

# Review of: "Saltwater Intrusion in Coastal Aquifers: A Comprehensive Review and Case Studies from Egypt"

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**Potential competing interests:** No potential competing interests to declare.

This study, which is supposed to constitute a review of the SWI problem in general and, in particular, in Egypt, is of great importance and should constitute a very good contribution.

The general idea of the paper is quite good, as well as the way it is structured. However, I have two serious questions:

Sections 4 to 8 should present a comprehensive state of the art in SWI studies, but the respective topics are covered rather superficially and do not adjust to a review of the methodologies, etc., currently used in SWI research.

## 9.- Case studies from Egypt

In this section, a series of studies conducted between 2021 and 2024 is briefly summarized and presented in chronological order. Aquifers referred to in this section are: Nile Delta, Quaternary Aquifer in Delta Wadi, Ras Sudr, Ras El Hekma, Quaternary aquifer in the north Sinai coastal area, Rafah, Gamosa and Ras El Bar, El Arish, Sidi Abdel Rahmean, El Akaba Gulf. It is not possible to know where these aquifers are located or their geographical extension. It is highly recommended to include a figure comprising a map indicating the location of these aquifers, or zones. It is important to clearly state what is implied by the Nile Delta aquifer (location, extension, and sub-aquifers constituting it). Most of these studies are clearly related to the Nile Delta aquifer.

The effect of sea water rise due to climate change is the subject of several studies. In the case of the Nile Delta aquifer, several studies are cited that analyze this question based on different methodologies and provide their own results, which are not contrasted. Geochemistry, geophysics, and other tools are used to study aspects of the SWI in this aquifer as well as in the other aquifers. The presentation of these studies has a bibliographic nature, but a synthetic analysis of these works is lacking. It is recommended to conduct a synthesis of the results and methodologies for each of the mentioned aquifers (or zones), which would be a great contribution to highlighting the state of the art of SWI research in Egypt.

Discussion of the results of these studies should be made, indicating their contributions to the SWI question. Based on this analysis, an assessment of the methodologies and results should be undertaken, indicating the state of knowledge of the SWI in the aquifers mentioned, and providing insights on future lines of research.

Conclusions (and Abstract) should be based on this Discussion section.

Referenced studies are mostly related to studies focused on Egypt, which is okay for section 9, but not enough for

sections 4 to 8.

Based on these considerations, I do not recommend the publication of this manuscript. It can be accepted after consideration of the aspects highlighted above.

The manuscript can be limited to an analysis of studies of SWI in Egypt and avoid sections 4 to 8.

Sincerely,

Oscar Campos