

GEO Mountains Task Group 1.4



Contribute Knowledge Packages via GEO Mountains to the GEO Knowledge Hub, thereby making relevant work / outputs more reproducible / extendable

Meeting #1, 9 February 2022



Housekeeping



- Kindly mute yourselves when not speaking
- Please “raise your hand” to request the floor
- The meeting is being recorded
- Brief notes will be circulated afterwards



GEO Mountains: an introduction

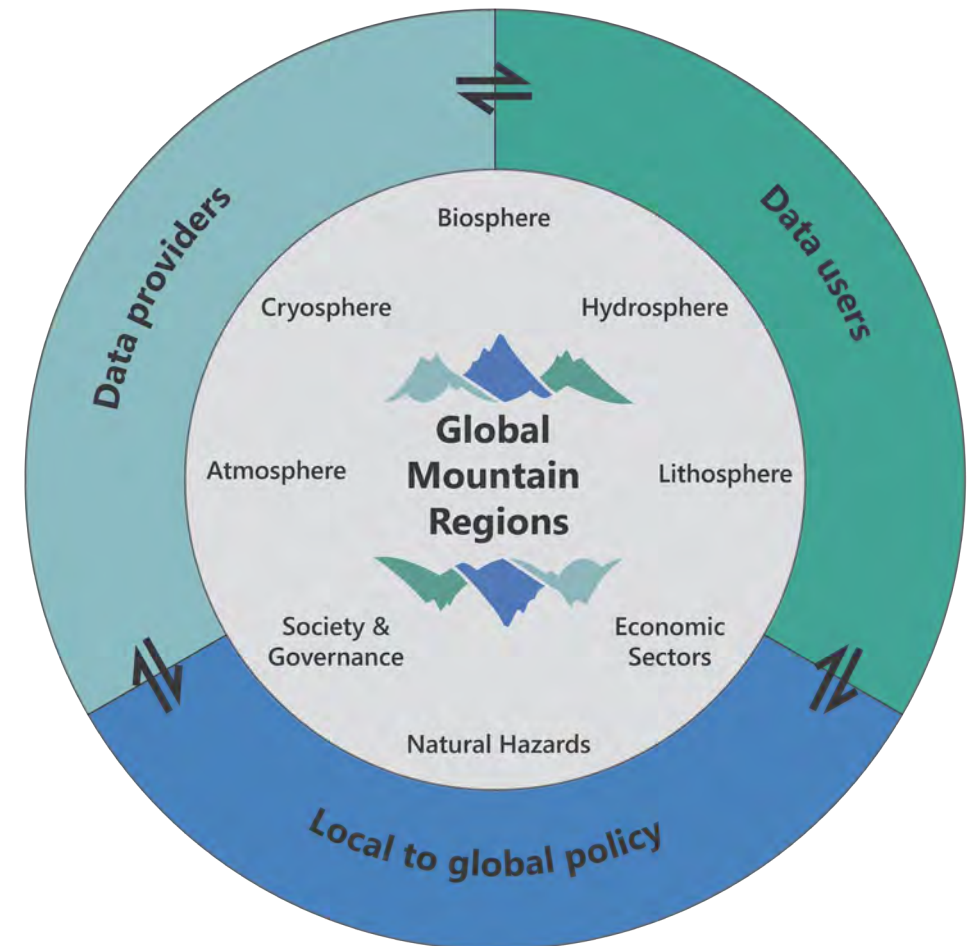
The Global Network for Observations and Information in Mountain Environments

An Initiative of the Group on Earth Observations (GEO) co-lead by the Mountain Research Initiative (MRI) & the National Research Council of Italy

Objectives:

- ❑ To identify and satisfy the data and information needs of a diverse range stakeholders operating in the mountain sphere
- ❑ To improve monitoring and understanding of mountain processes and phenomena, especially under change
- ❑ To build, connect, and communicate with the community of mountain researchers, practitioners, and policy makers
- ❑ To develop collective reporting capacity that responds to pre-identified assessment and policy needs

