

This paper is a wonderful piece of work that helps to understand a context-specific science-policy gap. It is extremely valuable to have research like this supplying actionable recommendations that actors within these science-policy forums can implement. While this manuscript has a palaeoclimate focus, its findings are also relevant to non-palaeo science that is also utilised in decision-making processes. The manuscript is about barriers and facilitators, however, there are actionable recommendations as well, which I believe address a knowledge gap in the academic science-policy space. It would be great to see these brought to the forefront of the manuscript so they are more accessible to readers and interested parties in this space. I have made some suggestions for the sections below in the hope that they are of use to the authors. I congratulate the work they have undertaken, and the time to analyse transcripts. Well done, and I look forward to seeing this manuscript in its final form.

We thank the reviewer for taking the time to read our manuscript and providing positive and constructive comments to help us improve it.

1. Introduction - Is very long and could be shortened considerably (consider removing paragraphs from sections ~100-130). This would help the key aims of the manuscript come through. A lot of the introduction could be moved to the discussion, and while Figure 1 was great, I think it would be more interesting if it were the barriers and facilitators identified by the semi-structured interviews in this manuscript.

We agree with the reviewer that the introduction is very long and thank them for the suggestion of where to remove some text. We will follow your suggestion. Whilst we think it would have been a great idea to remove Figure 1 and create a figure similar in the discussion based on our results, we believe that this would create too much repetition to what has already been discussed. Therefore, we will just remove Figure 1 from the manuscript.

2. Methods - Consider having definitions for the main themes (Evidence, Context, Temporal Resolution). This would be super helpful to have upfront in the methods to refer back to when reading the Findings.

We thank the reviewer for this suggestion. We will add our definitions for these three themes in the methods.

3. Findings - Consider having a graph of some of the Findings. I totally understand that the small sample size means that it isn't as easy to translate it into a bar graph with the frequency of times forums were mentioned (e.g. IPCC, WMO), but maybe a table that has all the documents that are utilised by DPs could be helpful to visually see what DPs are interested in, rather than having to read into the Findings to get those answers.

We thank the reviewer for this suggestion. We think this is a good idea and will add in a figure into the findings on the main sources of evidence used. However, looking at the transcripts it is likely that these are going to have to be categorised into groups rather than absolute counts of single organisations as single organisations may only be mentioned once amongst the decision makers. Nevertheless, we will produce a summary figure to help highlight the evidence sources in response to this comment.

It would also be useful to know how many PS were of similar or different palaeo themes (e.g. tree rings, corals, sediments, etc) or were they all the same? Again, understand that this may not be possible if it breaks ethics by potentially making participants identifiable. But if all PS were speaking in respect to 1 or 2 specific palaeo sources,

then it could be worth noting in the bias section of the Methods. Similarly, putting your Figure 1 from the introduction, but making it from your results and putting it in the Findings would be super helpful and interesting too to be able to see it all in one place. My last suggestion would be to have a table summary of your recommendations in this section - again to make the results easy to find.

In response to this comment and the comment of Reviewer 1, we will now add in the areas of palaeoclimate that the scientists worked in. However, this was not a direct question in the interviews, but there were a few from both interview groups that mentioned what their areas of work and we will add these in.

4. Discussion - Para 335 "...Public funding can also be seen as a safeguard against perceived biases in evidence produced or commissioned by organisations with explicit advocacy roles or particular policy agendas..." This sentence either needs a Reference or to be rephrased to say that it's a perspective coming from the DM.

We thank the reviewer for bringing this to our attention, we will rephrase this sentence.

-Para 370 "...In addition, as touched upon above, the source of much of this..." Get rid of "In addition" OR "as touched upon above" it doesn't need both.

Thanks. We will remove "as touched upon"

It would be great to have a table or figure with the actionable recommendations clearly accessible. Further down, it is discussed that the recommendations are for the PS. Maybe I missed it, but there doesn't appear to be any mention as to why the recommendations are only for PS, and whether they are for PS individuals or for the institutions that they're working for? It is fantastic that this manuscript discusses both barriers and recommendations, but it needs to be clear that the barriers are from PS and DM perspectives, but the recommendations are only for PS.

We thank the reviewer for this constructive suggestion. We agree that presenting the actionable recommendations in a dedicated table will improve their accessibility and clarity, and we will add such a table in the revised manuscript.

Regarding the scope of the recommendations, we acknowledge that this was not made sufficiently explicit in the original version. Although barriers were identified from both palaeoclimate scientist and decision maker perspectives, the interview data yielded concrete, evidence-based recommendations primarily directed towards palaeoclimate scientists. While recommendations for decision makers would be valuable, developing these would go beyond what can be robustly supported by the data collected in this study. We will therefore clarify in the revised manuscript that the recommendations are intended for palaeoclimate scientists and that the absence of parallel recommendations for decision makers reflects the evidential scope of the interviews rather than their lack of importance.

5. Conclusion - Para 545 "... the use of palaeoclimate in the IPCC was considered an facilitator..." Do you mean a facilitator not an?

Yes – we will corrected this.

Para 550 - "...actionable recommendations..." Make sure that it is clear for whom the recommendations for. Bring that to the forefront and maybe foreshadow even in the introduction that you're talking about PS here, rather than recommendations for DMs. We agree that this should be made clearer throughout the manuscript that these are recommendations for palaeoclimate scientists rather than decision makers. We will

emphasise this throughout now and added some more detail in the abstract and introduction.