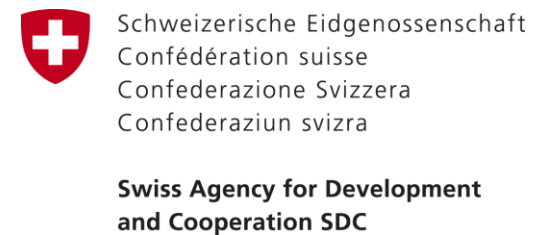


GEO Mountains Task Group 1 (TG1): Kick-Off Meeting – 12.03.25, 14:00 – 15:30 CET



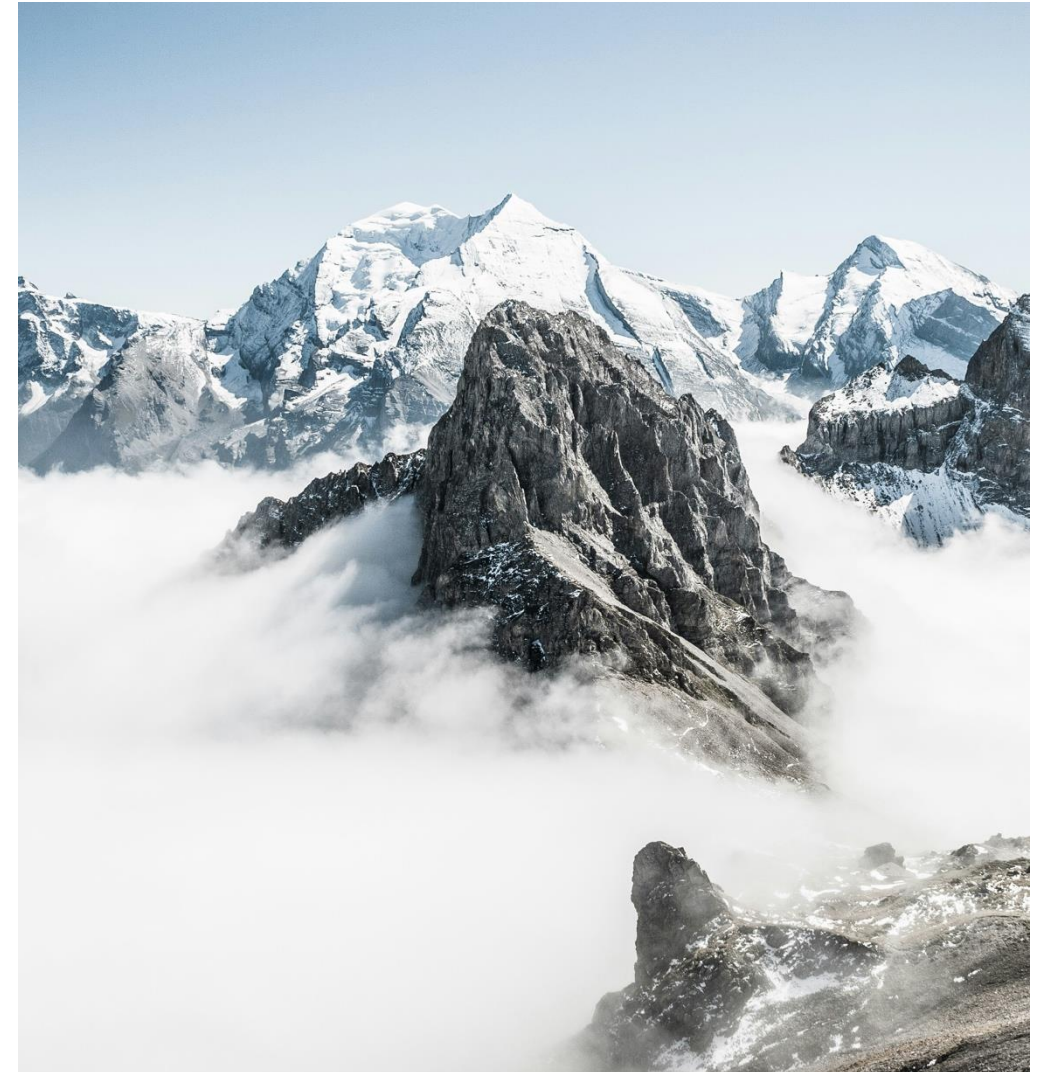
Housekeeping



- Please **raise your hand** to request the floor
- Any comments can be made / questions asked **in the chat**
- The meeting is being recorded** – if you have any concerns about this, please let me know;
the recording will be made available upon request
- The slides will be circulated** to TG1 participants afterwards

