

# Response to referees

We would like to thank the referees for their insightful reviews of our manuscript. Please find our detailed responses to the referees' comments and suggestions below.

The main changes that we are implementing in the manuscript are as follows:

- Moving the three Figures B1, B2, and B3 from the Appendix into the main part of the manuscript.
- Adding the names of the countries on Figure B1.
- Changing the structure of *Section 2 Data and Methods*, by having two sub-sections: one about the data and the second about the methods we use. We are also adding a flowchart to clarify the approach of our study in relation to the research questions, along with the methods and data we use to address these research questions.
- Performing linear regression analyses between flood impacts and the socio-economic characteristics, for countries in the EU compared to those in the MENA region.
- Improving the way of quantifying the link between flood recorded impacts and public perception, by calculating a difference in percentages instead of using ranks.
- Computing flood human impacts and economic losses using the HANZE database in the EU in addition to the existing computations based on the EM-DAT database.

## Referee 1

Upon careful review, the article (Floods in the European Union and the Middle East and North Africa region: Socio-economic impacts, characteristics, and public perception) makes valuable contributions to the field of disaster research, particularly concerning flood risks. This study primarily highlights a comparison of flood impacts between two regions that are entirely different in terms of their social, climatic, and economic characteristics, while examining the recorded effects of disasters alongside people's perceptions. Despite the limitations outlined by the authors, such studies can contribute to supporting risk management strategies and mitigating their impacts. However, some observations could improve the article.

Dear Referee 1,

Thank you for the relevant and constructive comments, which helped us to improve our manuscript. Below we provide one-on-one answers to your feedback in blue, as well as the changes that are being implemented in the manuscript.

We want to thank you for your time reviewing our manuscript and for recognising the study's merit.

- Lines 2-4: In this sentence, the same phrase is repeated with the same meaning; please rephrase it into a single sentence

Thank you for pointing to this unclarity in the text. These two sentences do not address the same issues. On one hand, we note that there is a gap in comparative studies on flood impacts between regions that have different socio-economic conditions, on the other hand we also mention the lack of research combining public flood risk perception and measured flood impacts. To clarify we change this part, and hope this new formulation makes the text clearer:

“While much research has been conducted on flood impacts in the Global North, less is known about how these impacts vary across regions with different socio-economic conditions. Moreover, it is largely unknown how public perception of flood risk corresponds to observed flood impacts, which is relevant for how populations respond to flood risk management measures.”

- I couldn’t find the keywords section, which is essential for any article.

Thank you for pointing this out. No keywords were requested for the submission of this manuscript. We have the following list ready if necessary: “Europe, Middle East and North Africa, Flood impacts, Flood risk perception, Natural hazards”.

- Line 33: The author has not specified the basis or criteria used to classify countries as ‘Global North’ and ‘Global South.’ I would appreciate some clarification on this point.

Thank you for pointing out the unclarity on the concept of Global South and Global North. We use these terms here following the World Bank classification of countries as listed in Kowalski (2020). We also use the definitions they bring forward, which are as follows:

”The Global South – a term that refers to developing countries located mostly in the southern hemisphere [but not all], with generally low income levels and facing different structural problems.

The Global North – a term that refers to developed countries concentrated in the northern hemisphere, characterized by high levels of income, technological advancement, well-developed infrastructure, and macroeconomic and political stability.” (Kowalski, 2020: p.1).

We add more explanations in the introduction of our manuscript to make this point clearer in the following way:

”Flood disasters in the Global North – i.e. a socio-economic notion describing developed countries with high income, advanced technology, robust infrastructure, and stable economy and political institutions (Kowalski, 2020: p.1) – are increasingly well studied.”

- Line 87: This section needs rearranging; the reader cannot distinguish between the data and the methodology. I suggest dividing this paragraph into two sub-sections: the first (2.1) concerning the data and the second (2.2) concerning the methodology.

We indeed change the structure of this section. Section 2.1 describes the two sources of data that we use for this study and Section 2.2 the methods. In addition, we separate Section 2.1 into two subsections, one for each data source we use.

- Line 88: Although this subsection addresses only one type of data, the author mentions two primary data sources. What is the second data source?

We agree this sentence was unclear. As mentioned before, we use two different types of databases which were referred to in that sentence, that is, the EM-DAT and the Eurobarometer survey. We believe that the changes in Section 2. *Data and Methods* clarify this. In addition, we rephrase the relevant sentence for more clarity:

”To address these research questions, we draw on two main data sources. For the impact data, we use the EM-DAT database, detailed in Section 2.1.1. To determine the public perception of flood disasters, we rely on the Eurobarometer results, which are described in Section 2.1.2.”

- Line 122: As I mentioned earlier, I suggested that the methodology should be included as a subsection within the ‘Data and Methodology’ section. I believe it is essential to draw up a flowchart of the study’s methodology, as this will give the reader a clear overview of how the authors proceeded.

Thank you for this great suggestion. We indeed add a flowchart in Section 2 that will help give the reader an overview of the study approach, data, and research questions. For the structure of Section 2, we refer to the response to the previous comment above.

- It will be better to add the names of the countries to the map for Figures 2 to 7, as this will make it clearer for readers.

Thank you for this suggestion. We agree that adding the country names will help the reader’s ability to follow the results. We add the country names to Figure B1, which will be moved to the main part of the manuscript. However, we refrain from adding country names to all panels in Figures 2-8 which would make the figures unclear and overloaded with repetitive information. Below we add the corrected version of Figure B1 that we suggest, with the names of the countries (Fig. R1).

