

Interactive comment on “Ideas: a simple proposal to improve the contribution of IPCC WG1 to the assessment and communication of climate change risks” by Rowan T. Sutton

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I thank Francis Zwiers for his comments on my proposal. I'm glad he agrees the discussion is useful. As I understand it he has two specific concerns, to which I respond to here:

1. The IPCC uncertainty language does not preclude the assessment of high impact storylines. I entirely agree with this point, and in my response to referee comments by S. Hallegatte I have provided a more detailed account (also attached here), illustrated with examples, of how the assessment of physically plausible high impact scenarios could be readily handled within the framework of the existing calibrated language. The

C1

point I wish to make is not that the uncertainty language is flawed but rather that by itself it is insufficient to guide the assessment of risk. I am amending the paper to ensure this distinction is spelt out more clearly. The more detailed description, with examples, of how the proposal could be applied will also be included in the final version of the paper.

2. It should be for the IPCC scoping process to decide whether specific attention to low likelihood high impact scenarios is required. Here, I think we do not entirely agree. I of course recognise that the IPCC has a formal scoping process (indeed I was a participant in one stage of this process for AR6, the scoping meeting in Addis Ababa). However, I believe there are weaknesses in this process especially for the main Assessment Report Cycle which require attention and - in view of the importance of the issues and the long-timescales of an IPCC Assessment Cycle - I consider this need urgent. Here is one illustration: since the report is for governments, with the Synthesis Report the headline product, an outsider would naturally expect the scoping process to begin with scoping the Synthesis Report by asking what the IPCC sponsor governments consider to be the most important questions they would like to be assessed. But for historical reasons this is not how it works: the scoping process is much more bottom up, with the scientists making a proposal of what they should assess in each Working Group and the governments merely modifying this proposal in modest ways. Scoping of the Synthesis Report comes only later, whereas in a sensible process the outcomes from scoping the Synthesis Report should be cascaded to the Working Groups so that they receive clear guidance on which issues are of most concern to the governments. Of course there must always be space for scientists to raise issues and concerns that governments may not have thought of, but this does not mean that a fundamentally bottom-up scoping process is appropriate any longer.

A second point about the scoping process is that chapter author teams retain significant latitude (albeit within the constraints of the outline) to decide what questions they will assess. But not surprisingly, the influence of previous practice is very great. Thus

C2

because the approach in five WG1 Assessment Reports has been to assess the likely range and, in general, say very little if anything about the high impact tail, this practice will tend to continue unless there is a very strong steer from the top that it should change.

I would argue that the lack of attention in WGI to low likelihood high impact scenarios is substantially a consequence of weaknesses in the IPCC scoping process. Of course there are other factors, such as the fear of alarmism, which I mentioned in my proposal and was addressed more directly by Kerry Emanuel in his 2014 comment "Tail risk vs. Alarmism" (<http://climatechangenationalforum.org/tail-risk-vs-alarmism/#comments>). He ended his comment by asking: "Do we not have a professional obligation to talk about the whole probability distribution, given the tough consequences at the tail of the distribution?" I think we do, and that the IPCC WGI should therefore give greater attention to the high impact tail. My Idea presents a simple way in which this could be done, within the constraints of the existing IPCC procedures and the agreed outline of AR6.

It is beyond the scope of my Idea to discuss the IPCC scoping process in any detail. However it is clearly relevant, so if the Editor agrees I would propose to add some brief comments about its relevance to the final version of my paper.

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