water resources in a sustainable manner, maintain public health outcomes consistent with community expectation, and result in the minimum possible environmental degradation.

ASSA notes the submission to the Productivity Commission's inquiry by Professor Quentin Grafton, Director of the Centre for Water Economics, Environment and Policy at the ANU. ASSA welcomes Professor Grafton's recommendation "that appropriate guides for governments in the provisions and regulation of urban water services include the maximisation of supply security, and also consumer welfare – one measure of which is the maximisation of the consumer surplus of urban water services users (2010: 2, 4)".

- **What are the impediments to achieving those objectives?**

ASSA considers that there is a case for reform of the urban water sector in Australia to deliver improved decision making processes for the development and implementation of urban water infrastructure, particularly of larger facilities.

ASSA's primary concern is that many of the water infrastructure decisions taken in the last ten years, for example, have been short-term responses driven in part by the electoral cycle and which were not adequately scrutinised prior to being implemented.

Recent examples include decisions made to construct desalination plants in Sydney and on the Gold Coast, as a well as a significant proportion of so-called 'water grid' transmission piping. In the case of the two desalination plants, it appears highly likely in retrospect that the decision to proceed with these projects would not have proceeded, had a rigorous cost benefit analysis been undertaken which included not only capital cost, but running costs and carbon emissions allowing for desalination plants' being powered by coal-fired stations.

These decisions reflect a longer trend in the practices of water service providers in Australia, who have generally operated on a 'predict and provide' basis which paid insufficient recognition to the behaviour of the population, or to the environmental limits to supply, which were essentially conceived of only on a 'use and discharge' basis. Decision making processes of this nature and the policies in which they have resulted constitute an impediment to achieving the objectives outlined for urban water systems.

- The decision making processes for major infrastructure may be enhanced by inclusion within those processes of a role for a central, independent statutory authority or authorities which would make recommendations to governments on the basis of sound science and sound analysis. This would reduce the influence of the political cycle. Provided such authorities had suitably transparent decision making processes, they would provide a strategic perspective which countered the short-term influence of electoral cycles. Reducing unnecessary capital expenditure would be an important way of enabling efficiency gains in the urban water sector.

- **Is there a strong case for reforming the urban water sector?**

ASSA advocates the reform of decision making processes for the urban water sector which result in appropriate consideration being given not only to supply-side factors, but which recognise and accommodate the critical importance of demand management. This requires better understanding of human behaviour which underpins demand management policies and how this behaviour might be changed.

Changes in patterns of urban demand for water and its consumption can often be clearly traced to changes in overall patterns of behaviour. The proliferation in Australia towards the end of the twentieth century of houses with multiple bathrooms and recreational features such as spa baths is an example of a changing a behavioural pattern which impacted significantly on the demand of for urban water services.

On the other hand, the imposition of restrictions in many of our cities had an impact on behaviour in the short term, and most likely in the longer term as a result of increased awareness that water may indeed be a scarce resource.

This example emphasises the important role social sciences research can play in indentifying and understanding patterns of human behaviour, the changes in those patterns, and the potential for further changes. This knowledge is an essential input to the development of appropriate responses to assist with demand management.

- A greater emphasis on demand management policies which respond to trends and patterns in human behaviour could complement supply-side decision making, and, through managing consumption patterns, achieve substantial efficiencies in the urban water sector.

ASSA proposes, for example, that if decision makers responsible for urban water services in South-east Queensland had engaged in a more thorough social science research, they could in all likelihood have predicted the high compliance rate with water restrictions, and the resultant substantial decrease in per capita consumption in SEQ.

This pattern of behaviour suggests that cities could withstand drought for longer, with the implication for policy that demand management through early introduction of water restrictions can lessen the long term strain on water resources and infrastructure. While this knowledge can now be configured into future planning, early research into this behavioural response would likely have obviated the need for some of the capital works which have subsequently taken place in SEQ.

ASSA's view is that the development of demand management policies as an integral of planning for and delivering urban water services inheres in a broadly based understanding of human behaviour, and considers that demand management policies will be achieved by multiple means. ASSA recognises that the introduction of 'flexible volumetric pricing', or 'scarcity pricing' arrangements is one important factor. These could deliver more efficient outcomes that include minimising water use during periods of supply scarcity whilst also minimising welfare costs (Grafton 2010: 10), as well as to more efficiently determine when to undertake supply augmentation, and to pay for it (Grafton 2010: 3-4).

