



Paper: “Analyse des Facteurs de Surconsommation d’Eau de la SONEB dans les Casernes Militaires du Bénin et Évaluation de Leurs Impacts Économiques”

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Peer review:

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Reviewer 3: Kamarou Faré Kondo
Université de Lomé, Togo

Reviewer 4: Blinded

ESJ Manuscript Evaluation Form 2026

This form is designed to summarize the manuscript peer review that you have completed and to ensure that you have considered all appropriate criteria in your review. Your review should provide a clear statement, to the authors and editors, of the modifications necessary before the paper can be published or the specific reasons for rejection.

Please respond within the appointed time so that we can give the authors timely responses and feedback.

NOTE: ESJ promotes peer review procedure based on scientific validity and technical quality of the paper (not perceived the impact). You are also not required to do proofreading of the paper. It could be recommended as part of the revision.

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Date Manuscript Received: 2026-03-12	Date Review Report Submitted: 2026-03-18
Manuscript Title: The ANALYSE DE LA SURCONSOMMATION D'EAU DE SONEB DANS LES CASERNES MILITAIRES DU BENIN ET EVALUATION DES COÛTS ASSOCIES: ANALYSIS OF SONEB'S EXCESSIVE WATER CONSUMPTION IN MILITARY BARRACKS IN BENIN AND ASSESSMENT OF ASSOCIATED COSTS	
ESJ Manuscript Number: 20138-Article Text-60356-1-4-20260312	
You agree your name is revealed to the author of the paper: No	
You approve, your name as a reviewer of this paper, is available in the "review history" of the paper: No	
You approve, this review report is available in the "review history" of the paper: Yes	

Evaluation Criteria:

Please give each evaluation item a numeric rating on a 5-point scale, along with a thorough explanation for each point rating.

Questions	Rating Result [Poor] 1-5 [Excellent]
1. The title is clear and it is adequate to the content of the article.	2
<i>While the title explicitly states the authors' intended topic (overconsumption), an in-depth reading of the manuscript reveals that it is fundamentally misleading and creates severe confusion. By framing the entire study around "surconsommation" right from the title, the authors lock themselves into a narrative that their own empirical data (Table 2) actively contradicts. As demonstrated below, 2 out of 3 barracks are actually under-consuming water according to WHO standards. Therefore, the title reflects a massive a priori confirmation bias rather than the actual empirical reality presented in the paper.</i>	
2. The abstract presents objectives, methods, and results.	2
<i>The abstract is critically flawed and misrepresents the paper.</i>	

