

Building public confidence in Australian water management

Over the last two decades Australia has come a long way in its management of its precious water resources. Though Australians often grumble to each other about the distance we have been yet to go, in many other countries the Australian story in water reform is much admired. But one area where Australia has a lot more to do is the way we use our science to support public confidence in the quality of water management in Australia.

Here are seven specific areas where there is a need for Australia's water scientists to help build public confidence in the rationality and evidence basis of Australia's water management decisions.

First, despite decades of efforts, sustainable levels of water extraction continue to be poorly defined and understood. Knowing how much water can be extracted from a given water system without unacceptable impacts on the environment or on future generations, is a threshold condition for most water decisions. Ultimately, these are political decisions, but the best such political decisions are made against a background of high quality scientific advice. We need to build better channels for scientific advice to feed into those political decisions.

Second, we need, from our scientists, a much better understanding of the water needs of our ecological systems and their likely responses to changes in water availability. Unless we can at least broadly predict the impacts of changes in water supply on the plants and animals that make up our environment, sensible decisions about permissible rates of extraction cannot be made and, as a consequence, the public will lack confidence in decisions to reserve water for the environment.

Third, scientists have a lot to contribute to decisions about the best ways of utilising our growing stocks of environmental water. The community needs to be confident that water reserved for environmental purposes is being used every bit as efficiently and effectively for its purposes as water used for so-called "productive" purposes. Scientists should always be key advisors to environmental water managers. If the community is to have confidence in environmental water managers, scientists need to be seen to be playing central roles in planning, monitoring and vouching for the effective use of environmental water.

Fourth, we need much improved understanding of our national groundwater resources. This is not only because groundwater resources are so important for irrigation, urban water supply and groundwater-dependent ecosystems across Australia, but also because of the widespread current public misgivings about the potential impacts on groundwater of unconventional gas sources such as coal seam gas. Development decisions potentially affecting groundwater will not enjoy community acceptance unless reputable scientists can be built in to decision making processes to play the role of trusted independent advisor.

Fifth, there is continued strong demand in the community for better scientific understanding of the water resources of northern Australia and how best to manage them. Successive governments continue to propose further development of Australia's north. These decisions will be made with or

without a good knowledge base. For contentious decisions to “stick”, the public needs processes that enable them to see, and test, the science underpinnings of northern development decisions.

Sixth, over the last decade or so, Australian scientists have made spectacular improvements in the quality of their seasonal forecasting. However, even more is required. Not only do we need more accurate seasonal forecasts for both production purposes and to best manage our scarce environmental water, but we also need forecasting models that can provide finer-grained regional specificity. In recent years public confidence in seasonal forecasting has grown, albeit tentatively, but to the extent that our forecasting models are beginning to influence management decisions about environmental water, the public will demand more evidence of their efficacy.

Seventh, "water sharing plans" are integral to the unique way Australia manages its local water supplies. Such plans, and the water sharing decisions that comprise the plans, are meant to be based on the best available science. This includes the best available ecological and hydrological knowledge. Because water plans are developed in close consultation with affected local communities, the science needs to be presented in an accessible form. In too many water planning processes, stakeholders remain unconvinced about the quality of the science adduced in support of the water sharing decisions. If community acceptance of the sometimes-tough decisions is to be earned, scientists need to be invited into water planning processes and then deliver comprehensible, accessible advice.

These science-related gaps in public confidence pose an enormous challenge for our science sector. For that reason we need to be better organised as a nation to deliver science input to water management. In my view, governance arrangements in Australia for water management decisions need to be re-designed to more effectively embed scientists, in the role of trusted independent advisor, in our various national, regional and local decision making processes about water.

Moreover, Australia's general processes for planning, resourcing, implementing and adopting scientific research for water management are nowhere near up to the challenge. Currently, the way priorities for water research are set is unsystematic and non-strategic. Water research budgets ebb and flow as public attention to water issues rises and falls. Water research institutions and agencies are created and disbanded by governments in an ad hoc way. Users of water research do not have the necessary intimate linkages with research providers. Providers of research are too often excluded from water policy planning processes and are not sufficiently respected for what they can bring to the table. In short, our national water science arrangements are not well organised and as a result our science performance suffers and public confidence in water management decisions is lacking.

Australia's positive reputation in water management around the world is based on its innovative approaches to governance, planning and the use of markets. It is time now to buttress that reputation by seeking to systematically build public confidence in our water management decisions through the intelligent incorporation of science into the full spectrum of our water management decision making processes.

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