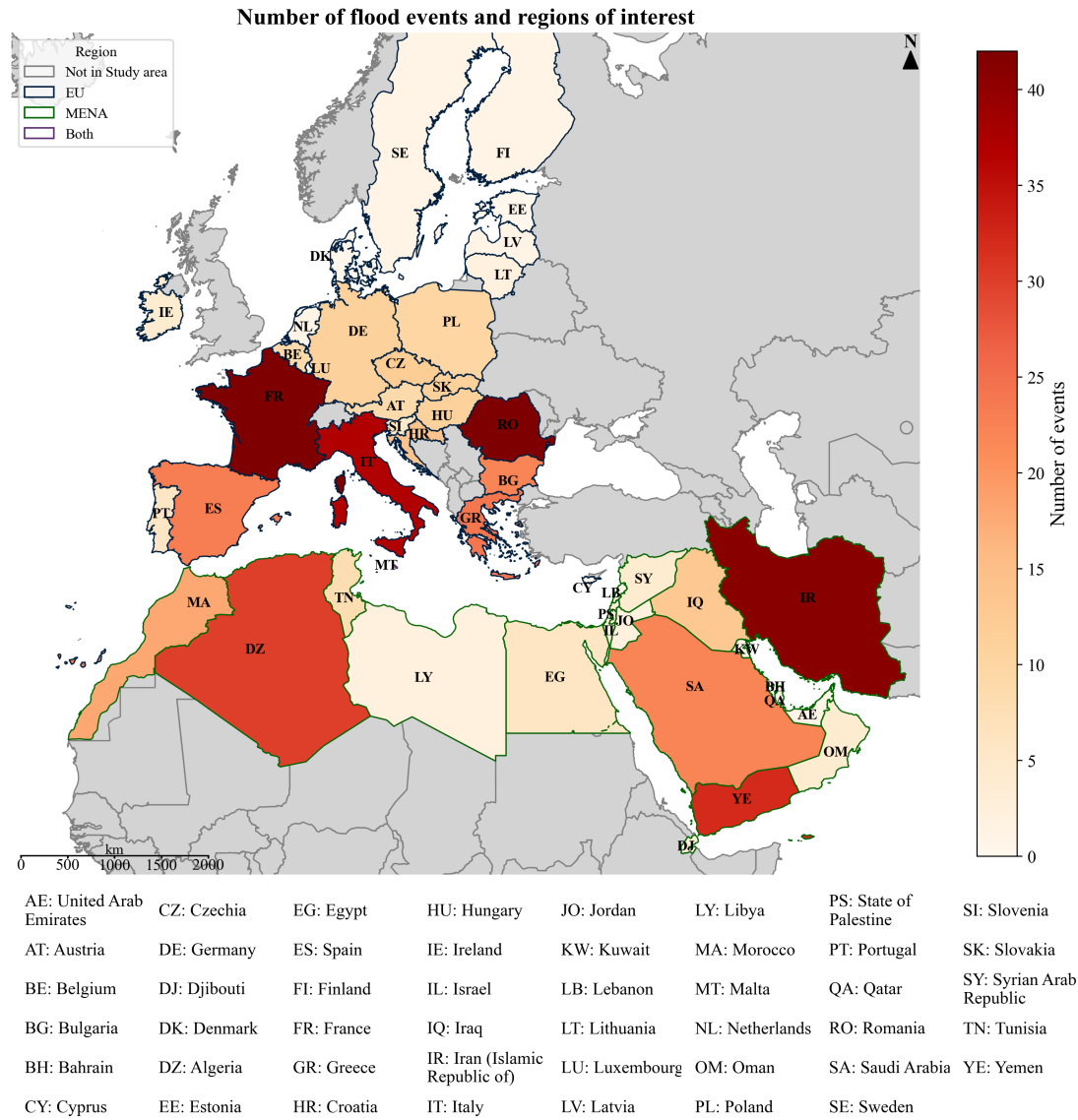


Figure R1: Number of flood events recorded per country, and countries and regions of interest. This figure is numbered Figure B1 in the original manuscript. Data source: CRED (2025), Country borders: Natural Earth (2025).

- I suggest that the author move the three figures (B1, B2, and B3) from the appendix to the main body of the paper, following the paragraphs in which they are mentioned.

We agree that the figures, previously in the Appendix, will be of more value if included in the manuscript itself.

As mentioned above, we move Figure B1 from the Appendix to the main text, as it will help providing relevant context to our study and orientation on the study region. In addition, we also move the two other figures to the main text, as it will help the reader to have the results directly rather than having to look for them in the Appendix.

We want to thank you again for emphasising the contribution of our study to the field of disaster research, as well as providing suggestions for improvements.

We believe that our proposed changes will make the study clearer and better understandable to the reader and hope that the proposed change answer well to the raised issues with our manuscript.

## References

Kowalski, A. M.: Global South-Global North Differences, in: No Poverty, pp. 1–12, Springer, [https://doi.org/10.1007/978-3-319-69625-6\\_68-1](https://doi.org/10.1007/978-3-319-69625-6_68-1), 2020

CRED: Centre for Research on the Epidemiology of Disasters, UCLouvain, Brussels, Belgium: Emergency Events Database EM-DAT, <https://www.emdat.be/>, accessed on: 09 September 2025, 2025.

Natural Earth: Admin 0 Countries, <https://www.naturalearthdata.com/downloads/10m-cultural-vectors/10m-admin-0-countries/>, accessed on: 23 February 2025, 2025.