



**home innovation**<sup>®</sup>  
consulting network

**7 billion people –  
the need for innovation and  
behavioral changes**



The United Nations declared the 31st of October 2011 as a symbolic date in which the seven-billionth earthling was born. With one billion people in 1804 it's certainly a rapid growth, which is progressing dynamically. This is a particular challenge for the care of people with water today and even more tomorrow.

Besides the change in behavior such as including the more economical use of drinking water researchers around the world are challenged to find new sources and methods to generate drinking water and using it efficiently. The extraction from sea water by reverse osmosis seems to offer no solution, because it is energy intensive and the oceans are affected by the residual brine. Using methods that seem uneconomic today tomorrow will be calculable if they can be further developed. Many innovations are ultimately an evolution of a basic idea.

Shortages of water for survival increase the pressure on the economy – and social systems as well as on research and development of breakthrough innovations. Innovative concepts especially in the area of infrastructure are needed in order to avoid violent conflict around the water demand. Due to climate change there are even more desolate stretches of land water must be brought in water tankers or through pipelines over long distances to avoid a mass migrations. Gas and oil are certainly valuable and easier to replace than water (see news of September 2011). There is a remarkable invention by Marc Parent, which establishes a connection of alternative energy sources and the extraction of water. The Frenchman has developed a system that defies the generation of wind energy used by air and moisture condenses. The energy required for condensation, the plant thus by its own wind turbine. The system is designed small in size and can already be quickly installed and put into operation in remote areas or regions affected by natural disasters. In 2008 he founded the company Eole Water. In 2010 he received another grant from the community and proved that he could produce one cubic meter of water per day. His next, 50 feet high, water mill will be able to draw 5,000 liters of water per day from the air. Marc Parent got two patents and began to develop his new business (Source Blue economy).

Many ideas and patents on water can be found in Israel. Since Moses time the Jewish people are faced with the challenge of surviving in the desert. The efficient use of scarce water resources have required the farmers of the kibbutzim to innovate in the form of intelligent concepts for irrigation development. The irrigation company Netafim has emerged from a kibbutz in the Negev desert, according to the business press has in 2011 reached a value of some one billion U.S. \$.

Currently 1.1 billion people lack access to clean water and 2.4 billion people access to sanitation. Immunizations for most water-borne diseases including malaria, dengue fever and gastrointestinal infections are scarce and inadequate in developing countries. Common diseases, such as the gastro-intestinal complaints (including diarrhea) are caused by contaminated water.

Every 15 seconds a child dies in the world, because there is not enough clean drinking water. That's more than 2 million children a year. A further reason why the UN has declared: "Clean water is a human right". But this resolution does not give the right to water under international law, but rather to makes an appeal to the governments of affected countries, the developmental assistance from developed countries, and to every individual, to ensure that clean water is available everywhere.

A simple method to disinfect contaminated raw water and turn it into drinking water is to pour it into clear plastic bottles and leave for a few hours in the sun. The UV rays for the sun kill the bacteria causing the life-threatening diarrhea or other diseases. The method is called SODIS (Solar Water Disinfection) and is already used by over three million people in developing countries, particularly in Africa and parts of Latin America and Asia. “The problem is the acceptance of people”, says Martin Wesian about this type of drinking water. “They often do not know whether the water is actually already sterilized and can not believe that the method works.”

The new method: The water bottle is no longer simply being placed only in the sun, but you screwed a small device called a “wadi” at the bottleneck. Inside is a solar-powered electronics, a sensor measures the relevant UV radiation and to determine an accurate value for disinfection. “Thus considered, that UV radiation is higher or lower under certain circumstances”, says Wesian. A smiley face on the display indicates when the water is actually disinfected (Source: Solar Water Disinfection, Clean drinking water that is “cool”, Maria Kapeller). Innovations can only be successful if they include the ideas and behavior of people in their concept.

An old proverb says: “Necessity is the mother of invention.”  
Innovation is essential for survival in order to provide people with water.