Agenda

- Welcome & Introduction
- Short presentation on TGs background & objectives, Terms of Reference
- Introducing TG1 – Inventories: background information on Inventories
- Presentation of the feedback results
- Conclusion – Next steps



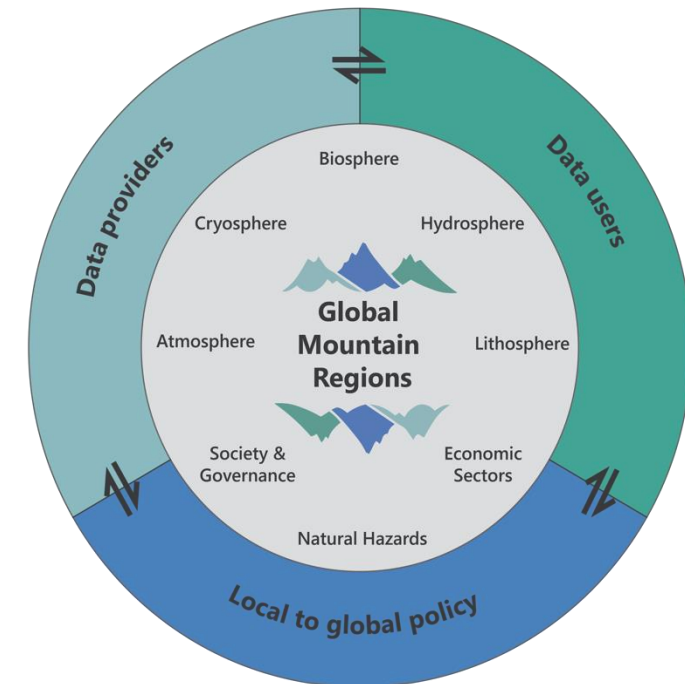


GEO Mountains

The Global Network for Observations and Information in Mountain Environments

A Group on Earth Observations (GEO) Work Programme Initiative since 2016; co-led by the Mountain Research Initiative (MRI) & the National Research Council of Italy (CNR)

- ❑ To **increase** the **discoverability**, **accessibility**, and **usability** of a wide range of **data and information** pertaining to **mountains globally**
- ❑ To **integrate** and **apply** such data and information for **scientific**, **policy**, and **practical impact**
- ❑ To **build**, **connect**, **coordinate**, and **share capacity** across a **community** of mountain researchers, practitioners, and policy makers