<ol style="list-style-type: none"> 1. <i>Epistemological error: It states "Average consumption was estimated at 50 liters per soldier per day according to WHO." The WHO recommends 50L as a standard; it does not "estimate" consumption.</i> 2. <i>Methodological omission: It completely ignores the qualitative survey (N=150), mentioning only SONEB data.</i> 3. <i>Syntax: The English translation is structurally broken and unpublishable (e.g., "the results show that the barracks... recorded SONEB's water consumption... is approximately 500,577 m³").</i> 	
3. There are a few grammatical errors and spelling mistakes in this article.	3
<p><i>The manuscript is generally readable but requires careful proofreading for internal consistency. For instance, figure numbering needs correction (there are two distinct "Figure 1"s). Also, please ensure that the nomenclature for the barracks remains consistent throughout the text (e.g., choosing between "Camp Séro Kpéra" or "Forces des Armées Populaires" and sticking to it) to help the reader follow the analysis smoothly.</i></p>	
4. The study methods are explained clearly.	3
<p><i>The methodology needs significantly more transparency to support the results.</i></p> <ol style="list-style-type: none"> 1. <i>The study relies on a survey of 150 individuals across 9 barracks (averaging ~16 respondents per location). The authors should acknowledge this small sample size as a limitation when generalizing behaviors.</i> 2. <i>There is an asymmetry that needs a brief explanation: why does the survey cover 9 barracks, but the SONEB data (Table 2) only covers 4?</i> 3. <i>Most importantly, the authors present pie charts (Figures 6-14) with exact percentages for water usage. Since it is stated that there are no sub-meters, the authors must explicitly explain how these percentages were calculated (e.g., are they based on the survey respondents' estimations?).</i> 	
5. The results are clear and do not contain errors.	2
<p><i>The dataset is fascinating, but a closer mathematical look at Table 2 reveals a very interesting paradox that the authors have overlooked. If we calculate the daily per-capita consumption for 2018:</i></p> <ul style="list-style-type: none"> • <i>ENSA: $770 \text{ m}^3 / 253 \text{ pax} \approx 8.3 \text{ Liters/day/pax}$.</i> • <i>Camp de Ouidah: $18,296 \text{ m}^3 / 1446 \text{ pax} \approx 34.6 \text{ Liters/day/pax}$.</i> • <i>Camp Séro Kpéra: $95,199 \text{ m}^3 / 850 \text{ pax} \approx 306 \text{ Liters/day/pax}$.</i> <p><i>The data shows that 2 out of the 3 calculable barracks are actually consuming less than the 50L WHO standard. This is a major scientific finding! Rather than concluding that there is systemic overconsumption, the authors should highlight this massive disparity. Why is Séro Kpéra consuming 36 times more than ENSA? This nuance will greatly enrich the paper. Additionally, please provide the missing "Effectif moyen" for Camp Guézo in Table 2.</i></p>	
6. The conclusions or summary are accurate and supported by the content.	3
<p><i>The conclusion offers good practical recommendations. However, the theoretical conclusion relies heavily on a sudden figure introduced in the discussion: "la consommation moyenne d'eau [...] est estimée à 170 litres". This figure appears out of nowhere and is not demonstrated in the Results section. The authors need to explicitly show the mathematical</i></p>	

<i>calculation used to reach this 170L average before comparing it to the French military standard.</i>	
7. The references are comprehensive and appropriate.	4
<i>The bibliography includes relevant literature, but it requires a formatting cleanup. There are a few duplicate entries that need to be merged or removed (e.g., References 13/14 are the same paper by Olivier & Gaye; 24/25 are the same UNESCO report; 29/30 are the same thesis by Zossou).</i>	

Overall Recommendation (mark an X with your recommendation) :

Accepted, no revision needed	
Accepted, minor revision needed	
Return for major revision and resubmission	
Reject	

Comments and Suggestions to the Author(s):

Dear Authors, congratulations on undertaking such an original and challenging study. Accessing institutional SONEB utility data for military facilities is exceptionally difficult, and you have managed to compile a rare and highly valuable dataset that has immense potential to influence public policy and resource management in West Africa. To help you elevate this promising manuscript to the high standards of the journal, I have carefully reviewed your work. Your dataset is actually a hidden treasure trove, but your current analytical narrative does not yet do justice to the richness and nuance of your own numbers. The following major revisions are designed to help you unlock the full scientific potential of your paper.

First, regarding the central narrative of systemic "surconsumation," an objective mathematical reading of your raw data in Table 2 reveals a much more fascinating story of massive institutional disparity. When calculating the daily per-capita consumption for the year 2018 based on your figures, ENSA consumes approximately 8.3 liters per day (severe under-consumption), Camp de Ouidah consumes 34.6 liters per day (efficient, below the WHO limit), and only Camp Séro Kpéra shows massive overconsumption at 306 liters per day. Your data actually shows that two out of the three calculable bases are consuming below the WHO threshold. This is a major scientific finding! I strongly encourage you to pivot your narrative to focus on this massive disparity rather than claiming systemic waste. Exploring why Séro Kpéra consumes 36 times more water than ENSA will make your paper profoundly more interesting and impactful.

Second, the origin of the 170 liters average introduced in your Discussion requires greater transparency. Because the statement that average consumption is estimated at 170 liters per soldier per day forms the foundation of your comparison with the French military, its calculation cannot be omitted. Please add a sentence or a formula in the Results section explicitly showing how you calculated this aggregate average. Transparency builds academic trust and will clarify your methodology for the readers.

