

Management of groundwater at salinisation risk

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Natural waters contain dissolved minerals from interactions with atmospheric and soil gases, mixing with other solutions, and/or interactions with the biosphere and lithosphere. In many cases, these processes result in natural waters containing solute or salinity above concentrations recommended for a specified use, which creates significant social and economic problems.

There are different measures, actions and practices for managing groundwater when the natural resource is exposed to salinization. Some of these measures have a mitigation objective. Other measures have a more adaptive approach and accept the high groundwater salinity but adjusting the groundwater use so that it is not harmful.

Moving from the lowest to the highest complexity, these approaches are the engineering approach, the discharge management approach, and the water and land management approach.

This research classifies the sources of groundwater salinization and defines in detail different management approaches to protecting the groundwater through salinization mitigation and/or groundwater salinity improvements. By focusing the attention on the effect of seawater intrusion, practical solutions are proposed.

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