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

Chandra Dwivedi[1]

1 Central University of Jharkhand

Potential competing interests: No potential competing interests to declare.

Saltwater Intrusion in Coastal Aquifers: A Comprehensive

Review and Case Studies from Egypt

Review comments:

In this paper, the authors have emphasized the issue of seawater intrusion, a common coastal challenge that countries around the world are encountering. Given Egypt's limited water resources, which include the Nile River as the primary source and minimal rainfall, the authors are keen to raise awareness of this impending problem among the public and government authorities.

As a review paper, the authors primarily concentrate on an extensive examination of the existing literature. However, this paper needs to be improved significantly to be accepted for publication.

There are several suggestions to enhance the quality of the paper:

- In the Introduction section: Most of the text is a list of sources of water consumed by people, while the authors spend little time explaining the reasoning and the problem to justify their study (Saltwater Intrusion in Coastal Aquifers in Egypt). It is better to define saltwater intrusion in the introduction to the article.
- The sections of `Introduction' and `Conclusion' are highly generalized. In the 1st sentence itself, the authors have given a recommendation. It is not clear what exactly the authors need to convey about the research component through this paper.
- It is recommended to incorporate a base map of Egypt's coastal area that highlights zones potentially vulnerable to seawater intrusion (SWI). At the beginning of the paper, under the "Introduction" chapter, it would be more effective to present the problem in a general context rather than relying solely on the authors' references.
- It is advisable to include an overview of the country's general topography, physiography, climate (including annual rainfall), hydrogeology, and geology on a regional scale. Information on water table conditions, aquifer types, and their recharge sources should also be mentioned. Additionally, surface water bodies such as rivers, canal networks, ponds, and tanks should be represented on a map.
- The authors should consider gathering available hydro-chemical data along the sea coast from different agencies. Presenting this data in graphical form would substantiate the discussion on SWI.

- Moreover, the paper should examine other potential sources of groundwater pollution in the country, such as urbanization, irrigation, industrial activities, or domestic sewage.
- The description of the sections (5, 6, 7, 8) needs to be elaborated. On page 4/23, the equation needs correction, and the figure number is missing on page 13/23.
- In section 9, the authors recommended `multi-purpose management of groundwater resources' before analyzing their datasets. The contribution of each author towards SWI is given in a separate paragraph, which is not the style of writing for the paper. Authors should improve the writing style by synthesizing the results.