



Global Trends in Integrated Water Management

Melanie Durette

ISSN 1171-0853

Introduction

Globally there is increasing recognition that in order to address adequately today's water problems it is necessary to change the current approach to water management (Pahl-Wostl et al., 2008). To date there has been a strong tradition of addressing water problems with top-down approaches and technical solutions (Pahl-Wostl et al., 2008). In this paradigm, belief systems, human attitudes and collective behaviours are perceived as external boundary conditions and not as an integral part of management (Pahl-Wostl et al., 2008). These approaches are characterized by limited coordination between sectors and lead to fragmented and uncoordinated development of water resources (Xie, 2006). However, the situation has started to change dramatically and, in recent years, integrated water resources management (IWRM) has become the reigning paradigm (Pahl-Wostl et al., 2008).

The Global Water Partnership (2000) defines IWRM as a process that promotes the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner and without compromising the sustainability of vital ecosystems. Therefore, IWRM represents a more holistic and integrated approach to water management than traditional approaches. This Knowledge Note briefly looks at how IWRM is starting to be reflected in legislation and policy in New Zealand, Australia and Canada and includes some examples of IWRM in practice in each of these countries.

IWRM in New Zealand

With the passage of the *Resource Management Act* in the 1990s water management was integrated with the management of other natural resources, including land, air and coastal resources (Fenemor et al., 2008). Local governments in New Zealand now manage the environment under this one main statute. In mid-2009, as part of the New Zealand government's resource management reform, a new

direction for water management was proposed that advances many of the characteristics of integrated water management approaches. A stakeholder-led collaborative process under a Land and Water Forum will be used to develop a shared understanding of the issues and outcomes sought for New Zealand, and the options for achieving those outcomes. In order to maximize buy-in to any new models that are implemented, it is recognized that the public necessitates good information and that decisions cannot be rushed. In proposing this new direction, it was recognized that a stronger focus on the effects of land use and management and water quality and quantity was required. One of the aims for water management is to achieve the best value for New Zealand's water resources that would be determined by looking across economic, environmental, social and cultural dimensions of water. There is also an existing joint work program between government and Maori leaders on matters of mutual interest relating to water that will be continued with a focus on resolving Maori rights and interests in water.

The Motueka Integrated Catchment Management Programme provides one of the strongest examples of IWRM in New Zealand. The Programme is situated in the Motueka River catchment and Tasman Bay area at the top of the South Island. It aims to develop integrated, multidisciplinary research approaches to address water resource management issues and is defined by strong stakeholder consultation (Bowden et al., 2004). The Programme has also led to the creation of several collaborative learning groups and initiatives. Another major feature of the work has been scenario modeling that has both a technical and social stream, with the latter enabling stakeholder participation.

IWRM in Australia

In 1994, the Council of Australian Governments¹

¹ The Council of Australian Governments consists of the Prime Minister, state Premiers, territory Chief Ministers and the President of the Australian Local Government Association.

agreed to implement a framework to achieve an efficient and sustainable water industry in recognition that better management of Australia's water was required. More recently, the government released a National Water Initiative (NWI) to build on the COAG framework. One of the key elements of the NWI is integrated management of water. As per the NWI, integrated water management seeks to identify within water resource planning frameworks the environmental and other public benefit outcomes sought for water systems and then to develop and implement management practices and institutional arrangements that will achieve those outcomes. Other features of the integrated approaches that are reflected in the NWI include increased emphasis on cross-jurisdictional management, stakeholder consultation and involvement, transparency for decision-making and recognition of the interconnectivity of water systems. The NWI also accounts for Indigenous access to water and participation in water planning.

The integrated approach is most recently seen in the management of Australia's the Murray-Darling Basin, which is the catchment for the Murray and Darling Rivers. It is largely recognized that the Murray-Darling Basin has been mismanaged in the past and has resulted in one of Australia's most serious environmental crises. The recent formation of the Murray-Darling Basin Authority (MDBA) means that for the first time a single agency is now responsible for planning integrated management of the water resources of the entire Basin (MDBA, 2009). The MDBA has recently approved a concept for a new Basin Plan that will bring the management of surface water, groundwater and environmental resources of the Basin under a single plan. This Plan is based on extensive government and stakeholder consultation. The new approach to management of the Basin reflects the importance of involvement of all levels, including Indigenous communities.

