

Interactive comment on “An update of IPCC climate reference regions for subcontinental analysis of climate model data: Definition and aggregated datasets” by Maialen Iturbide et al.

Anonymous Referee #1

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General Comments The manuscript presents the updated climate reference regions for regional synthesis of observed and projected climate change information. The rationale behind the definition of the new regions is presented together with regional aggregated datasets generated from different observational temperature and precipitation datasets and from information of global climate models from the Coupled Model Intercomparison Project Phase 5 and 6 (CMIP5 and CMIP6) to assess observed climate and future climate projections (for different time horizons and emission scenarios). The manuscript provides the reference regions, datasets and code through a GitHub repository (<https://github.com/SantanderMetGroup/ATLAS>). The manuscript presents a valuable contribution for climate change assessments at sub-continental scales that rely on

C1

the efficient use of huge volumes of climate data and on the distillation and production of climate information for decision making. The topic of the manuscript is very interesting, the aims and results are clearly presented, and the code and data are easily accessible. Specific comment: I consider the updated and redefined regions make a significant improvement regarding the two premises established: climatic consistency and representativeness of model results. I would suggest adding a comment about that although the use of the aggregated climate information for each sub-continental region is very useful for a broad spectrum of users and they represent regions with climate-consistent regimes, detailed climate information at local or regional scales (in each sub-continental region) would require further analysis. Technical comments: Page 3, line 29: Wouldn't it be "from these datasets"? Page 4, line 11: Reference period 1986-2005 for climate projections and WMO period (page 3, line 35) 1980-2010. These maybe confusing for readers who are not familiar with these periods. I suggest adding a brief explanation Caption Figure 1: What do the white regions? I think they are the regions that did not change from one AR to the other but it would be good to clarify it in the caption.

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C2