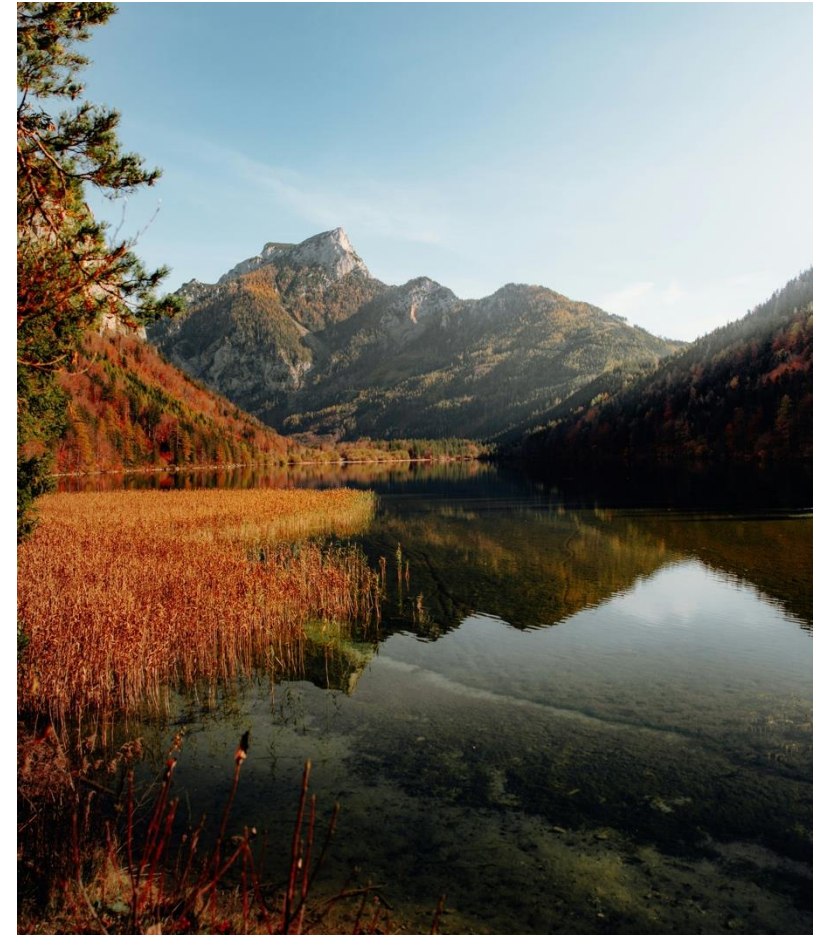


<https://geomountains.org/>

TGs Background & Objectives



- ❑ Some Task Groups (TGs) were initiated in 2022 to help implement GEO Mountains' **2023-2025 Implementation Plan**
- ❑ **Structured framework** for gathering experts, data providers, and users **to collaborate** on specific activities
- ❑ **Learning and sharing of expertise** across regions / disciplines
- ❑ The **TGs are now being refined / rejuvenated** to consolidate previous efforts and meet future objectives
- ❑ TGs are **time-bound to the GEO 2023-2025 Work Programme Implementation Plan.**
- ❑ A future GEO Post-2025 implementation plan is currently in development



Overview of TGs Terms of Reference (ToRs)



- ❑ TGs are open to **GEO Mountains Members**, who participate voluntarily and collaboratively
- ❑ Each TG should appoint a **lead or co-leads** who will, *inter alia*, be responsible for liaison with the GEO Mountains Secretariat
- ❑ TGs should **define objectives and outputs** until the **end of 2025** (with the support and facilitation from the Secretariat)
- ❑ Each TG would ideally meet at least **twice a year**. The Secretariat can support and assist in scheduling and maintaining records.
- ❑ TG Participants **can propose / initiate new activities** that align with GEO Mountains' goals, and **can join / leave TGs at any time**
- ❑ **All contributions will be fully acknowledged** on the GEO Mountains website, communications with GEO, and in related outputs (e.g. paper / dataset co-authorship)
- ❑ **The GEO Mountains Secretariat facilitates each TG** by providing planning assistance, communications, and operational support



TGs Overview



TG 1:
Inventories

TG 2:
*Regional
engagement
activities*

TG 3:
*Global Policy
Outreach*

TG 4:
*Treaties'
Spatialisation*

TG 5:
*Essential
Mountain
Variables*

TG 6:
*Contributions
to Global
Assessments*

TG 1: Inventories



Objectives:

*Maintain and further develop the GEO Mountains inventories of in situ stations and their corresponding data, as well as gridded datasets; provide **visualisation and access**; **analyse** data availability, coverage / gaps, and the extent to which standard measurement protocols are followed*

Initial Tasks:

- Task 1: Provide feedback on the current GEO Mountains In Situ and General inventories**
- Task 2: Contribute to the inventories by adding/completing data for the next release (Q4 2025), including consideration of alternative / qualitative data
- Task 3: Improve/revise the inventory infrastructure / system (post-2025) (linked with the new GEO Mountains website)
- Task 4: Conduct gap analysis, plus paper (post-2025)

General Inventory (GI)

Background information



- ❑ Intends to facilitate data discovery for researchers, policymakers, and other stakeholders
- ❑ Complements the In Situ Inventory (broader coverage data, beyond station locations)
- ❑ Provide comprehensive metadata for, and web links to, open gridded datasets, data portals, and other tools that may be useful in the context of mountainous applications;
- ❑ Mainly focused on remotely sensed and modelled datasets spanning multiple disciplines.
- ❑ It also contains a variety of open-source software and tools.
- ❑ Both region-specific and global resources are included.

