

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"

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Potential competing interests: No potential competing interests to declare.

In this paper, the authors use Geographic Information Systems (GIS) and remote sensing, together with the Analytical Hierarchy Process, to map the groundwater potential of an area of Ethiopia. The article is quite interesting, but not well-written and too simplistic. English language and style should be improved.

In my opinion, the references given in the first part of the Introduction are not the most appropriate for the general definitions reported.

I think that the presence of roads in the study area is not important information. I would prefer to see some information about the soils of the area. What is a Belgian season?

The first sentences of section 2.3 are a description of the data and should be moved to the previous section.

The map in Figure 4 is not a soil map, but a soil texture map. The classification method used for soil texture is not mentioned anywhere.

How were the classes of slope, drainage density, lineament density, annual rainfall, distance from rivers, Topographic Wetness Index, and elevation defined? And why does the latter have 5 classes instead of 4?

The title of the legend is missing in Figure 6.

The terms of the equation on page 8 should be made explicit in the text. Equations are not numbered.

A proper reference should be given for TWI.

Why do the maps in Figures 10 and 11 appear to be represented as rasters, while the others appear as vectors?

Most of the acronyms in Tables 2 and 3 were not defined anywhere.

The matrix in Table 2 is not symmetric. Since a Pairwise Comparison matrix is formed by making paired reciprocal comparisons, symmetry is a striking characteristic of this matrix.

Random Consistency Index is not explained anywhere.

The title of the legend is missing in the map in Figure 13, and how the classes were defined is not explained anywhere. Table 4 is not a classification but a zonal statistics.

The map in Figure 14 could be improved by indicating the wells with symbols linked to the quantity of water flow, and the measurement unit should be made explicit – what is intended with LPM?

The discussion of the results is poor.

The sentence “These layers are independently prepared from disparate spatial resolutions and are subsequently resampled to a uniform spatial resolution” is not a conclusion, and this was not mentioned anywhere before. Moreover, the Conclusions section should not simply reiterate the Results and/or the Discussion, but rather present the outcome of the work by interpreting the findings at a higher level of abstraction, provide some conclusive remarks, and eventually mention future research directions.

The text should be carefully checked also for typographical and format errors.

References are insufficient for an international research article; they should be 30-60, typically. Coulson and Ferrari (2019), Belay & Meleses (2022), and Saati (1980) are not reported in the reference list, while Berihun (2019), Jaiswal et al. (2003), Magesh et al. (2012), Nag and Ghosh (2013), and Owolabi et al. (2020) are not cited in the text.