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>> SYNTHESIZE MOUNTAINS OF KNOWLEDGE <<

Submitted Abstract

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Abstract

Numerous initiatives and scientific programmes systematically monitor and report on physicochemical and biophysical changes in mountains across the globe, yet almost no similar initiatives exist for understanding human and societal dimensions of mountain social-ecological systems. Datasets produced from the Copernicus Global Land Service (CGLS), for example, or by networks such as the Global Observation Research Initiative in Alpine Regions (GLORIA), the Mountain Invasion Research Network (MIREN) and the Long Term Ecological Research (LTER) networks exclusively relate to biophysical variables. These data only tell a partial story of accelerating changes in mountain social-ecological systems, however.

Important processes shaping social-ecological systems in mountain regions require understanding of the socioeconomic, sociocultural and sociopolitical conditions of human populations by way of data on demographics, education access and quality, housing conditions and availability, quality and standards of living, values and traditions, migration, perceptions and much more. Currently such information is either unavailable, disproportionately available and/or unstandardized across time and space. Moreover, there is no consensus on what variables are the most important for understanding the human dimensions of mountains, and hence the types of datasets that would need to be developed to assess different mountain regions on a comparable basis. Once developed, societal data could be applied in unison with existing biophysical data to provide a deeper understanding of global change in mountains. This new monitoring data could then be applied to inform DRR measures that respond to changes at a systems level, which is necessary to address interconnected risks spanning spatial and societal scales.

In light of this information gap, GEO Mountains Task Group 2.3 aims to establish a set of so-called essential societal variables for global mountains. Building upon a 2020 workshop in Zurich, the Task Group (which consists of scientists and practitioners) aims to iteratively identify such a set of variables and their associated characteristics The challenges to overcome in the creation of a harmonised global dataset are many and varied: differences in data definitions, collection and analysis methods, quality, robustness, resolution, frequency of collection, etc. Integration with biophysical data is also complicated by the fact that boundaries for socioeconomic data rarely follow the same delimitations as biophysical datasets follow, but rather are typically aggregated by administrative units. This presentation introduces the project, highlight its broad relevance for mountain research, and present preliminary results from workshops carried out in 2022.

We thank other GEO Mountains Task Group 2.3 members for their contributions.

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