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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "Impacts of European drought events: insights from an international database of text-based reports" *by* K. Stahl et al.

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We thank the reviewer for several constructive comments to improve the paper. We first reply to the introductory criticism that the work is "purely descriptive and that there is no research at all", followed by replies to the "general and specific comments".

We are confident that we delivered empirical research as it is common in large-scale, large sample studies, i.e. through the analysis of a variable of interest (here reported drought impacts) using descriptive statistics; in our case through quantifying variability across impact categories and types, in time, and in space (across Europe). In addition, the study identifies and discusses important biases and shortcomings of the current dataset along with the implications these may have for further qualitative and

quantitative analyses, e.g. linking impacts with drought indicators. As the database is new, its description admittedly takes up a rather large part of the manuscript, but to allow thoughtful interpretation of this Pan-European assessment of reported drought impacts, we find this to be necessary. The reviewer further suggests including analyses of relations such as between impacts and indicators. Such analyses have been carried out in parallel studies and are cited in several places throughout the article. These parallel studies found that relating impact occurrence directly to drought indices has a number of challenges such as the derivation of quantitative impact occurrence/severity metrics and the need for complex statistical methodology. Further details can be found in Bachmair et al. (2015a, b), Blauhut et al., (2015), Van Loon et al. (2015) and Stagge et al., (2015) who have done such analyses for either regional subsets, particular drought types, or impact category subsets of the EDII database. We would argue that including such additional analysis (and along with it, the description of the statistical methods to test hypotheses and develop models) to this manuscript is neither feasible (would loose focus) nor recommendable (would become too long – see the long methods and results descriptions in the cited papers).

Reply to General Comments

The reviewer " should have like to have seen the relationship between indices, impacts and response measures, in order to provide a list of measures adequate to each impact. . ..usefulness of this work would be increased if the users of the database could also see the effectiveness of the measures to reduce the vulnerability. . ...". Response: We agree that an improved understanding of successful response measures is necessary to improve drought management. However, studying the relations between impacts and response measures and between response measures and their success or failure, is a very different topic. Information on the "success/failure" of measures to mitigate the impacts would require another empirical data collection from different information sources than the ones used here. Information on "response measures" that were associated with a particular reported impact, in fact can be entered into the

EDII impact submission interface and into the database structure. However, practice has shown, that very few entries were made to this field because this information was rarely available together with information on drought impacts. As too few entries exist for an analysis in time and space at the scales of interest in the paper (Pan-Europe, long time), the existing drought impact entries that do contain information on associated response measures are not elaborated in the manuscript. However, in the revised manuscript we will a) add some text to point more specifically to this option in the database and note why this data layer it is not further elaborated on here and b) expand the two lines outlining ideas into a wider outlook on this important aspect related to improved drought management.

The reviewer found Section 4 to require re-ordering. Response: Thanks for pointing out that this section is difficult to follow. We will improve order and navigability in the revised version.

Reply to Specific Comments

Reply to the 3 comments on the reporting of measure: Focus of the database are impact reports. Yes, measures can be entered into the database if the information source specifies a measure that relates to the particular impact reported and entered into the database. However, as described above, information on measures to mitigate an impact was rarely available from the data sources. Hence, this is an optional field. If it was a required field, this would reduce the data content tremendously. At this point of development, however, our focus was to collect as much data on impacts as possible. In the revised paper we will explain the database option for entering information on reported measures and why the collected data wasn't used further in the analyses to avoid confusion (also see general comment).

Reply to comment on translation: Every contributor provides an English summary (not a translation of the source). These summaries are typically 1-3 sentences that describe the pertinent impact details. Every contributor must register and the contributor's initials

are part of the impact report entry's unique ID. So in case the database moderator has questions, it is possible to contact the original contributor. Occasionally, the database moderator will make minor adjustments or reject an entry if clarity is lacking. We will clarify this in the revised version.

Reply to comment on hydrometric information, reservoir levels, etc.: Thank you for pointing out the omission. We agree and will add them in the revised list.

We appreciate the comments on the figures and will improve the raised aspects in the revised version of the manuscript.

References

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