

O&M costs): bucket, DVC, pit, trench or VIP latrine; PF- or CF-toilet, aquaprivy; latrine and vault or PF-toilet and vault; simple or conventional septic tank, septic tank for excreta reuse, biogas digester; seepage pit or drainage field; covered stormwater drains, settled, simplified, or conventional sewerage; marine discharge, primary treatment, waste stabilization ponds, activated sludge and chlorination, or nightsoil/sludge treatment.

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### Face the facts

Since the mid-1970s, the United Nations Commission on Sustainable Development has been expressing concern that much of the world is facing a severe water crisis. In an attempt to both quantify and qualify this, scientists from different countries and agencies were invited to prepare background documents.

The result of 20 years of research is the *Comprehensive Assessment of the Freshwater Resources of the World*, recently published by the World Meteorological Organization on behalf of the UN, UNDP, UNEP, FAO, UNESCO, World Bank, WHO, and UNIDO. There are three main chapters:

- the supply, availability, and use of the world's freshwater resources;
- the water challenge: a 30-year outlook; and
- conclusions and policy options.

To obtain a copy, or for more technical information, please contact Wulf.Klohn@fao.org

### Crime on tap

Environmental pollution makes a big contribution to violent crime and anti-social behaviour, according to a provocative new analysis by an American political scientist. He believes that toxic chemicals, in particular metals in water supplies, can disrupt the neurological control mechanisms that normally inhibit our violent urges. Other experts are intrigued but want to see more evidence.

Roger Masters of Dartmouth College in New Hampshire analysed a wide range of statistics including crime figures, and information on industrial discharges of lead and manganese, both into water and into the atmosphere. After controlling for conventional variables such as income and population density, he found that environmental pollution seems to have an independent

## books

### Reflected in Water: A crisis of social responsibility

Colin Ward

Cassell, London, 1997.

160pp. Pbk. £12.99.

ISBN 1 304 33568 1.

Is water a common property, or a commodity? In fluent prose, Colin Ward takes the reader through a plethora of issues surrounding the ownership and management of water. His thesis is that water must be treated as a common good, managed by society with fairness and equal access for all, in a reciprocal relationship that ensures that what is taken is returned. 'Water is an essential element for life, a constantly renewed but not inexhaustible resource, belonging to everybody, not just to those who have taken over the control of supplying it to others.'

Ward has obviously read widely and well; he draws on the wisdom of a wide range of writers on the management of natural resources, in particular, water. The main issues he tackles include: the conflict over water for agriculture, industry and domestic use; the advantages of small-scale water management over large-scale supply; 'marketizing' and privatization; inequality in water allocation, access and control; and the role of women in water management — and the need to strengthen their voice.

He links the growing power of the water companies in Europe to a falling away in both social consciousness and public awareness of the need to conserve a precious natural resource; and questions the increase in water costs that have resulted from privatization.

Ward recognizes the role played both by those individuals and groups who make a living from

supplying water to others: the water-sellers of Bangladesh, the Water Tribunals of eastern Spain — each made up of eight farmers who manage irrigation canals covering 2300 acres; and the traditional forest and water management systems of the Saward River in Nepal. His examples are persuasive evidence that the 'tragedy of the commons' does not happen if local societies are given the opportunity of managing a finite natural resource.

He does point out that larger-scale water management and supply systems, such as dams or massive irrigation schemes, cannot permit a communal interest, because they serve huge, disconnected groups of people. A large population cannot plan and manage together, and it cannot hope to represent the collective interest of their families, friends and neighbours.

The book points out that, in urban areas, it is usually the wealthy who are served by public utilities, while the poor have to buy water, often at grossly inflated prices. In fact, in many countries in developing countries, notably in South America, water-management systems divert capital away from collective investments for all, into privately managed businesses for some.

I recommend this book to anyone involved in water-policy development and management strategies. Ward's arguments are heavily biased towards common property, but he argues the case clearly and has convinced this reader! *Reflected in Water* is essential reading for those interested in the possibility of alternative, socially managed solutions.

The book is very readable, and provides a glimpse of the most crucial issues affecting the crisis of water management — that we are faced not with a technical problem, but with a crisis of social responsibility. Good bibliographies at the end of each chapter will enable interested readers to further their knowledge on specific issues.

Sarah Gelpke, Overseas Policy and Evaluations Manager, WaterAid

effect on the rate of violent crimes. Counties with the highest levels of lead and manganese pollution typically have crime rates three times the national average, says Masters.

When brain chemistry is altered by exposure to toxic metals, Masters

argues, our natural violent urges may no longer be restrained. 'It's the breakdown of the inhibition mechanism that's the key to violent behaviour,' he claims. He thinks that a major source of lead and manganese is the pipes that carry water to houses.