The risk of a global shortage of water

The world's population is expected to rise from 6 billion in 2000 to 8 billion in 2025. The average amount of fresh water available per person per year will therefore drop from 6,600 to 4,800 cubic metres, a fall of almost a third. At the same time, if the current trend for using more water continues, between half and two thirds of humankind will be suffering 'water stress' by 2025, the UN's warning threshold which corresponds to 1,700 cubic metres of fresh water available per person per year. The risk of a shortage of fresh water is thus a very real one.

Irrigation poses one of the major problems in the realm of fresh water and the food supply, since agricultural productivity will have to substantially increase if we are to be able to feed the world's population. Although irrigation already absorbs 70 % of global water usage – a quite excessive rate of consumption – this will need to increase by 17 % over the next 20 years. The determining factor for the future supply of fresh water for people will therefore be the rate at which irrigation increases. In other words, only a net improvement in global irrigation management will enable us to deal with the increase in consumption.

An important issue for the future is how to meet the universal demand for drinking water. One person in five today does not have easy access to it. According to UN statistics, 27 out of the 33 mega-cities of over 8 million inhabitants which are expected to exist in 15 years' time will be in the least developed countries – those which are least able to respond to the needs. Furthermore, even if slight reductions in water consumption have been recorded in the USA and Europe in the last few years, the forecasts are alarming, with municipal and domestic consumption set to rise by 40 % in the next 20 years.

Various solutions exist to reverse this trend by reducing consumption and limiting waste: improving the effectiveness of irrigation techniques and promoting in particular those which are most successful; renewing and extending the infrastructure for the production and distribution of drinking water; preserving reserves; combating pollution, in part by waste water treatment, recycling etc. But all these measures require enormous investment.

The decisive role then in managing the future risk of a worldwide shortage of fresh water will be played by national and international political decisions and the investment priorities of countries and finance companies.

Water, source of conflict between nations

The prospects regarding fresh water are gloomy, as it is generally thought that its future scarcity is inevitable. A country which is short of water is a country which can neither feed its population nor develop. Moreover, water consumption per head of population is now considered as an indicator of a country's economic development. One United Nations study shows that fifty years from now water could even become as precious a commodity as oil. This underlines the importance of the resource some are already calling 'blue gold'.

Access to water has therefore become a potent economic issue the world over, one which in the next century could be among the greatest sources of international tension. Over 40 % of the world's population live in the 250 cross-border river basins. In other words, all these peoples have to share their water resources with the people of a neighbouring country. Such a situation could lead to recurring conflicts, especially where a watercourse crosses a border, as water then becomes a powerful weapon in the hands of those who live upstream. Whether powerful or not, the latter always have the theoretical advantage because they can control the water flow.

This is not a recent development. As long ago as 1503, Leonardo da Vinci conspired with Machiavelli to divert the flow of the Arno away from Pisa, a city with which his native Florence was at war. Equally, American research has shown that since the Middle Ages, social upheavals in East Africa have coincided with periods of drought. In Asian societies, water has long been an instrument of political power: social order, repression and political crises have all depended on the vagaries of the rains.

Still today there are numerous disagreements over water across the world, notably in North and South Africa, the Near East, Central America, Canada and the western United States. In the Near East, there are around ten zones of tension. Egypt, for example, which is entirely dependent on the Nile for its water supply, must nevertheless share it with ten other countries in the Nile basin, in particular Ethiopia, source of the Blue Nile, and Sudan, through which the river snakes before it flows into Egypt. Likewise Iraq and Syria are both at the mercy of Turkey, source of the two rivers which sustain them, the Tigris and the Euphrates. Turkey has often used the Euphrates as a weapon to threaten its two neighbours. Thanks to the numerous dams it has built in the upper course of the river which allow it to control the flow downstream as it pleases, Turkey effectively has a potent means of applying pressure.

Booming populations and increasing needs could well cause such tensions to multiply in the future. So some experts predict for the 21st century. Others, however, believe that working together to manage water resources could be a factor in building peace. They put forward some astonishing examples of cooperation, the most famous being that of India and Pakistan which, at the height of their war in the 1960s, continued to fund their joint development work on the River Indus.

Towards a world market for water

Even if the world is united in its judgment that there must be a change in global policy, the proposed solutions are not unanimously accepted, as became very clear at the second World Water Forum in The Hague in March 2000 where opposing conceptions clashed.

Today, the principal concern lies with developing countries. Here the production and distribution networks, where such exist, are rarely able to meet normal standards of drinkability. According to the World Water Council, an NGO supported by Unesco and the World Bank which organised the forum, unless something is done the demography of these countries, especially those in the South, will lead to very serious problems in the supply of drinking water.

Enormous investments will therefore be necessary not only to modernise existing facilities and create new ones (waterworks, distribution networks, treatment works) but also to develop new irrigation systems. The rate of investment has been estimated at 180 billion dollars annually for the next 25 years, as against 75 billion dollars currently invested each year.

Faced with the difficulties which developing countries already have, the World Water Council strongly recommends appealing to private investors, who currently manage only 5 % of global resources. To the members of the Council, water is a commodity like any other, goods to be managed efficiently. Consequently they advocate giving private companies the right to capitalize on it, pricing it according to its true cost of production, distribution and treatment, in an international market of free competition, and passing that price on to the consumers.

But other NGOs have fiercely criticized this view in which the state would become a 'mere regulator', retorting that such privatizations invariably harm the poorest peoples on the planet, do not necessarily improve efficiency, and tend rather to lead to corruption, thereby disproving some of the claims. They have reaffirmed their absolute conviction that water is a 'fundamental right' for everyone. The heart of the problem is not the means of management but setting the right price for water. Many NGOs think the price of water should indeed cover the costs of production, distribution and treatment, but deny that this should be fixed by the market. However, even under these conditions, the poorest populations would be unable to pay for their water.

The great challenge of the 21st century as regards water will thus be to ensure profitable water management while at the same time guaranteeing the poor the right of access to this vital resource.