

Journal Name:	<a href="#">Journal of Applied Chemical Science International</a>
Manuscript Number:	<b>Ms_JACSI_12638</b>
Title of the Manuscript:	<b>Health Risk Assessment of Heavy Metals in African Catfish (<i>Clarias gariepinus</i>) from Fish Ponds in Port Harcourt, Rivers State, Nigeria</b>
Type of the Article	

**PART 1: Comments**

	<b>Reviewer's comment</b>	<b>Author's Feedback</b> <i>(Please correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>Please write a few sentences regarding the importance of this manuscript for the scientific community. A minimum of 3-4 sentences may be required for this part.</b>		
<b>Is the title of the article suitable? (If not please suggest an alternative title)</b>		

<p><b>Is the abstract of the article comprehensive? Do you suggest the addition (or deletion) of some points in this section? Please write your suggestions here.</b></p>		
<p><b>Is the manuscript scientifically, correct? Please write here.</b></p>		
<p><b>Are the references sufficient and recent? If you have suggestions of additional references, please mention them in the review form.</b></p>		

<p>Is the language/English quality of the article suitable for scholarly communications?</p>		
<p><u>Optional/General</u> comments</p>	<p style="text-align: center;"><b>Article Review with Comments and Suggestions</b></p> <p><b>Title</b></p> <p><b>Health Risk Assessment of Heavy Metals in African Catfish (<i>Clarias gariepinus</i>) from Fish Ponds in Port Harcourt, Rivers State, Nigeria</b></p> <ul style="list-style-type: none"> <li>• <b>Comment:</b> The title is clear and informative. Consider including the methods or specific results briefly, if the study's focus warrants it, e.g., "A Quantitative Analysis" or "Using Spectrometry."</li> </ul> <p><b>Abstract</b></p> <p><b>Comment:</b> The abstract provides a comprehensive overview of the study. However:</p> <ol style="list-style-type: none"> <li>1. Avoid redundancy in phrases like "associated health risks" and "health risks were evaluated".</li> <li>2. Suggest shortening the explanation of results to make it more concise.</li> </ol> <p><b>Suggestion:</b> Combine the key findings more succinctly to maintain focus.</p> <p><b>Introduction</b></p> <ol style="list-style-type: none"> <li>1. "Pollution, whether direct or indirect, adversely impacts aquatic ecosystems</li> </ol>	

	<p>and, consequently, poses risks to human health.”</p> <ul style="list-style-type: none"><li>○ <b>Comment:</b> Specify "direct" and "indirect" pollution types briefly to enhance understanding.</li><li>○ <b>Suggestion:</b> Mention examples such as industrial effluents for direct and agricultural runoff for indirect pollution.</li></ul> <p>2. “They can enter the human body through inhalation, ingestion, and dermal.”</p> <ul style="list-style-type: none"><li>○ <b>Comment:</b> This is incomplete.</li><li>○ <b>Suggestion:</b> Replace "dermal" with "dermal absorption or contact."</li></ul> <p>3. “Some heavy metals, such as copper and cobalt, are required in small amounts...”</p> <ul style="list-style-type: none"><li>○ <b>Comment:</b> The distinction between essential and toxic metals is crucial. However, “become enzyme inhibitors” requires elaboration.</li><li>○ <b>Suggestion:</b> Add an example of toxicity, such as "at high levels, copper may cause oxidative stress."</li></ul> <p>4. <b>Overall Comment:</b> This section effectively contextualizes the problem but could benefit from more seamless transitions between concepts and added</p>	
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references for global relevance.

## **Materials and Methods**

### **1. Study Area Description**

- "Port Harcourt located at approximately 4.8155° N latitude and 7.0493° E longitude..."
  - **Comment:**  
Grammatically awkward.
  - **Suggestion:** Rephrase to "Port Harcourt is located at approximately..."

### **2. Collection and Determination of Heavy Metals in Fish Samples**

- The process is well-detailed, but the "digestion process" section appears dense.
- **Comment:** Use subheadings or bullet points for clarity.
- **Suggestion:** Reorganize for readability, e.g., separate steps for digestion and filtering.

### **3. Human Health Risk Assessment**

- Equations are referenced but not formatted clearly for readability.
- **Comment:** Ensure all variables in the equations are defined

consistently.

- **Suggestion:** Use a numbered list or table to separate formula components.

## **Results and Discussion**

### **1. Tables**

- Tables are informative but lack captions explaining their significance.
- **Comment:** Include detailed captions, e.g., "Table 1: Cadmium levels in fish samples compared to WHO standards."

### **2. Heavy Metal Analysis**

- "Nickel concentrations ranged from 0.259 to 0.956 mg/kg, and while the WHO does not provide specific guidelines for Ni in fish..."
  - **Comment:** Mention why WHO guidelines are unavailable. Add another credible standard if possible.

### **3. THQ and HI Values**

- "The THQ values for all metals were below 1, indicating no significant non-carcinogenic health risks."

	<ul style="list-style-type: none"><li>▪ <b>Comment:</b> Excellent clarity, but “significant non-carcinogenic” could be simplified.</li><li>▪ <b>Suggestion:</b> Use "indicating negligible health risks."</li></ul> <p><b>4. Discussion of Risks</b></p> <ul style="list-style-type: none"><li>○ “However, the levels of lead (Pb), cadmium (Cd), and nickel (Ni) in their study were higher...”<ul style="list-style-type: none"><li>▪ <b>Comment:</b> Include the possible reason for higher levels in previous studies (e.g., geographical or industrial factors).</li></ul></li></ul> <p><b>Conclusion</b></p> <p><b>1. Summary of Findings</b></p> <ul style="list-style-type: none"><li>○ "While zinc and copper concentrations remained safe, iron levels again surpassed the standard, signaling potential risks."<ul style="list-style-type: none"><li>▪ <b>Comment:</b> Suggest specifying the percentage or extent of the exceedance for emphasis.</li></ul></li></ul>	
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## 2. Recommendations

- "Continuous monitoring of heavy metal levels is essential to prevent long-term impacts..."
  - **Comment:** This is important but could be expanded.
  - **Suggestion:** Suggest frequency of monitoring or specific actions (e.g., "quarterly monitoring and implementing advanced filtration in ponds").

### General Comments

#### 1. Language

- The language is mostly formal and scientific, appropriate for a research article. However, some sentences are overly lengthy.
- **Suggestion:** Break down long sentences for readability.

#### 2. References

- Many references are cited correctly, but there are some repetitions (e.g., Leonard, 2022).
- **Suggestion:** Cross-check for duplicates and ensure consistency in formatting.

	<p><b>3. Visual Aids</b></p> <ul style="list-style-type: none"> <li>○ Maps and tables are helpful but need enhanced visual quality or clearer legends.</li> </ul> <p><b>Final Suggestions</b></p> <ul style="list-style-type: none"> <li>• Review grammatical errors, especially in complex sentences.</li> <li>• Highlight implications of the findings more prominently in the abstract and conclusion.</li> <li>• Add potential mitigation strategies for heavy metal contamination.</li> </ul>	
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**PART 2:**

	<b>Reviewer's comment</b>	<b>Author's comment</b> <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
<b>Are there ethical issues in this manuscript?</b>	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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