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C. R. Geoscience 337 (2005) 277–278



<http://france.elsevier.com/direct/CRAS2A/>

External Geophysics, Climate and Environment

A global picture of the diverse links between water and health

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Available online 8 December 2004

Over the past decades, the picture of water-related human health issues has become increasingly comprehensive, with a greater recognition of the complex nature of these links, the emergence of new water-related infectious diseases and a re-emergence of ones already known, and with a greater awareness and insight of the detrimental impact of water-related diseases on social and economic development.

Today, we have strong evidence that water-, sanitation- and hygiene-related diseases (i.e. the classical safe drinking water and sanitation, or water-borne and water-washed diseases) account for some 2 213 000 deaths annually and an annual loss of 82 196 000 Disability Adjusted Life Years (DALYs).

This does not take into account water-related diseases such as malaria, schistosomiasis and other vector-borne diseases, or the more modern infections such as legionellosis. For these diseases, the analyses remain to be done, and, in many cases, the detailed attribution to aquatic environments is not yet completed.

The most recent of emerging water-related diseases is that caused by the SARS CoV infections, with a number of well-documented cases of aerosol transmission in specific sanitary domestic or hospital situations.

The global picture of water and health has a strong local dimension with some 1.1 billion people still lacking access to improved drinking water sources (and

some 2.4 billion to adequate sanitation). The UN Millennium goals, with their overall poverty alleviation perspective, aim to reduce the proportion of people lacking access to these by half in 2015. Yet this will still leave hundreds of millions without access to safe water.

At the other end of the spectrum, the over 45 000 large dams currently in existence around the world represent a microcosm of all the social and economic aspects of water resources development, including the many complex health issues. The World Commission on Dams has, in its in-depth analysis, paid ample attention to health, especially the need for Health Impact Assessment. The WHO has invested significantly in the development of methods, procedures and policy frameworks for HIA over the past ten years.

For the general public, water quality issues become increasingly visible. It is not water that is scarce, but good-quality freshwater is increasingly so. Research in water treatment and quality control has generated a great deal of sophistication, but often of little use in poor countries with the greatest needs. The example of natural arsenic pollution of drinking water in Bangladesh (with some 35 million people exposed) has created a renewed interest in this area worldwide.

The supply of safe drinking water, the improved management of water resources and the promotion of better irrigation practices (agriculture consumes an average of 80% of all freshwater being used) have many

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health benefits and moreover, these are sustainable benefits. Economic evaluation of water interventions shows that they compare well with conventional medical interventions. They bring health to communities and they reduce the burden on and transfer of hidden

costs to the health sector, which in most countries is highly under-resourced. More research is needed in the institutional structures and capacity building needs that will support a more permanent role for water interventions in protecting and promoting human health.