

Challenges for water managers: can science help to solve the problems?

GORDON J. YOUNG

34 Vincent Avenue, PO Box 878, Niagara on the Lake, Ontario L0S 1J0, Canada
gordonyoung_wwap@yahoo.com

Abstract Water pervades all human activities and thus is of fundamental importance for basic human well-being, for economic and social development, and for physical security. Water is also vital for the maintenance of the natural ecosystems on which we all ultimately depend. Thus water managers must be concerned with a large variety of issues, including water-related health issues (safe drinking water, sanitation and water-related diseases), the availability of water for food production, the water needs for energy and industrial production, and the safeguarding of societies from the ravages of floods, droughts and pollution spills. These human needs must always be balanced with consideration for the natural environment. These issues are not independent of each other – they are interlinked and thus must be treated in an integrated manner. The settings in which water managers find themselves are highly varied from region to region and country to country. Not only are climates and hydrologies extremely diverse, but the ways in which societies organize themselves are equally varied. Governance systems are based on the cultures, the religions and the attitudes of peoples. They link to the political settings, to the effectiveness of institutions, to legislative frameworks and to financial instruments. Water managers must find solutions to the challenges facing them, considering the constraints of the systems within which they work. Thus different solutions must be considered for different circumstances. Sciences (hydrological, political, social, economic) provide knowledge and understanding of the systems involved. All are essential in informing water managers in their decision-making. Hydrological science is of vital importance, but is just one of many relevant sciences.

Key words governance; health; economic development; integrated management