**Review report:** Rethinking Preparedness for Coastal Compound Flooding: Insights from a Systematic Review.

The review paper called "Review article: Rethinking Preparedness for Coastal Compound Flooding: Insights from a Systematic Review" aims to explore how preparedness strategies are growing to be more integrative and how governance and stakeholder collaboration enhance adaptive approaches. The paper can contribute to the literature on coastal compound flooding preparedness upon undergoing some terminology corrections and restructuring. My main concern relates to the unclear differentiation between drivers and hazards, which results in considerable and recurring confusion in the manuscript. This issue may have introduced uncertainty into the search and filtering protocol in the literature review.

I commend the authors on their research efforts. Please find below the review comments aimed at enhancing the clarity and impact of the paper.

**Abstract**

- The reader should be provided with the number of reviewed studies, as well as some details about them (time period, spatial scope, for instance).

- The findings noted at lines 13-20 should be reframed to be more coherent, as they currently miss a red thread.

- The aim noted in the Abstract differs from the one stated in the Introduction ("This review explores how preparedness strategies are evolving to integrate technical, environmental, and social dimensions while evaluating the role of governance and collaboration in enhancing adaptive approaches."). It is unclear to me what type of preparedness (against what) do the authors investigate. Adaptive approaches to what? The framing here is rather vague.

- Line 9: the drivers listed here are actually hazards (except for river discharge, which is not even a driver).

Line 10: sectoral silos is an unclear term.

**Graphical abstract**

- What do the authors mean by "a primary hazard that triggers ripple effects"? Isn't this phrasing redundant with cascading impacts?

- I recommend reordering the outcomes based on their importance. The current order seems rather random.

**Introduction**

- Line 26 ("The greatest risks from a changing climate may not come from individual impacts") contains a logical error considering the terminology of impact and disaster risk as proposed by UNDRR. Please revise the definitions of these terms and modify accordingly.

- Line 27: What are intersectional vulnerabilities? The term is rather confusing in this context.

- The authors should clarify from the beginning what do they call a driver. Is this term interchangeably used with hazard, as shown at lines 29 and 40? I do not recommend using them as synonyms, but to always clearly specify if they refer to a hazard or the driver (of what, of CF as a hazard)?

- I recommend rephrasing the research questions in a clearer way (1st questions – dimensions of what?; 2nd question is rather blurred and it is not a question per se). Reaching the Methodology section, I see that the questions are clearly formulated here, but they should also be written like this in the Introduction.

- The authors do not specify how gaining answers to the 2 proposed research questions will contribute to the development of adaptive frameworks: "By addressing these critical issues, this study seeks to contribute to the development of adaptive frameworks that strengthen resilience and enhance preparedness in the face of complex and evolving CF risks".


**Methodology**

- Line 163-164: "By examining these integrations, we assess how well they address the complex and compounding risks associated with multiple flood drivers." – what does this assessment involve? Is there a clear framework for assessing the degree to which the listed elements address the CF risk involving multiple flood drivers?

- Upon reading section 3.1., it is unclear to me the time period targeted by this literature review.

- Please check Table 1 for typos.

- Why were studies on tsunamis ("disasters such as tsunamis and earthquakes, which were beyond the scope of this work") beyond the scope of this work, if they related to preparedness for such hazards?

- Is the exclusion process described at lines 205-210 mainstream for literature reviews in flood preparedness? Is this method sound enough to correctly identify the papers that did not align with the objectives of the review? To me, the procedure sounds rather inconsistent and relevant studies may have been removed from the pool. Perhaps list this as a methodological limitation.

- What were the relevant and irrelevant records that served as the foundation for training the first machine learning model?


**Results**

- Line 261: Social Sciences should also be written with capital letters.

- Figure 3: I recommend replacing this polar chart with another type of representation. Such charts are harder to read, and the same information can be conveyed in more classical and clearer ways.

- I would like to see a more extensive explanation of this point: "This notable growth in scientific attention after 2012 aligns with a broader shift in natural hazard research paradigms, particularly following significant developments in climate risk frameworks."

- "The surge in publications, particularly after 2015, coincides with the growing recognition of the need for integrated approaches that address the complexities of compound flooding and other interconnected hazards" – this can be linked with the Sendai Framework.

- I advise the authors to draw another timeline figure identifying the key trends discussed in section 4.1. The 0x is temporal, and the rest includes the emergence of key trends (start and end points). This figure can help the reader identify the diversification tendencies and the introduction of new terms (e.g., compound events, compound effects, multi-hazard) more readily ,and it would make a valuable addition to the already rich and high-quality material in this paper. The figure can also include a similar design for the details in sections 4.2.

- Table 2: there is no need to separately provide the year. The reference alone looks neater. I also think the caption of the table should provide some details on the methodology of eliciting the key topics.

Figure 6: I recommend replacing the pie chart with another type of chart. It is well known that pie charts are misleading and harder to read for most people. Also, on the bar chart, please replace the Count on 0y with a more appropriate label.

- Figure 7: Please improve the readability of the text in this picture. Providing some contrasting background for the text would be beneficial to the reader.


**Conclusions**

- What is understood here by systemic vulnerability and systemic risk? The authors should clearly define these terms (also used in the Conclusions and throughout the text) in the introductory part.

- Line 551: complex interactions of what?


**Additional comments**

- I recommend adding a dedicated Reflections section to consolidate the paper's key contributions. It can be placed after Results. This section should include clear answers to the two research questions and compare insights on CF preparedness with preparedness for other hazards influenced by climate change (in terms of frequency, intensity). By critically discussing these findings, this section would serve as the intellectual "heart" of the paper.