

## ***Interactive comment on “The Vulnerability, Impacts, Adaptation, and Climate Services (VIACS) Advisory Board for CMIP6” by Alex C. Ruane et al.***

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We wish to express our thanks to the anonymous referees and interactive commenter for their detailed and constructive comments on “The Vulnerability, Impacts, Adaptation, and Climate Services (VIACS) Advisory Board for CMIP6” (by A.C. Ruane and co-authors; Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-71, 2016). Below please find our responses to referee #1 below each comment (beginning with “Authors’ Response:”), which detail the resulting changes we made to the manuscript given tight space constraints. We believe that the manuscript is substantially improved as a result.

Best regards,

-Alex Ruane and co-authors

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Comments from Anonymous Referee #1:

+ The paper looks great and it covers various issues on the application of CMIP6 coupled models for studies on VIACS. However, CMIP6 models do not include impact models, and without that it would be hard to perform VIA applications. I am happy that the PROVIA be part of this, but as far as I can see vulnerable regions such as SE Asia, Central and South America and Africa (countries other than South Africa) are out of the Advisory Board, as is shown in the paper. May by PROVIA can cover this gap but PROVIA is not the advisory board.

Authors' Response: The VIACS Advisory Board members were drawn overwhelmingly from existing projects and international programs, which are disproportionately led by North American and European leadership (although the Board also includes representatives from South Africa on both the VIA and CS side). This disproportionate representation is also a reflection of discrepancies in the VIA publications (as noted in Section 2.2.1). Unfortunately there were few regions that have organized anything like a VIACS community with consolidated points of contact and leadership, so the regional aspect of engagement proved more difficult. The lack of representation from East Asia, Latin America, and Oceania is an acknowledged shortcoming. We now include a brief discussion of our challenges in identifying regional representatives and state in the text that we will seek to better balance out regional representation in the next iteration of the Board (Section 3.3). We have also tried to overcome regional limitations through our participation with PROVIA, the Climate Services Partnership, and the networks cultivated within each of the projects and programs (many of which include leadership from these under-served regions).

+ The authors wrote that "CMIP6 provided a unique opportunity to facilitate a two-way dialogue between CMIP6 climate modelers and VIACS". However, I can not see how this dialogue would come up in the paper. In my experience, climate modelers work

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not so much on societal relevant issues, and the simulation outputs data not always are ready to use for impacts studies. The VIA community sometimes is not familiar with model outputs. So, from what I see in the paper, the problems may continue, no matter how complex would be CMIP6 models.

Authors' Response: We agree that the VIACS Advisory Board alone is not enough to eliminate differing interests, priorities, and expertise, and have added to the Summary and Benefits (Section 6) to highlight these continuing issues (some of which are healthy) The VIACS Advisory Board process does highlight a shared interest in breaking down these expectations and barriers in terms of the scope of interest, as we have found that the VIACS community is motivated to better understand the models and their output, while the modeling community has a profound interest in seeing their work used for societally-relevant applications. We have added a to the "Visualizations, Documentation, and Guidance" Section (5.4) to call more explicitly for joint efforts on translating climate model outputs into vetted, bias-corrected, accessible, and usefully-formatted VIA inputs.

+ Around line 290, "Representatives of the VIACS Advisory Board also participate in major CMIP6 meetings to give voice to the VIACS perspective", what kind of participation? what kind of voice? It is the voice of the members of the VIA community that may not be part of this board? How the VIACS board works with modellers?

Authors' Response: We have added to this section (3.4) to highlight the role of VIACS Advisory Board members at CMIP meetings (most recently at the Workshop on CMIP5 Model Analysis and Scientific Plans for CMIP6 in Dubrovnik). At CMIP6 meetings the VIACS Advisory Board representative acts as a resource when the climate modelers have questions about likely interests or ramifications of decisions on the VIACS community, may suggest actions and frameworks that facilitate VIACS research, and promotes engagement between the two communities through the VIACS Advisory Board process. Any formal recommendation by the VIACS Advisory Board must be discussed across the wider Advisory Board as no single member may make Board recommenda-

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tions. Members of the VIACS Advisory Board may also interact with climate modelers through a wide variety of tasks related to their non-Advisory-Board work, but the process by which the VIACS Advisory Board formally works with the modeling community is through CMIP6 leadership. This process is outlined in section 3.4 of the manuscript and summarized in Table 2.

+ Working on VIA myself, I realized that not everything is solved by climate coupled models, as those from CMIP5 or CMIP6, nor by regional climate models. Regional climate models and experiments such as CORDEX and others represent model applications that may generate data that would feed impacts models.

Authors' Response: Agreed; we have included the RCM community within the VIACS Advisory Board because of their vital role in producing input information for VIA models. We explicitly call out the importance of CORDEX in Section 3.2 to underscore this cross-scale need. CORDEX also exists as a diagnostic MIP within CMIP as its contributions go beyond the VIACS orientation, but CORDEX leadership provides valuable perspective as to how to engage and build communications in both the VIACS and climate modeling realms. We have added to Section 3.2 to call out the importance of CORDEX and TGICA (which plays a similar role for scenarios).

+ The paper describes some sectors in which the VIA focus would be, but the authors would not say how this will be done.

Authors' Response: We have added a reminder of the engagement process within the VIACS Advisory Board consultation steps (summarized in Table 2) in the introductory paragraph of the section (#4) describing the various sectors and communities.

+ There should be a section on impact models and how uncertainties would be assessed.

Authors' Response: This is clearly an important issue and one that is cross-cutting across all VIACS sectors, but recommendations on how uncertainties are assessed

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is beyond the scope of this paper. We have added the Board's interest in facilitating a common approach to assessing the uncertainty cascade from climate into VIACS models and assessments as the final recommendation within Section 5.4 (Visualizations, Documentation, and Guidance).

+ It is my suggestion that this paper's focus should be wider than the advisory committee, and it should reflect a global reality, by adding authors from regions such as India, China, Central or Southern Africa, Central and South America, so the global flavour would be on it. It would be nice that the advisory committee on VIACS be more regionally representative, but at least that paper must reflect the different realities, and I suggest including authors from vulnerable regions.

Authors' Response: As discussed in the first refereed comment above, we have modified the text to better express our shared interest in a more inclusive and representative VIACS Advisory Board (Section 3.3). We have also noted that many Board members work in regions beyond our home countries, which provides some limited perspective even as the need for more inclusive membership in future Boards remains.

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Interactive comment on Geosci. Model Dev. Discuss., doi:10.5194/gmd-2016-71, 2016.

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