

National Academies Internet Forum
“Integrated Sustainability Assessment”

A response by Dr John Williams to a position JACS paper "Sustainable Options for an Urban Water Supply" by Professor Nancy Millis.

1. Background

This concise and well-written paper sets down the history and methodology used by the Victorian government, water authorities, industry and community to establish a policy framework and ways forward for managing water demand and water supply in a more sustainable manner for the people of Melbourne.

The Victorian government appointed a Strategy Committee, representative of the water industry, the different user groups, conservation and social service interests, ecologists and various regulatory agencies. This Strategy Committee was empowered to supervise the work of technical groups, commission reviews etc, develop the communication mechanism, and finally report recommendations on the options to government. A clear focus of the Strategy Committee was to ensure that the opinions and concerns of the general community and other users were widely sought and considered.

Following the modelling and analysis of the subcommittees, the public had access to information on the impacts of various scenarios and options and were encouraged to provide written submission and use web access on at least two cycles of analysis and response.

Integration of these responses and further work by the committee yielded a report upon which government developed a Green Paper followed by a White Paper. The White Paper endorsed most of the recommendations of the Strategy Committee relating to sustaining Melbourne's water resources, as part of the government's response to sustaining water resources across the State as a whole.

2. Methodological issues for integrated sustainability assessment

Modelling interacting factors

This paper drew on extensive hydrologic and economic modelling of consumption and supply options resulting from analysis of the thinking from community, government water agencies, and research institutes. The interactive modelling was restricted to hydrologic interactions between demand options and supply. As far as I can tell the supply implications of increasing or reducing supply and thus water extraction on river flow regime and ecological functions was not addressed. This is a weakness that will need to receive attention in the future. Most of the focus was on options for reducing demand. The benefit cost analysis of these options was from my knowledge done in separate exercise. I doubt if the hydrologic and the economic models were run interactively using linked software. Clearly this could now be done with well-understood linear programming and optimisation techniques.

It is most important to note that a separate human engagement process determined the social values attributed to each of the hydrologic and economic options. No attempt was made to build this into any modelling process. This is most important. Exploring social response to biophysical and economic options is a human process with very important social and political value in the human engagement and

interaction process. The human process is important in itself. Social engagement can stand on its own merits. The influences of social values and perspectives on the options were explored by consultative and focus group studies along with examination of the comments by community via the public comment process. The participative and iterative nature of this social engagement is critical to the whole success of the project and its effectiveness.

Evaluating outcomes across many disparate values

The influences of social values and perspectives on the options were explored by consultative and focus group studies along with examination of the comments by community via the public comment process. The integration of the biophysical, economic and the social were each done as independent exercises. The information was strongly linked together by a set of interactive and iterative social engagements. Judgements and evaluations were made on the basis of responses of selected and hopefully informed and representative groups along with broad public responses and submissions to sequential publication of findings.

Whilst the process might not appear objective it gained a level of public engagement and direct input from a respectable range of interest groups in the community so that decision makers can have some confidence in the social evaluation of the options.

Developing policy strategies

This study is a very good example of effective linkage to policy mechanisms. The government leadership and context for the study embedded from the very beginning clear pathways for the findings to be built into policy.

For studies to be successful in influencing and contributing to policy it is essential that the studies have a clear policy delivery pathway built into the processes of the study at conception. There are many ways of doing this. This study had a very direct pathway and process. Other studies such as the work of the Wentworth Group in water and vegetation policy thinking have used less direct mechanisms but nevertheless employed strong links to policy process. Conscious attention to mapping a pathway to policy is an aspect of sustainability work that is usually overlooked.

3. Conclusions

This is a most useful study on moving towards more sustainable water use for Melbourne. It combines a hydrologic and economic modelling approach with a well designed social engagement process that allowed social evaluations to be made of options to reduce demand and increase supply and build from the process a effective link and delivery to water policy.

John Williams

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