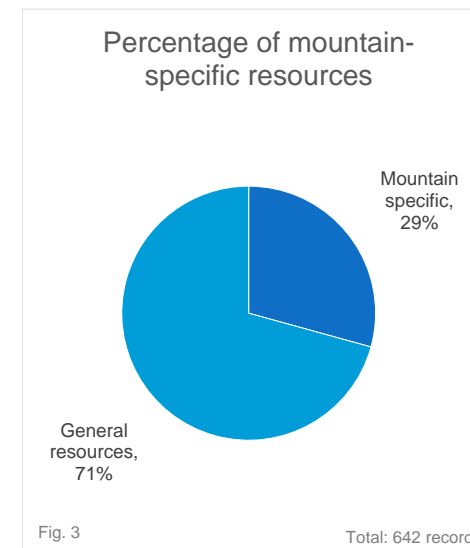
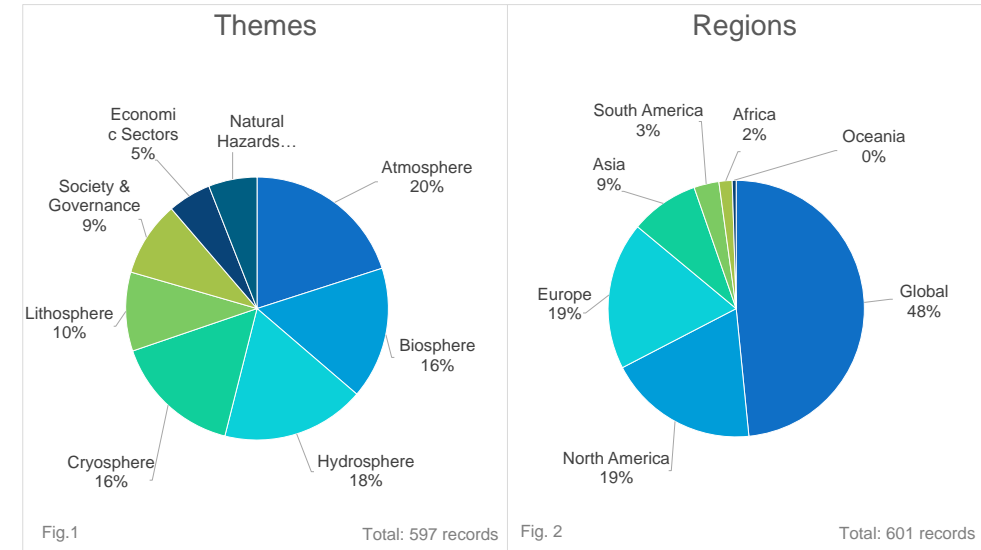
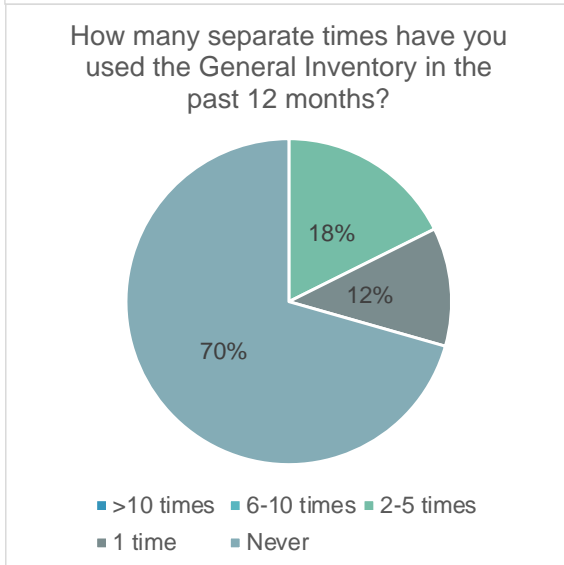
