Seawater supply network in coastal cities

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A Seawater Supply Network is proposed as a parallel and coexistent supply with the conventional general freshwater supply network, so that seawater can be used in all domestic processes and industrial plants that do not necessarily require fresh water. In this way, the consumption of fresh water is minimized and hydrological deficiencies are combated.

More than 50% of the world's population lives near the coast. It is generally the area most affected by droughts, far from swamps, mountains and rivers, where aquifers are often affected by salinization processes. This investigation was motivated and carried out in 2017/18 due to the great drought that Cape Town suffered. Cape Town became the first major world city to reach a drought limit situation. But this situation could happend to other coastal cities that are already seriously threatened by the same problem. Taking advantage of this form a virtually unlimited resource such as seawater, which constitutes 97% of the planet's water.

The great droughts, predicted by scientists for years, are a consequence of climate change and should not be counteracted by unsustainable industries such as desalination (so widespread by the world's coastlines) that only aggravate the problem with very high energy consumption , CO_2 emissions and waste production such as brine (discharged back into the sea with the consequent negative impact on the marine ecosystem).

The average water consumption per inhabitant per day, studied in Spain by the National Institute of Statistics, is 137 liters (in other countries even greater), of which we only drink 2 liters. Of the remaining 135 liters of water it is estimated that 90 of them could be seawater, also increasing the quality of life of the user with its use.

The cost of executing a seawater supply network would be amortized with the installation and operation cost of 10-year desalination plants.

This reduction of domestic consumption of fresh water on the coast could ensure and provide higher quality to the demand for drinking water, reducing diseases and threats of conflict between territories.

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