

REVIEWER'S REPORT

Manuscript No.: IJAR-59579

Title: Use of in situ analyses to assess salinity risk in the interdune depressions of the southern Korama valley (Niger),

Recommendation:

Accept as it is

Accept after **minor revision**.....

Accept after major revision

Do not accept (*Reasons below*)

Rating	Excel.	Good	Fair	Poor
Originality		Good		
Techn. Quality		Good		
Clarity		Good		
Significance		Good		

Reviewer's ID: JPR- 115 Dr Thirunahari Ugandhar

Detailed Reviewer's Report

Title: Use of In Situ Analyses to Assess Salinity Risk in the Interdune Ponds of the Southern Korama Valley (Niger)

The manuscript addresses an important environmental issue concerning the seasonal salinization of interdune ponds in the southern Korama Valley, Niger. The study is relevant to water resource management, sustainable agriculture, and environmental monitoring in semi-arid regions. The use of in situ measurements and spatial interpolation provides useful preliminary information on seasonal changes in water quality. However, certain aspects require improvement to strengthen the scientific quality of the manuscript.

Major Comments:

Methodology: The authors should provide details regarding sampling site selection, geographical coordinates, instrument calibration, and measurement accuracy.

Statistical Analysis: The reported increases in electrical conductivity (EC) and total dissolved solids (TDS) should be supported by appropriate statistical analysis, including measures of variability.

Salinisation Risk Index: The authors should clearly explain the calculation, classification thresholds, and scientific justification for the salinisation risk index (SRI).

Spatial Interpolation: The authors should justify the use of inverse distance weighting (IDW) with 21 sampling sites and acknowledge its limitations.

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Discussion: The proposed role of evaporation, shallow groundwater, and salt-bearing geological formations in salinisation requires stronger supporting evidence. The authors should distinguish observed results from inferred mechanisms.

Environmental Implications: The authors should discuss the potential effects of saline water on irrigation, crop productivity, and rural water resources, with reference to appropriate water-quality standards.

Presentation: The incomplete keyword section in the French abstract and the truncated English abstract should be corrected. The authors should also improve language, formatting, unit consistency, and reference presentation.

Recommendation: Major Revision

Overall, the study has scientific and practical relevance. Addressing the above comments, particularly those concerning methodology, statistical analysis, and interpretation of salinity patterns, would improve the manuscript's clarity, reliability, and suitability for publication.