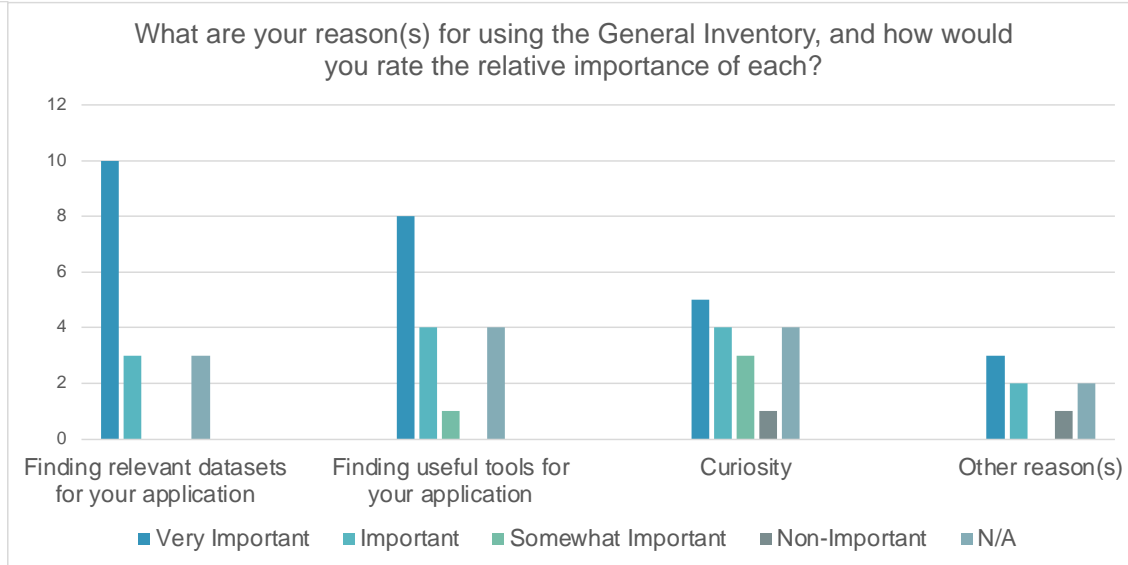
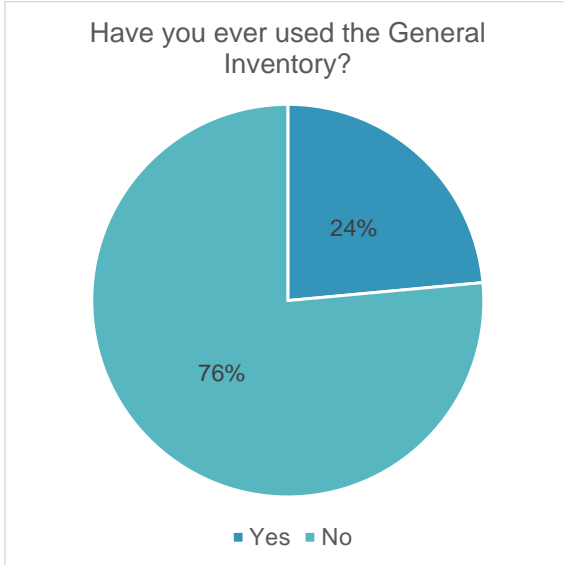