Strong Open Data and Open Science principles



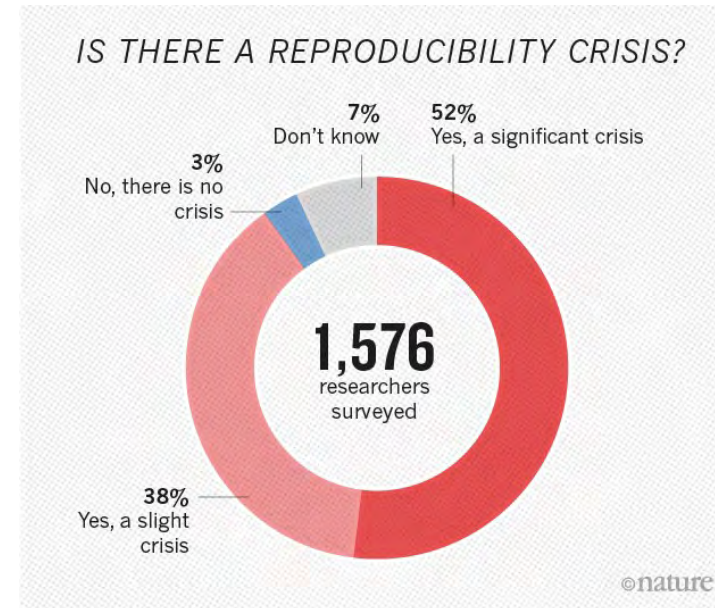
Task Groups



Number	Description	Number of participants
1.1a	Develop, maintain, and share a list of relevant datasets	31
1.1b	Develop and maintain a list of interdisciplinary in situ mountain observational infrastructure and associated datasets	20
1.2	Contribute to our series of regional workshops / consultations into data portal requirements and main data needs / gaps	24
1.4	Contribute Knowledge Packages via GEO Mountains to the GEO Knowledge Hub	20
2.1	Analyse the extent to which data from mountain observatories are freely available, and which measurement protocols are followed	14
2.2	Contribute to the MRI's existing Mountain Observatories (MOs) and Elevation Dependent Climate Change (EDCC) Working Groups	24
2.3	Contribute to a GEO Mountains workshop to identify Essential Mountain Societal / Socio-Economic Variables	34
2.4	Develop a global spatial dataset related to mountain socio-economics	20
2.5	Establish links with the paleoscience community to help ensure that paleodata pertaining to mountains are discoverable, accessible, and usable	8
3.4	Develop educational, training, and capacity development materials related to the drivers, processes, and impacts of environmental, ecological, and societal change in mountains	27
3.5	Identify areas in which / how existing resources can be applied to respond to pre-identified policy needs	28

The need for transparent and reproducible science

- ❑ Certain need to (re)build confidence in science
- ❑ Open data is crucial, but is only a starting point
- ❑ The provision of sound and trustworthy data and information to decision makers requires fully transparent and reproducible workflows



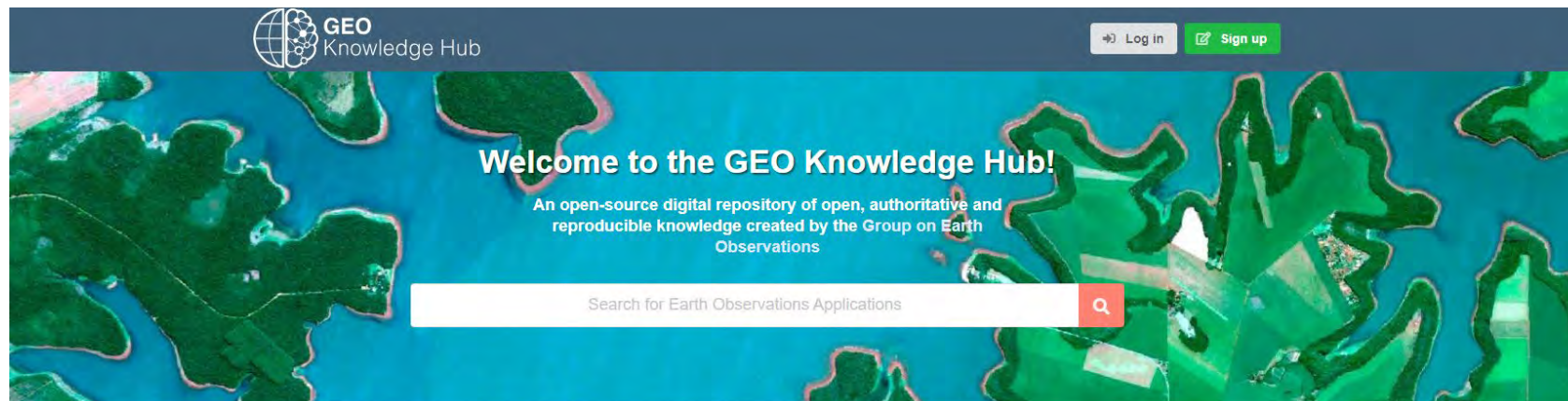
What is GEO?





