

Physical Geographer Roland Wahlgren, B.Sc., M.A.:

"There were haunting images of people starving and without enough water. I tried to think of a way to get water to these people."

Canadians are used to an abundance of natural resources including some of the world's largest supplies of fresh water. But after reports of contaminated municipal water and all the "unfit for swimming" signs around lakes, a safe drinking water supply does not seem to be a given any longer. It seems that just like with the energy crisis, Canadians are no longer immune to the world's water crisis.

In Sweden, the water table is at its lowest in over 30 years thanks to last year's hot summer. Norrland and the area around Stockholm and Uppsala are the hardest hit with many dried up wells. The situation is especially bad for people who have opted to live year round in summer cottages, only to realize that they do not have a reliable water supply. The residents of Stockholm with access to municipal water are doing fine as the city uses Lake Mälaren as its source of water.

Although Sweden's water "problems" are negligible seen from a universal perspective, the country is one of the most innovative when it comes to water supply. Many Swedish scientists specialize in hydrology, and Leif Ohlsson who wrote *Hydropolitics* about the third world's water crisis, and researcher Malin Falkenmark are regarded as trailblazers on this subject. The Global Water Partnership, that together with the World Water Council is the leading international water organization, is based in Stockholm and this is where the Swedish king

presents the annual Stockholm Water Prize, that has become the "Nobel Prize for everything in regards to water".

For now the western world has been spared any major water crisis but water has become a precious commodity in Africa, China, Southeast Asia, Southwest America and even in certain parts of Europe.

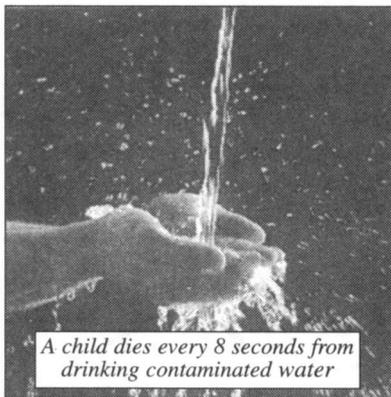
There are three ways to combat water shortages - war, conservation and technological innovation.

One of the least expensive methods of producing small amounts of water, that has been partly pioneered by Swedes, is dew collection. This is done by setting up a large piece of flat foil in the shade in weak winds where condensed dew is

collected in the same way that a legend would have us believe that the ancient Greeks did.

In Vancouver Swedish-Canadian physical geographer Roland Wahlgren has accelerated dew collection, working on developing atmospheric water vapour processing units that "produce water vapour from the air" by making air flow across a cold surface with a temperature lower than the dew point.

Wahlgren's Atmoswater Research water-cooler-sized unit produces 12 liters a day that is then treated by carbon filters and ultra-violet light to maintain purity. The unit would produce three times as much water in a humid climate such as in Southeast Asia, South Asia, the Middle East, Africa, and parts of South and Central America, and the West and East Indies.



Interview:

Swedish Press: How is the world's water situation today?

Roland Wahlgren: There are about 300 million people who are experiencing extreme water scarcity. Canada has the highest per capita consumption of water. 50 liters per person per day is put forth as a standard amount for drinking, cooking, bathing and hygiene. People in Canada use more than 200 liters per day including gardening, washing cars etc.

SP: What are the different ways of getting water and their relative costs?

RW: Of course the main sources are surface water from lakes, rivers and streams, and ground water. With surface water the main issue is purification. In places like Vancouver this is a minimal problem. In other places you have to do more cleaning. With ground water you run into the pumping expense and a lot of aquifers are being gradually depleted because they are being pumped out faster than the natural recharge. Desalination is used quite heavily in some countries in the Middle East and some Caribbean countries use a lot of desalination. Florida and California are using more and more desalination. Huge plants are being built there. Especially the type of desalination called reverse osmosis desalination has become a lot more economical as the technology improves. Reverse osmosis is where you use high pressure pumps to force salt water through a membrane and only the water molecules can pass through and the salt gets left behind on the other side. It's like a very fine filter. The