**B Providing water for the world**

Global demand for water is increasing as many countries are experiencing large population growth. Even in the countries where water supply is adequate, people are beginning to realize how precious it is. As a result, many countries are developing ways to increase and conserve their supplies of fresh water.

One such solution is desalination, the process by which salt water is converted into drinkable fresh water. This involves the removal of salt compounds and other chemicals from the salt water, a process which has traditionally been carried out by heating the water the (thermal method). The main disadvantages of this method has been the cost. Consequently, a cheaper and more flexible method has been developed, whereby salt water is purified by passing it through membranes. This method is used mostly effectively in combination with the thermal method.

Since 1958, China, one of the driest countries in the world, has used these two methods to exploit its 32,000-kilometer coastline and convert sea water into fresh water. To maximize efficiency, the Chinese have successfully combined a desalination plant with a power station in Zhejiang Province, using water from the Pacific Ocean to produce fresh water to generate electricity.

In the United Arab Emirates (UAE), desalination has also helped compensate for the lack of natural fresh water. The first desalination plant was established in the UAE in 1960, producing 56,250 litres of fresh water a day. As the demand for fresh water will be required daily in the UAE, the majority of it being produced by desalination.

The water crisis is not a problem unique to dry countries. In countries with relatively high rainfall, water shortage can still occur because of leakages and the subsequent loss of billions of litres of water. In addition, the average daily consumption of water has risen to as much as 150 litres per person in recent years, due to the increased use of modern technology in our homes. To overcome these problems, the public are encouraged to limit their consumption, and the water companies are being forced to repair pipes.

The demand for water will increase throughout this century, and consequently more countries will turn to desalination as the solution to their decreasing water supplies. However, as water shortages become more widespread due to global warming, this alone will not be enough to solve the problem. Governments will be obliged to ensure that water companies operate efficiently and the public will learn that water is a precious resource to be used economically.

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