

Interactive comment on “Climate change and mountain water resources: overview and recommendations for research, management and politics” by D. Viviroli et al.

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We wish to thank Massimiliano Zappa for the constructive comments and suggestions. We will revise our manuscript as follows:

- 1st Major Point (expert-based assessments): We realise that this needs to be clarified. We will provide the complete set of questions and the corresponding scores as supplementary material.

- 2nd Major Point (GCOS): Although not particularly mountain-related, GCOS is indeed a fine example for an initiative to provide continuous, reliable and comprehensive data
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on the state of the global climate system. We will extend Section 4.2.3 (“Research and monitoring needs” > “Importance of environmental monitoring” > “The way forward”) accordingly and indicate the need to consider high altitudes in such networks (with reference to Bradley, R. S., Keimig, F. T., and Diaz, H. F.: Projected temperature changes along the American cordillera and the planned GCOS network, *Geophys. Res. Lett.*, 31, L16210, doi:10.1029/2004GL020229, 2004). We will also make a reference to the CEOP (Coordinated Energy and water cycle Observation project) HE (High Elevations) initiative (<http://www.ceop-he.org/>), which runs in the framework of GEWEX (Global Energy and Water Cycle Experiment) and seems highly relevant in this context.

- Coordination of impact studies: There is indeed a need for better coordination at regional and national scale, and maybe even within research projects. We will stress this and add a note on the importance of data centres.

- Soil information: We agree that these are important points and will complete Section 4.1.3 with notes on the soil parameters that are most useful, the uncertainty introduced in parameterisation of conceptual models, and the importance of global soil moisture observation missions like SMOS.

- Visions on the use of remote sensing products: Remote sensing products can certainly provide relevant data on water resources, and there is considerable potential for further development. At the same time, such products rely inherently on a ‘ground truth’, i.e. in situ measurements, which, in turn, are in constant peril of being thinned out (as stressed at several occasions in the paper). In our view, the way to go is running ground and space borne measurements in a complementary fashion. We will complete Section 4.2.3 with notes in this direction, also mentioning some landmark space missions.

- OECD acronym: Will be explained