GEO Flagships					
GEO Biodiversity Observation Network GEO BON	GEO Global Agricultural Monitoring GEOGLAM	Global Forest Observation Initiative GFOI	Global Observation System for Mercury GOS4M		
GEO Initiatives					
AquaWatch AQUAWATCH	Data Access for Risk Management GEO-DARMA	Data Integration and Analysis System DIAS	Digital Earth Africa DE-AFRICA	Earth Observations for Ecosystem Accounting EO4EA	Earth Observations for Health EO4HEALTH
Earth Observations for the Sustainable Development Goals EO4SDG	GEO Capacity Building in North Africa, Middle East, Balkans and Black Sea Region GEO-CRADLE	GEO Global Water Sustainability GEOGLOWS	GEO Human Planet HUMAN-PLANET	GEO Land Degradation Neutrality GEO-LDN	GEO Vision for Energy GEO-VENER
GEO Wetlands GEO-WETLANDS	Geohazard Supersites and Natural Laboratories GSNL	Global Drought Information System GDIS	Global Network for Observations and Information in Mountain Environments GEO-MOUNTAINS	Global Observation System for Persistent Organic Pollutants GOS4POPS	Global Urban Observation and Information GUOI
Global Wildfire Information System GUIS	Oceans and Society: Blue Planet BLUE-PLANET				
GEO Community Activities					

What is the GEO Knowledge Hub? <https://geo-knowledge-hub.org>


- ❑ An open-source digital repository of open, authoritative and reproducible knowledge created by members / participants of the Group on Earth Observations
- ❑ *“From data to knowledge”*




About
Read more about the digital repository of Earth Observations applications


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Find Earth Observations applications


Contribute
Share your Earth Observations applications


Communities
Engage with experts on Earth Observations applications

What does a Knowledge Package actually look like?

Human populations in the world's mountains: spatio-temporal patterns and potential controls

GEO Mountains 1 [show affiliations](#)

DOI: [10.5072/1.11111111](https://doi.org/10.5072/1.11111111)

Keywords
mountains population urbanization GEO Mountains

Supplementary Information (data, code, figures) for Human populations in the world's mountains: spatio-temporal patterns and potential controls (Thornton et al.), collaboration between GEO Mountains and GEO Human Planet. Can be used to

Licenses

Elements of the Knowledge Package

Components

Oct 09, 2021 [Project](#) [Download](#)

Human populations in the world's mountains: spatio-temporal patterns and potential controls
Thornton [Affiliations](#)
Paper and Supplementary Information (SI) Appendix for Thornton et al.

Oct 09, 2021 [Software](#) [Code](#)

Human populations in the world's mountains: spatio-temporal patterns and potential controls (code)
Thornton [Affiliations](#)
Code for Human populations in the world's mountains: spatio-temporal patterns and potential controls (Thornton et al.).

Oct 27, 2021 [Dataset](#) [Code](#)

Human populations in the world's mountains: spatio-temporal patterns and potential controls (input data)
Thornton [Affiliations](#)
Input data for Human populations in the world's mountains: spatio-temporal patterns and potential controls (Thornton et al.).

Question and Answers

- ❑ “Provision of full resources (paper, input datasets / dataset links, code, instructions, full output datasets) enable the work to be i) replicated and ii) efficiently modified / extended / repeated (e.g. applied to a different region, updated once new data become available, etc.)

PostGIS



GDAL



What sets the GKH apart?



vs.



- ❑ Plus, submission process very efficient, and supporting team responsible

Main Task Group Objective

- To deliver “Knowledge Packages” pertaining to mountain-relevant applications to the GKH under the banner of GEO Mountains
- To advocate for open and reproducible science (including as a basis for sound decision making / interventions)

Related efforts

☐ GEO Mountains Affiliate Projects

Affiliated Projects

Community Snow Observations (CSO)



CSO is a NASA-funded citizen science campaign to measure snow. The project aims to improve our understanding of snow depth variability in mountainous regions.

We need community-based observers, including backcountry professionals and recreationists, to help gather snow observations. "On the ground" measurements aid interpretations of satellite and airborne snow measurements collected by NASA and other agencies.

[READ MORE ... →](#)

Canadian Mountain Assessment



The Canadian Mountain Assessment (CMA) is advancing an innovative, made-in-Canada approach to knowledge assessment that brings together Indigenous and Western ways of knowing to address three fundamental questions: what do we know, not know, and need to know about Canada's diverse and rapidly changing mountain systems?

The final assessment report will provide a first-of-its-kind look at the state of knowledge of

Next steps

- ❑ Consider submitting any outputs you are developing either through GEO Mountains projects, or else independent projects that nevertheless contribute to our objectives as “Knowledge Packages” to the GKH (to be grouped under the banner of GEO Mountains)
 - ❑ Can use GKH as well as your established repositories(s) – perhaps increased visibility to the GEO community
- ❑ If you are already working under “reproducible and open” workflow, then pulling together a Knowledge Package really requires no / little extra work
- ❑ If you are currently employing more traditional (e.g. GUI-based) workflows, then a little more effort will be required (including thinking about reproducibility from the very beginning), but help is at hand

Discussion

Comments, questions, ideas?



Many thanks for your interest and contributions!

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