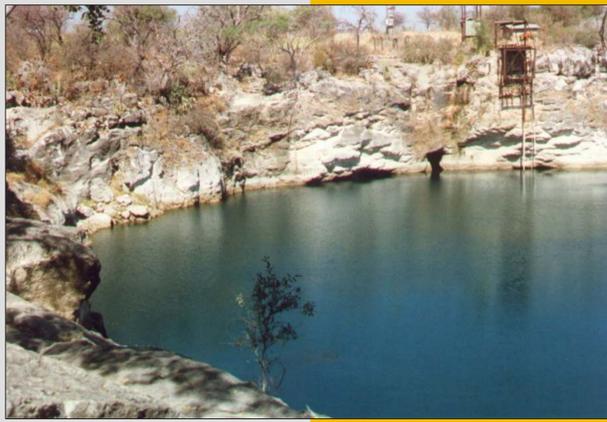




# Groundwater - reservoir for a thirsty planet?

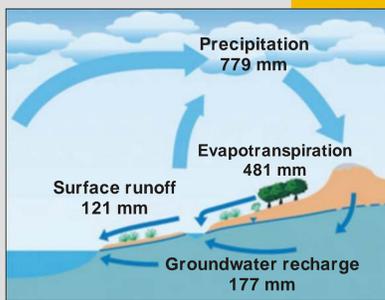


A collapsed subterranean karst cavity, Lake Otjikoto is one of the few places in Namibia, where groundwater can be seen at the surface

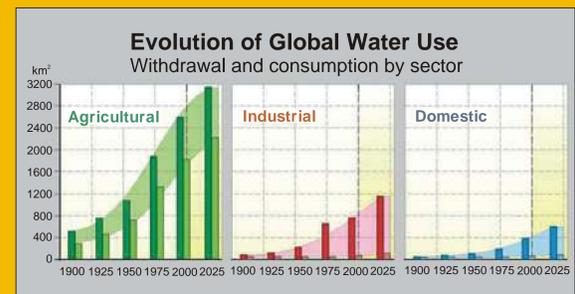
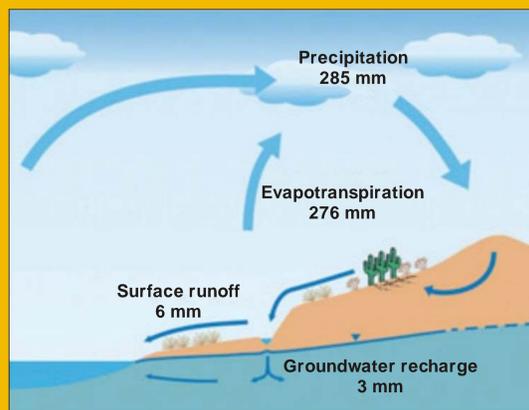
People's lives and livelihoods depend on water. Demand for clean water increases continually in line with world population growth. People in many areas of the world lack the fresh, drinkable water essential to their survival; if they are to prosper, more secure and low cost water supplies are needed.

Maintaining secure water supplies for drinking, industry and agriculture would be impossible without groundwater, the largest and most reliable of all freshwater resources. In many areas most drinking water is groundwater - up to 80 % in Europe and Russia, and even more in North Africa and the Middle East.

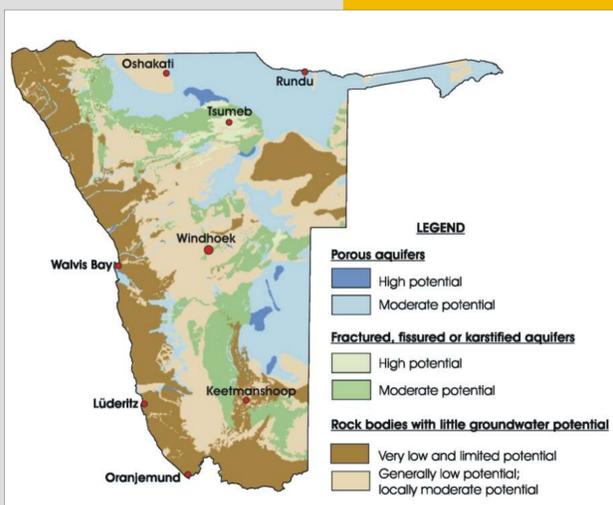
## The Careful and Sustained Exploitation of Groundwater Is Vital for Overcoming the Looming Global Water Crisis



The water cycle in an arid climate like that of Namibia (right) differs significantly from that in more humid regions (e.g. Central Europe, above)



Since the beginning of last century water use has increased drastically, partly due to steady population growth and partly to the introduction of water-intensive industries. Shaded areas indicate waste, i.e. the difference between withdrawal from the aquifer and actual water consumption



Groundwater potential depends not only on rainfall and evaporation, but also on the bedrock underlying a specific area: highly compacted, dense rock types, such as gneisses and granites, are incapable of storing water



Ai-Ais

Where there's water there's life, and veritable oases can be found in the vicinity of hot springs (Ai-Ais, left); an unusual sight in the heart of the Namib Desert is the normally dry Sossusvlei after heavy rains (above)

Water, without which life cannot exist, is an essential economic factor not only in the arid regions of the world... in a country like Namibia, where almost 50% of the surface area is desert or semi-desert, it is one of the most precious commodities. Indeed, the search for groundwater to sustain a growing population and their water-consuming activities (e.g. farming and mining, both of which require great amounts of water) is one of the major concerns of both private enterprise and the government. In co-operation with foreign agencies, a hydrogeological map of Namibia has been compiled to provide guidance in the search for groundwater, while airborne geophysical surveys have been conducted in different parts of the country to identify groundwater carrying rock layers (aquifers) at depth. During the last decade increasing attention has also been given to the problem of groundwater contamination, and potential sources of pollution, such as abandoned mine sites, garbage dumps and unplanned settlements are being identified and monitored.



When one of the many perennial rivers in northwestern Namibia comes down after heavy rainfalls, groundwater reservoirs are being recharged



In years of below average rainfall, groundwater has to supplement urban water demand (above: drilling operation near Windhoek; inset: fault-breccia of the Windhoek Aquifer). In rural areas most water comes from underground reservoirs pumped to the surface by windmills (left)



Only after exceptionally good rains the dams are filled to capacity (above: Hardap Dam, January 2006); a mere trickle of water brings patches of green even to the edge of the desert (Spitzkoppe, right)