Third, the methodological clarity regarding the volumetric pie charts (Figures 6 to 14) needs to be addressed. You present beautifully formatted pie charts with exact percentages for specific water end-uses, such as 93% versus 7%. However, you explicitly acknowledge the absence of sub-meters within the barracks. Please clarify in your Methodology exactly how these percentages were derived. If they are based on estimations from your 150 survey respondents,

simply state this clearly and add a brief note in the "Limitations" section regarding the use of perception-based data to protect your work from methodological critiques.

Fourth, your valuable fieldwork should be properly valorized to ground the factors contributing to wastage. Currently, these factors are presented as a theoretical text. Since you conducted 150 field surveys, this is the perfect place to let that empirical data shine. I suggest transforming these theoretical points into descriptive statistics. For example, explicitly state what percentage of surveyed personnel reported observing unaddressed leaks, or what percentage admitted to using SONEB water for vehicle washing. This will give your qualitative fieldwork the spotlight it deserves and provide empirical weight to your claims.

Finally, to ensure the manuscript is perfectly polished for publication, a few structural details must be addressed. Please provide the missing average personnel data for Camp Guézo in Table 2 so its consumption can be analyzed. Additionally, standardize the names of your barracks throughout the text, choosing, for instance, between "Camp Séro Kpéra" and "Forces des Armées Populaires" and sticking to it. Furthermore, correct the figure numbering by removing the duplicate Figure 1, clean your bibliography to remove duplicate entries (such as references 13 and 14, 24 and 25, and 29 and 30), and consider having the English abstract proofread to improve its syntactic flow.

You have laid a very strong foundation with a truly remarkable dataset. By aligning your narrative with the actual, nuanced reality of your numbers, this paper will become an outstanding contribution to the field. I look forward to reading your revised manuscript!

Comments and Suggestions to the Editors Only:

Reviewer A:

Recommendation: Resubmit for Review

The TITLE is clear and it is adequate to the content of the article.

The title could be improved further; I suggested a change to the title within the article during the review

The ABSTRACT clearly presents objectives, methods, results, and conclusions.

The abstract is poorly worded as it does not provide clear information on the study's methods, results and conclusions

There are a few grammatical errors and spelling mistakes in this article.

The work contains fewer grammatical errors and is acceptable overall

The study METHODS are explained clearly.

The methodological approaches are not outlined and do not provide any clear guidance on the work.

The results are clear and do not contain errors.

The figures have not been properly analysed and are not taken into account in the commentary on the texts. This section of the work needs to be completely rewritten.

The CONCLUSION or summary is accurate and supported by the content.

The conclusion does not highlight the data, the methodological approaches or the key findings. This section also needs to be revised, as most readers spend time on the abstracts and conclusions before turning their attention to the full text.

The list of REFERENCES is comprehensive and appropriate.

The authors cited in the text are listed in the bibliography.

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the RESULTS of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

4

Overall Recommendation!!!

Return for major revision and resubmission

Comments and Suggestions to the Author(s):

I recommend that the applicant take this revision into account in order to improve the work, as there are many typos in the document

Reviewer B:

Recommendation: Revisions Required

The TITLE is clear and it is adequate to the content of the article.

The title is clear and appropriate for the content of the article

The ABSTRACT clearly presents objectives, methods, results, and conclusions.

Le résumé ne présente que les résultats. il manque l'objectif de l'étude et la méthodologie adoptée.

Il faut revoir le résumé en incluant l'objectif de l'étude et la méthodologie

The abstract presents only the results. It does not include the study's objective or the methodology used.

The abstract needs to be revised to include the study's objective and the methodology.

There are a few grammatical errors and spelling mistakes in this article.

L'article est assez bien rédigé sans trop de fautes

The article is fairly well written, with few errors.

