

Review of: "Larache's Coastal in Morocco: Evaluating Dredging's Impact on Fisheries and Shorelineevolution"

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Potential competing interests: No potential competing interests to declare.

Thank you for the invitation to review the manuscript submitted to the esteemed journal, Qeios. I read the manuscript "Qeios ID: LA99QQ," authored by Saddik et al., which presents a study investigating Larache's Coastal in Morocco: Evaluating Dredging's Impact on Fisheries and Shoreline Evolution. The paper comprehensively examines the consequences of dredging activities on the Larache coastal area from both a physical and biological perspective. It evaluates the impacts on the coastline, fishery resources, and overall marine ecosystem.

Due to the importance of this paper, I would like to present both major and minor comments for your consideration:

Title: Larache's Coastal in Morocco: Evaluating Dredging's Impact on Fisheries and Shoreline Evolution..... it must be Shoreline Evolution..... not Shorelineevolution

Major comments:

-Abstract: The abstract would benefit from being more specific in the details provided, directly linking the conclusions to the results shown, including references to support the findings, and acknowledging the limitations of the study. Such improvements would enhance the robustness and persuasiveness of the conveyed impacts and findings.

1. The abstract does not clearly state the years/timeframe that was analyzed for changes to the coastline and fisheries. More precise dates would strengthen the context.
2. Lack of acknowledgement of limitations. The methods and data have potential limitations that are not mentioned, such as uncertainty inherent in satellite data or influence of unquantified natural factors. Addressing limitations provides objectivity.
3. The abstract fails to provide insights into the actual results of the evaluation of dredging impacts, rendering the drawn conclusions unsupported.
4. While the abstract mentions the analysis of changes to the coastline and fisheries, it does not specify that remote sensing or satellite imagery was employed as the technique.
5. Quantitative or qualitative results from examining coastline changes over time using software like Google Earth, a core part of the methodology, are not presented.
6. Additionally, there is no mention of any findings derived from the analysis of 10 years of fisheries landing statistical data.
7. The conclusion stating that dredging had "moderately significant" impacts lacks substantiation due to the absence of

representative results from the performed analyses.

8. Keywords should be revised, and please avoid repetition with the words used in the title.

-Introduction:

1. More detail about the geographical, environmental, and socio-economic context of the Larache coastal area would help orient the reader.
2. The overview of dredging impacts is very general. Focusing the literature review more specifically on studies relevant to the Moroccan/Larache context would strengthen the introduction.
3. Clearly defining the precise problem/issue being addressed in the Larache case study, rather than generic dredging impacts, would make the objectives clearer.
4. The introduction does not directly state the specific objectives of the study but implies them through subsequent details. Clear objectives are needed upfront.
5. More justification is needed for choosing historical satellite imagery and statistical data as the methods, rather than just describing them.

-Description of the Study Area:

1. The level of detail in the discussion of geological and sedimentological facies appears tangential and does not align with the objectives of the study.
2. The overview of flora and fauna lacks focus, as the discussion of species and communities is not tailored to the assessed impacts.
3. There is a limited connection between the description provided and the research question, as the influence of the described features on the coastline and fisheries is not clearly established.
4. While the climate is summarized, there is a missed opportunity to link it to the drivers that influence the coast.
5. The descriptions of various features are presented separately rather than integrating them to provide a holistic understanding of the environment.
6. The spatial and temporal scales are not clearly clarified, making it unclear whether the description refers to the study-specific period and location or a broader region.
7. The mention of fauna, specifically benthic fauna, seabirds, marine mammals, and fishery resources, should be supported by a reference.
8. The scientific name of the mentioned species should be italicized.

-Results

1. The influence of other factors, such as natural processes and structures like dykes that affect sediments, is not separated or isolated from potential dredging impacts in the analysis.
2. The timeframes of 5-9 years of data may be too short to capture long-term trends accurately, and the observed changes could still reflect short-term natural variations rather than solely dredging effects.
3. Statistical significance is not tested, which means it is uncertain whether the observed differences exceed normal

background variability levels..... Such as a paired t-test

4. The consideration of uncertainties is lacking, including factors like the variability in satellite image quality over time that can impact the accuracy of shoreline mapping.

-Discussion of the Results Obtained and Discussion of the Results

1. The lack of statistical analysis prevents the determination of whether the observed changes are truly linked to dredging activities or simply a result of natural variability.
2. Other factors, such as natural processes and human activities like dykes, which also influence sediment dynamics, are not fully isolated or accounted for in attributing the observed impacts.
3. The relatively short study duration of 5-9 years may not capture long-term trends and could still be influenced by natural inter-annual variations.
4. While impacts are discussed qualitatively, there is a lack of quantification, such as measurements of the extent and magnitude of erosion, accretion, or declines in fish catch.
5. Important contextual details, including the specific locations, volumes, and timelines of dredging operations during the study period, are omitted, limiting the understanding of the findings.
6. Alternative explanations for the observations, such as the potential effects of climate change on fisheries, are acknowledged but not thoroughly explored.
7. The uncertainty associated with methodological factors, such as image analysis techniques, is largely ignored in the interpretation of the results.
8. Some of the conclusions drawn in the study rely more on conjecture than on strong support from the conducted quantitative analysis.
9. The study lacks a critical perspective in presenting the shortcomings of the methodology and data, downplaying them rather than presenting them as limitations of the study.

Conclusion:

1. The lack of nuance is evident as the paper states that dredging has a "negative impact" without specifying the magnitude or significance of these impacts based on the results obtained.
2. The claims made about the effects of dredging on the "marine ecosystem" are overly broad and not fully supported by the scope and findings of the study.
3. The conclusions about the impacts of dredging are not strongly supported by direct ties to quantitative or statistical results, and this weakens the validity of the claims made.
4. The limitations of the methodology are downplayed, as the discussion of the implications of the findings fails to reiterate the constraints acknowledged earlier in the paper.
5. The paper does not adequately address uncertainties, as the conclusions are presented with certainty while the analysis itself included assumptions and potential errors that are not fully addressed.
6. The causal links between dredging and the observed changes are oversimplified, as the paper suggests definitive relationships without sufficiently isolating and considering all influencing factors.

7. A critical perspective is lacking, as the shortcomings of the study design and execution are not re-emphasized as important context for the conclusions drawn.
8. The recommendations provided are not prioritized, as the paper does not clarify the relative importance or applicability of the proposed mitigations based on the levels of impact found.
9. The paper does not outline future work or propose avenues to address the limitations identified, which would strengthen the discussion of implications and offer opportunities for additional research.

Minor comments

- I kindly request you to review the references within the text, paying particular attention to the placement of commas.
- I recommend conducting English editing to ensure that the paper is written in academic English rather than narrative English style.
- Please ensure consistency in the references style across the biography sections.