

Solutions for the water deficit



Ground water

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Problem

Lack of groundwater become a big problem these days. Groundwater is important and useful; many countries are depending on groundwater to supply clear, reliable water to the citizen. Here in Oman we have the same problem and it mostly exists in Al-Batinah coast where I live. You can utilize this type of water in many other areas such as farming, domestic and industrial. We must find solutions to these problems, to eliminate the deficit in the aquifer because this problem has many negative effects. These effects are a reduction in the level of the earth's surface and some dry wells because groundwater descent into the deep, forcing farmers often to deepen the pumps to reach the water but, this solution will cost them a lot. Drought pumps may cause dry conditions in some agricultural regions because they use pumps to provide water for their farms. Some citizen are suffering from drought because they depended on these wells to provide clear water for them to drink it, but, few of those citizen impacted by maxing of sea salt water fresh groundwater which Change water quality to become undrinkable and this cause shortage of clean drinking water.

In these areas like Al-Batinah people are also facing a shortage of drinking water. This issue exist in Oman before more than 30 years since the population rose. Farmers are more affected by this issue because they depend mostly on the ground water for agriculture. Citizens are suffering too because it is the main source of clean water which they drink. One of the

causes of this problem is saltwater intrusion, “ saltwater intrusion is the movement of seawater into aquifers and salt water mixing with ground water, which can contribute to ground water pollution and other consequences” (Wikipedia, 2014). We are facing this problem in Al-Batinah and Salalah coasts, a huge quantity of saltwater intrusion into the aquifers that contaminates clean water.

The second cause is water deficit in Al-Batinah coast which is about 350 million cubic meters per year because sea water goes through groundwater layers and this causes groundwater pollution. Rising population is another major cause for this issue, when the population increases the proportion of water consumption increases. The fourth reason of the shortage is lack of rainfall and this affect negatively on the storage of groundwater because; rain is the first source of the groundwater the rain Nourishes the water storage.

Solutions

Many countries started to solve this issue, for example, United Arab Emirates launched the project cloud-seeding for artificial rain and here is the meaning of cloud seeding,

“ Cloud seeding, a form of weather modification, is the attempt to change the amount or type of precipitation that falls from clouds, by dispersing substances into the air that serve as cloud condensation or ice nuclei, which alter the microphysical processes within the cloud.” (Wikipedia, 2014).

They do some research about the clouds for the operation then they send special airplane for this mission, they target clouds then they seed them, this operation has some consequences if they used it constantly due to the accumulation of silver iodide in the air, which is toxic. This operation cost around 11 million dollars.

In Australia and some cities in United States of America they used Aquifer Storage and Recovery Systems. Aquifer storage and recovery (ASR) is the re-injection of potable water back into an aquifer for later recovery and use. ASR has been done for municipal, industry and agriculture use" (Wikipedia, 2014). They dig many wells close to dams and they treat rainwater sea water and after that they inject the water to Tertiary aquifers to store it there to use it any time they need it; this plan was a huge success in Australia and USA and now they want to expand this project. In Egypt they used a strategy,

Integrated water resources management (IWRM) which has been defined by the Global Water Partnership (GWP) as " a process which promotes the coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems". (Wikipedia, 2014).

Concluding Statement

It is hard to choice one of them but, in my view ASR system is the best solution for the country because ASR unlike cloud-seeding it does not have any consequences; it has many benefits. In Al-Batinah we are suffering from <https://assignbuster.com/solutions-for-the-water-deficit/>

floods when the sky rain therefore, it is better to stop the floods by pumping the water to the ground to recharge the groundwater by this solution we do not waste any drop and we stop floods and at the same time we store groundwater.

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