IWRM in Canada

There is a long history in Canada of initiatives that aim to coordinate and integrate aspects of water management. These are found within the federal government, within each provincial/territorial government, and between governments at various levels (De Loe, 2008). At the same time, organizations outside of governments have a strong interest in national-level coordination and collaboration in water management (De Loe, 2008). This integrated approach is also seen in water governance across jurisdictions, including across provincial and across Canada-United States borders (Government of Canada, 2003).

While integrated water resource management is reflected in early federal water policy, the federal government in Canada has no formal mechanism for coordinating and prioritizing its involvement in integrated water resource management (Morin, 2009). A recent review of integrated water resources management in Canada suggested that a federal water management strategy could be of benefit in guiding the collaboration of the range of departments and agencies involved in water management (Morin,

2009). Such a mechanism might be found in a national water strategy.

Most Canadian provinces, who also play a role in water management in Canada, have taken action and are moving in the direction of integrated water resource management through the establishment of watershed-based governance structures and management systems as well as increasingly giving community-based water stewardship organizations and local stakeholders a formal role in planning and a greater say in decision-making (Morin, 2009). The province of Alberta's Water for Life Strategy demonstrates an integrative approach to water management at the provincial level in Canada. The Strategy was developed through extensive consultation with stakeholders representing a diverse range of stakeholders (De Loe, 2008). One of the major focuses of the Strategy is the creation of multi-stakeholder partnerships (De Loe, 2008). There are three types of partnerships that have been created: a Provincial Water Advisory Council, Watershed Planning and Advisory Councils, and Watershed Stewardship Groups.

The latter type of partnership – watershed stewardship organizations - is a common feature of Canadian water management initiatives. It is estimated that there are over 130 water stewardship organizations in Canada that are beginning to play an important role in making water management governance structures more integrated and place-based (Morin, 2009). These watershed stewardship organizations are a common way for Indigenous communities to participate in water management and work in partnership with other stakeholders.

Conclusion

New forms of water governance are required that address the complexity of water management and associated issues (Tropp, 2007). Although considerable challenges for water management remain, these more holistic and integrated approaches are increasingly reflected in national policies, such as those discussed in this Knowledge Note, and will lead to better outcomes for water in the countries in which they are employed.

References

- Bowden, W., Femenor, A., & Deans, N. (2004). *Integrated water and catchment research for the public good: The Motueka River-Tasman Bay Initiative, New Zealand*. Water Resources Development, 20(3), 311-323.
- De Loe, R. (2008). *Toward a Canadian National Water Strategy*. Report prepared for the Canadian Water Resources Association. Guelph, Ontario: Rob de Loë Consulting Services.

Femenor et al. (2008). Collaboration and modeling – Tools for integration in the Motueka catchment, New Zealand. *Water SA*, 34(4), 448-455.

Government of Canada. (2003). *Water and Canada: Preserving a legacy for people and the environment*. Ottawa: Government of Canada.

Morin, A. (2009). *Strengthening integrated water resource management in Canada*. Ottawa: Policy Research Initiative.

MDBA. (2009). *The Basin plan: A concept statement*. Canberra: Murray Darling Basin Authority.

Pahl-Wostl, C., Tàbarab, D., Bouwenc, R., Crapsc, M., Dewulf, A., Mostert, E., Ridder, D., & Taillieuc, T. (2008). The importance of social learning and culture for sustainable water management. *Ecological Economics*, 64(3), 484-495.

Tropp, H. (2007). Water governance and needs for new capacity development. *Water Policy*, 9, Supplement 2.

Xie, M. (2006). *Integrated water resources management – Introduction to principles and practices*. Washington, D.C.: World Bank Institute.

CONTACT

Author: mdurette@synexe.com

Synexe

www.synexe.com

synexe@synexe.com

PO Box 6295
Wellington 6141
NEW ZEALAND
T+64 4 889 2152

PO Box 1344
Springwood
Queensland 4127
AUSTRALIA
T +61 7 3102 1940