Fig. 1-2: Thematic and geographic coverage of the General Inventory.
 Fig. 3: Percentage of mountain-specific resources within the General Inventory.

<https://geomountains.org/resources/resources-surveys/general-inventory>

GI: Feedback regarding the utility

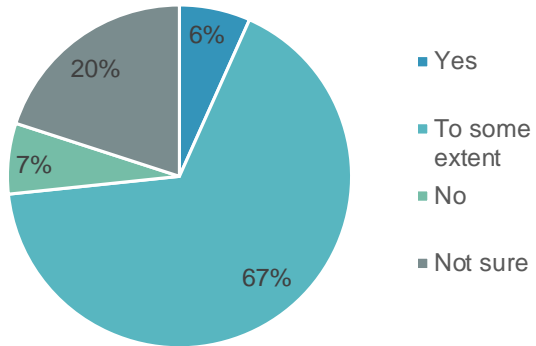


- 17 respondents
- Most respondents used it to find relevant/useful datasets and resources
- Average score: **3.6/5**
- 9 respondents suggested the **scope / objective of GI is unique**
- No similar tools were identified by respondents

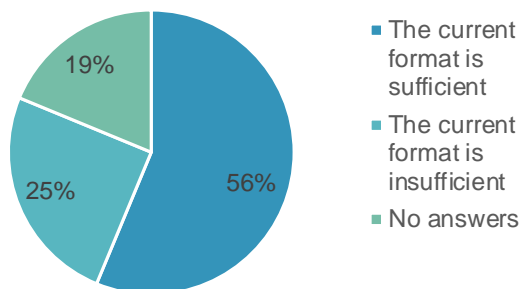
GI: Feedback regarding possible improvements



In your opinion, is the current content of the General Inventory sufficiently comprehensive / of good quality?

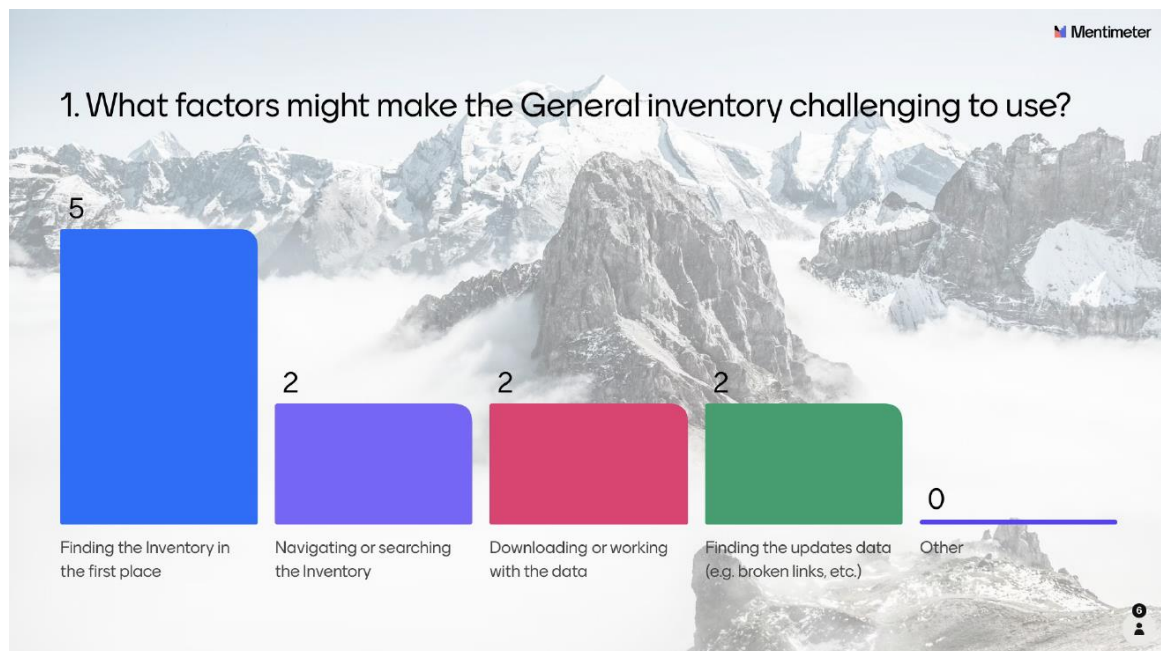


In your opinion, is the way in which the General Inventory is currently presented (i.e., a simple .csv file for download) is sufficient, or should a more sophisticated interface be developed?



