

# Soochow Law Journal

The Global Challenge of Sustainable Water  
Management : International and European Union Law  
Responses

by

Paulo Canelas de Castro

Volume V

July 2008

Number 2

**THE GLOBAL CHALLENGE OF SUSTAINABLE  
WATER MANAGEMENT: INTERNATIONAL  
AND EUROPEAN UNION LAW RESPONSES**

**Prof. Paulo Canelas de Castro\***

[Water:] *"The best of all things"*

**Pindar**

**"Water is the principle, or the element, *arche*  
of things" Thales of Miletus**

The world at large and the world of international and European lawyers in particular, are devoting more and more attention to water issues and the rules governing them or their management. These ones are also evolving quickly.

There are some *hard facts* which may explain this trend. They all underscore a general sense of *a global water crisis*, demanding and justifying *political and legal concern* as well as resolute action.

**1. Of facts and perceptions: the looming global  
water crisis**

*"The land impoverished and the water infected"*

Vitor Hugo

*"Water, water, everywhere, and all the boards  
did shrink; water, water, everywhere no any drop to drink"*

---

\* Associate Professor, Coordinator of the Mater's: Program in European Union Law, International Law and Comparative Law, Faculty of Law, University of Macau.

Samuel Taylor Coleridge, *The Rime of the Ancient Mariner*, Part II, 9

"Wars in the next century will be fought over water"  
Ismail Serageldin, [then Vice-President of the World Bank], 1999

The first one of these contextual facts, is that water, apparently an abundant resource on the Planet, is finite and actually all not that much, on a closer look. Indeed, 97% of the Earth's water resources is saltwater, located in oceans and seas not easily of use to Humankind and the ecosystems. Merely 3% account for freshwater, of which the biggest part is not available, but instead frozen in polar ice caps. In fact, less than 1% of the water in the Planet can in principle be of use for drinking purposes.

The second major factor to take into consideration is that human beings and other animals (some composed mostly of it) as well as plants cannot live without water. Water is an essential life-sustaining element. It is almost as vital as air. In a way, it is more vital than food. Humans cannot live for more than a few days without it, whereas they may stand lack of food longer, as hunger strikes have dramatically proved. Each human being needs circa 2-5 liters of water a day, for basic functions only<sup>1</sup>. The human world and the ecosystems would equally be very different were it to change place or, in terms of time, occurrence.

The third relevant factor is that the finite amount of the freshwater available is becoming increasingly scarce, that is, it may not occur to every need or social and ecological pressure. This is a result of the fact that, for the same quantity of water, the needs have been diversifying, competing and mounting, not

1. The World Health Organization calls for the provision of at least 20 litres of safe water per person a day. See WHO, *The Global Water Supply and Sanitation Assessment 2000*, Geneva, 2000, p.1.

infrequently exponentially. Some other figures, indicated for mere illustration purposes, demonstrate this. The world's population has more than doubled in less than half a century<sup>2</sup>. With socio-economic development, come mounting needs.

To make things worse, the quantity of freshwater available only represents part of the picture. On top of that, the fact should be considered that the quality of water is worsening; globally, a big percentage is already unusable for drinking purposes or usable only at high purification costs. This results not infrequently in major public health problems, the water-borne or water-related diseases which hit particularly those more vulnerable socially and the children, who still today, die by the count of large millions annually, due to ingestion of polluted water. The image of scarcity<sup>3</sup> is yet worsened by the fact that the water available is not evenly distributed but instead comes often in too big or too low quantities, at the "wrong" places<sup>4</sup> or times. Additionally, a big percentage of the world's water lies in international areas or constitutes international bodies of water shared by sometimes not too friendly or cooperative neighboring states. Finally, as if the problems were not daunting enough, the certainty that climate is changing and that risks and uncertainties as well as high variability will be part of the times ahead<sup>5</sup>, only render the sense of crisis more

2. From 1950, when the world's population was about 2,5 billion people, until 2000, when the global population surpassed 6 billion. See World Water Assessment Programme, *Water - A Shared Responsibility*, 2006, p. 3. On population growth and water, see M. de Villiers, *Water: The Fate of our most Precious Resource*, Boston, 2001, Mariner Books, pp. 306-309.

3. E. H. Brans, E. J. De Haan, A. Nollkaemper and J. Rinzema (eds.), *The Scarcity of Water: Emerging Legal and Policy Responses*, London, 1997, Kluwer.

4. For instance, due to the concentration of people away from water resources and technology approximating people and the provision network. See J. M. Dalhuisen, H. L. F. De Groot and P. Nijkamp, "The Economics of Water: A Survey of Issues", *International Journal of Development Planning Literature*, 2000, vol. 15, n°1, pp. 3-20.

5. Intergovernmental Panel on Climate Change, *Third Assessment Report. Working*