The study METHODS are explained clearly.

Il faut revoir la méthodologie et bien préciser la population totale de laquelle est issue l'échantillon enquêté

The methodology needs to be revised, and the total population from which the surveyed sample was drawn must be clearly specified

The results are clear and do not contain errors.

Les résultats sont clairs et assez-bien présentés

The results are clear and fairly well presented

The CONCLUSION or summary is accurate and supported by the content.

La conclusion est claire et découle des résultats obtenus de l'étude

The conclusion is clear and follows logically from the study's results.

The list of REFERENCES is comprehensive and appropriate.

Les références doivent être revus et respecter les normes de citations. Ajouter les DOI à chaque référence s'il y en a.

The references must be revised to comply with citation standards. Add the DOI to each reference, if available

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]

3

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]

2

Please rate the RESULTS of this paper.

[Poor] 1-5 [Excellent]

5

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]

3

Overall Recommendation!!!

Accepted, minor revision needed

Comments and Suggestions to the Author(s):

L'auteur doit revoir la méthodologie, si possible utilisez la formule de détermination de la taille de l'échantillon en fonction de la population totale. il faut revoir les références et bien les citer.

The author should revise the methodology; if possible, use the formula for determining sample size based on the total population. The references need to be reviewed and properly cited.

Reviewer C:

Recommendation: Revisions Required

The TITLE is clear and it is adequate to the content of the article.

The title is clear and reflects the general topic of the study. However, it is quite long and could be simplified to improve readability and clarity.

The ABSTRACT clearly presents objectives, methods, results, and conclusions.

The abstract presents the main objective and the general results of the study. However, the structure could be improved to better separate the objectives, methods, key results, and conclusions. Some sentences are grammatically incorrect and should be revised for clarity.

There are a few grammatical errors and spelling mistakes in this article.

The manuscript contains several grammatical errors and awkward sentence constructions in English. A thorough language revision by a native English speaker or professional editing service is recommended.

The study METHODS are explained clearly.

The methods section provides a general description of the data collection process. However, several methodological aspects remain unclear, including sampling justification, data reliability, and statistical treatment. More details are needed to ensure scientific rigor.

The results are clear and do not contain errors.

The results section presents useful information on water consumption patterns in military barracks. However, some results are descriptive and would benefit from deeper statistical analysis and clearer presentation of figures and tables.

The CONCLUSION or summary is accurate and supported by the content.

The conclusion summarizes the main findings of the study. However, it could be strengthened by clearly linking the conclusions to the study objectives and highlighting practical implications for water management policies.

The list of REFERENCES is comprehensive and appropriate.

The reference list includes relevant literature, but several references appear incomplete or duplicated. The authors should verify consistency between in-text citations and the reference list and ensure proper formatting.

Please rate the TITLE of this paper.

[Poor] 1-5 [Excellent]

4

Please rate the ABSTRACT of this paper.

[Poor] 1-5 [Excellent]
3

Please rate the LANGUAGE of this paper.

[Poor] 1-5 [Excellent]
2

Please rate the METHODS of this paper.

[Poor] 1-5 [Excellent]
2

Please rate the RESULTS of this paper.

[Poor] 1-5 [Excellent]
3

Please rate the CONCLUSION of this paper.

[Poor] 1-5 [Excellent]
3

Please rate the REFERENCES of this paper.

[Poor] 1-5 [Excellent]
3

Overall Recommendation!!!

Return for major revision and resubmission

Comments and Suggestions to the Author(s):

This manuscript addresses an important topic related to water consumption and management in military institutions in Benin. The study provides useful data on water usage patterns and associated costs. However, the manuscript requires substantial revisions before it can be considered for publication.

In particular, the language needs significant improvement, the methodological description should be clarified, and the presentation of results could be strengthened with clearer statistical analysis and improved figure descriptions. Additionally, several references need to be verified for completeness and consistency.

I encourage the authors to carefully revise the manuscript to improve its scientific rigor and readability.