- Improved and updated** (e.g. links) version would be useful
- Improve **regional coverage** and **thematic data coverage** (e.g. South Caucasus, Himalaya, South America)
- Develop **guidelines / tutorials** on how to use GI
- Categories could be broken up into more detailed sections
- Metadata** could be improved
- Additional papers** could be developed from the inventory (e.g. gap, coverage, thematic analysis, how to use, etc.)
- The format could be improved, e.g. by developing a web application

GI – Potential Improvements



In-Situ Inventory (ISI) – Background information



A compilation of metadata on in situ observatories and other long term monitoring infrastructure in the world's mountains; an interactive web map is provided, and the entire dataset can also be downloaded

- ❑ Developed by GEO Mountains since 2021 to identify and locate mountain monitoring infrastructure
- ❑ Includes > 50,000 monitoring sites (research + operational) in v2 (Oct 2022).
- ❑ Aims to help stakeholders identify potentially relevant stations, access their data, and enhance collaboration across disciplines and institutions more generally
- ❑ Could be analysed to identify gaps (spatial, including by elevation, and thematic)

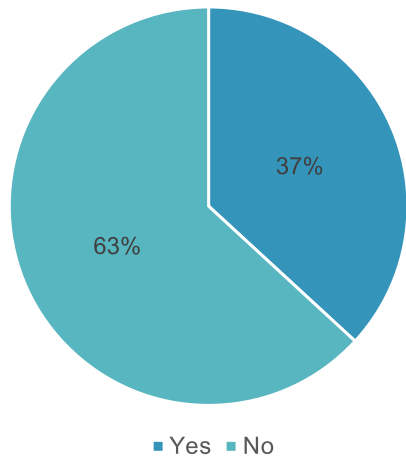


<https://geomountains.org/resources/resources-surveys/inventory-of-in-situ-observational-infrastructure>

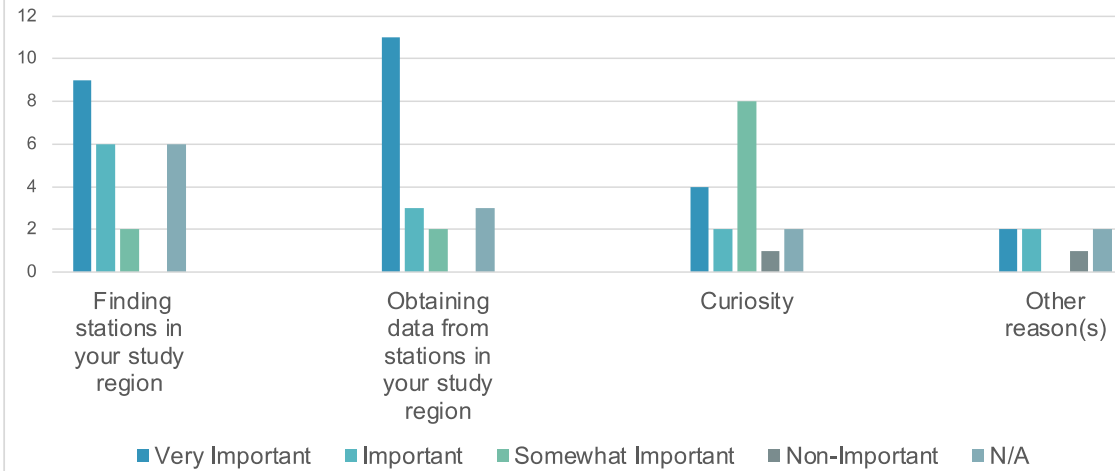
ISI: Feedback regarding the utility



Have you ever used the In Situ Inventory?

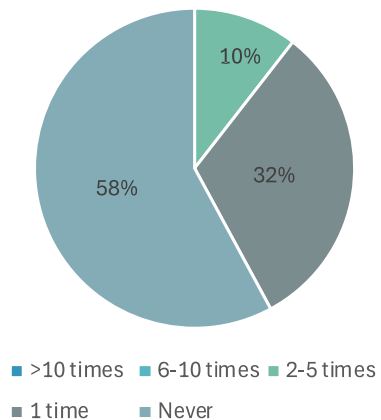


What are your reason(s) for using the In Situ Inventory, and how would you rate the relative importance of each?