ASSA is conscious, however, that factors such as the public perception of equitable arrangements, and the possible need by governments to more firmly control water use in times of scarcity, mean that demand management can be achieved in a manner which is efficient, equitable and acceptable when a variety of policy

implements are used, including both pricing mechanisms, such 'scarcity pricing', and regulation, such as water restrictions (Gunningham & Holley 2010).

- A mix of policy devices which includes both flexible pricing and regulatory measures will be most effective in delivering urban water services in manner which is efficient and is accepted by users as equitable

However, these instruments need to be considered in conjunction with other factors that might influence human behaviour.

In recommending a greater investment in, and more effective utilisation of social sciences research to plan for future urban water system requirements, ASSA is encouraged by developments such as the Commonwealth Government's funding of the Australian Urban Research Infrastructure Network, a facility which will collect and make available data on urban resource use to facilitate the conduct of policy relevant research into urban resource use, including of water services.

- There has been insufficient investment, and utilisation of social sciences research. Better incorporating social sciences research into policy development and implementation processes will contribute to more efficient delivery of urban water services

- **What options for reform offer the largest benefits in metropolitan and regional urban areas?**

The foregoing has discussed the role of arrangements to assist more effective investment decisions on water supply, social research to better understand the most effective ways of managing demand, the role of scarcity pricing, and regulation such as restrictions. Concerning options for reform which are more specific than those already addressed, ASSA considers that:

1. Insufficient consideration has been given to analysing the costs and benefits of policies which would result in the mass installation of water tanks.

Mass installation of water tanks, including potentially underground, on the 80% of urban properties that can easily take 10,000-20,000 litres has been, to date, neither given serious consideration, nor been rigorously costed on a large scale, as an alternative to construction and maintenance of desalination plants.

Tank installation has in the past been briefly subsidised by some state and local governments. Such schemes have been neither implemented nor sustained in such a manner, however, as would achieve a strategic target, such as 80% of households and businesses.

- Greater consideration be given to the costs and benefits of a policy with the strategic objective of mass installation of water tanks.

2. Insufficient consideration is given in planning for urban water services, and in supply augmentation projects in particular, to infrastructure which supplies water which is 'fit for purpose'.

Long term planning for the augmentation of water supplies and water delivery, as well as sewerage services might potentially be significantly changed by giving consideration to the delivery of water which is 'fit for

purpose', and is of sufficient quality for the purpose of the end user. Examples include the delivery of non-potable water for the maintenance of sporting ovals and for industrial use.

Providing water services on a 'fit for service' basis has the potential to change the water services are provided, and in particular the level at which they are managed, as well as enhancing the benefits which that management brings. In particular, such an approach could lead to a greater incorporation of planning and management at the local level, as the differing needs of communities for water of varying qualities (such as for sporting ovals), as well as their capacity to produce water of varying qualities, is taken into account.

- Greater consideration be given to planning processes which consider the provision of water services on a 'fit for purpose' basis.

Recommendations

The preceding paragraphs imply some adjustment to the decision making processes which govern Australia's urban water sector in order to ensure that the interests of all relevant stakeholders are taken into account.

ASSA wishes to make the following recommendations:

- The decision making processes for major infrastructure may be enhanced by inclusion within those processes of a role for a central, independent statutory authority or authorities which would make recommendations to governments on the basis of sound science and sound analysis. This would reduce the influence of the political cycle. Provided such authorities had suitably transparent decision making processes, they would provide a strategic perspective which countered the short-term influence of electoral cycles. Reducing unnecessary capital expenditure would be an important way of enabling efficiency gains in the urban water sector.
- A greater emphasis on demand management policies which respond to trends and patterns in human behaviour could complement supply-side decision making, and, through managing consumption patterns, achieve substantial efficiencies in the urban water sector.
- A mix of policy measures which include both flexible pricing and regulatory measures will be most effective in delivering urban water services in manner which is efficient and is accepted by users as equitable
- There has been insufficient investment, and utilisation of social sciences research. Better incorporating social sciences research into policy development and implementation processes will contribute to more efficient delivery of urban water services
- Greater consideration be given to the costs and benefits of a policy with the strategic objective of mass installation of water tanks.
- Greater consideration be given to planning processes which consider the provision of water services on a 'fit for purpose' basis.

References

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The Academy of the Social Sciences in Australia

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