

## ***Interactive comment on “Selecting and analysing climate change adaptation measures at six research sites across Europe” by Henk-Jan van Alphen et al.***

### **Anonymous Referee #1**

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The paper contains the results of an development and assessment of methods and tools in relation to climate change adaptation across several sites in Europe. As such it is of interest to the readers of NHESS. The paper has been submitted to a special issue that puts emphasis on case studies, stakeholder engagement and practical applicability. I have taken that into consideration when doing the review by focussing on the take-home messages that other locations could benefit from receiving.

I would appreciate more consistant and more frequent citation of existing literature and published project outcomes. Some examples from section 2: in line 57-58 two databases are mentioned and a method. Also the CoP should be defined here (if

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not in the introduction), both by a brief explanation and a citation. In line 66 a tool should be referenced as well (I assume that the restrictions to accessibility in line 430 does not apply to the tool). Also ensure that the references to the cited literature are complete and searchable by providing URL, ISBN or similar, the reference list really needs improvement.

The novelty of the tool in section 2 should be described: what is new, are the headings and structure similar to the databases or adapted as an outcome of the study/workshops/project? There seems to be two dimensions in the tool (lines 67-69 versus 73-75), is that correctly understood? Please clarify and extend this section, perhaps inspired by the content of section 3.1, that is much easier to follow.

I think I agree with the statements in section 4.1, but I have difficulties following the argumentation and what the practical outcome of reading the section should be for the reader? Please consider rewording. The paper by Markanday et al (2019) is clear about which shortcomings they think exist and what should be done, perhaps that can serve as an inspiration. In section 4.2 it would be nice to state that while Figure 1 helps in deciding which framework is most relevant, each of the frameworks are known to only consider quantitative metrics, while in reality decision-making is a more complex process (as is also discussed in the section). Some of the questions that are in this paper discussed under the heading of social justice is part of a full Cost-Benefit Analysis (e.g. Boardman et al 2018: Cost-Benefit Analysis. Concepts and Practice. <https://www.cambridge.org/core/books/costbenefit-analysis/484720E57798B7E7A29C7156407CD4A1> )

Overall the description of the economic frameworks in section 4.3-4.6 takes up a lot of space considering it is relatively standard textbook material. I would recommend to abbreviate this a lot and rather focus on e.g. the stakeholder processes or the selection of adaptation measures.

L 349: Using decadal predictions of 5 years seem to be a contradiction of terms? Is it a

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writing mistake or is the underlying assumption of the BINGO project to only consider the current climate in climate adaptation projects ? Please clarify/justify.

The discussion section contains a very strong message about the shortcomings of technical infrastructure. My own experience is that some stakeholders are very much in favour of such solutions while other stakeholders are very much against them. If the BINGO project has been able to overcome this shortcoming it would be of interest to know how this was done and which of the tools discussed in the previous sections of the paper were particularly useful in obtaining this result. As it stands now the discussion section seems to report more on the belief of the authors than the result of the analysis.

Overall it is difficult to keep track of what is sensible solutions in relation to the different sites. One large table combining the information from Tables 1-3 and also supplementing with current and future climate change states and challenges (not only climate risk) in the beginning of the paper would be a help to the reader and also in line with the requirements of the purpose of the special issue. It would also serve as a basis for supporting the analysis supplied as a result of the study / project in Table 4. Why does Table 4 not contain information about the adaptation measures, it would seem logical to summarize all sections in this table?

Minor points:

Figure 1: The text on mandatory basis could benefit from being included into the legend. I am surprised that future states given the adaptation measures are not needed in accordance with e.g. Zhou et al (2012). If it is because changes after 2025 is not considered, then it should be justified. The economic tools shown in Figure 1 all require more than five years of input to the economic analysis.

L139: I suggest to refer to a revised section 2.

L141: What “part 1” are you referring to?

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L167: The homepage probably also contain other relevant resources and should be moved to a more suitable place in the paper.

The paper would benefit from being proof-read by a native English speaking person.

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