

Review of: "Groundwater Potential Zone Assessment Using Remote Sensing, Geographical Information System (GIS), and Analytical Hierarchy Process (AHP) Techniques in Fogera Woreda, South Gondar Zone, Ethiopia"

Hanane Reddad¹

¹ Faculté des Sciences Ain Chock - Casablanca

Potential competing interests: No potential competing interests to declare.

This study highlights the significance of groundwater, the factors influencing its presence, and the role of geospatial techniques in assessing groundwater potential. Focusing on the Fogera Woreda area in the South Gondar Zone, Ethiopia, the research aims to assess groundwater potential zones. By integrating the analytical hierarchy process (AHP), remote sensing (RS), and geographic information system (GIS), the study identifies distinct groundwater potential zones across various thematic layers. These layers involve land use and land cover (LULC), topographic wetness index (TWI), drainage density, lineament density, geology, slope, rainfall, elevation, and soil texture. The results reveal spatial variations in groundwater potential, with excellent, moderate, poor, and extremely poor zones covering different percentages of the study area. These results can guide decision-making processes and the development of effective groundwater management strategies in the region.

The piece of work is well-illustrated. The subject is topical and of great interest, highlighting that :

- Geospatial techniques emerge as cost-effective and time-efficient tools for delineating potential groundwater zones. Their application streamlines resource allocation and management.
- The application of geospatial techniques and AHP in groundwater potential mapping is a crucial tool for “future investigations” which facilitates informed decision-making by prioritizing factors and integrating diverse data layers.

In summary, the paper aligns well with the journal's scope and merits publication. **Addressing the suggested refinements below will enhance its overall quality :**

- **Clarify the study's purpose or research question early in the introduction. This will provide a clear roadmap for readers.**
- **Some sentences could be more concise for better readability.**
- **Review sentence structure and transitions for smoother flow.**