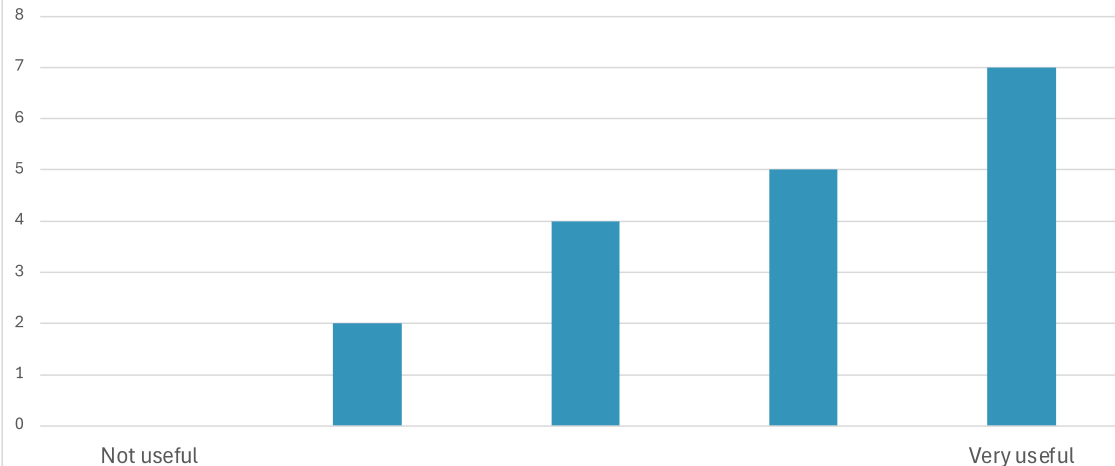


- 19 respondents
- Most respondents used it **to find stations and obtain data** in their study region
- 9 respondents found the **scope / objective of ISI is unique**

How many separate times have you used the In Situ Inventory in the past 12 months?



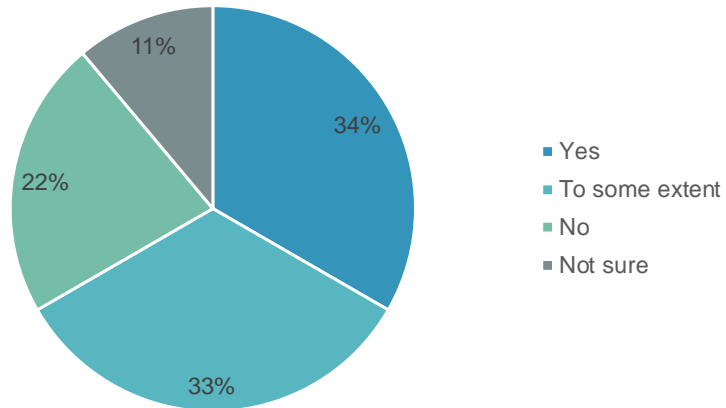
Overall, how useful did you find the In Situ Inventory in meeting your needs / expectations?



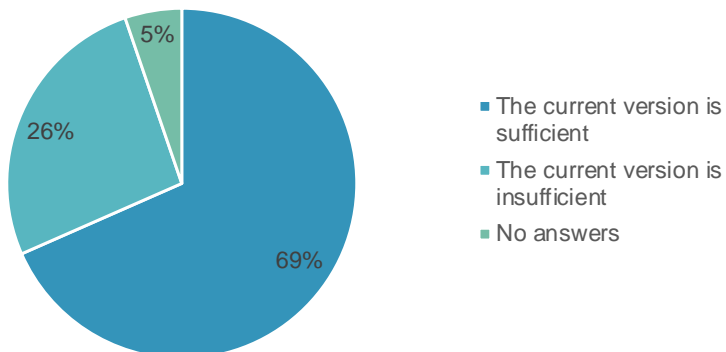
ISI: Feedback regarding possible improvements



In your opinion, is the current content of the In Situ Inventory sufficiently comprehensive / of good quality?

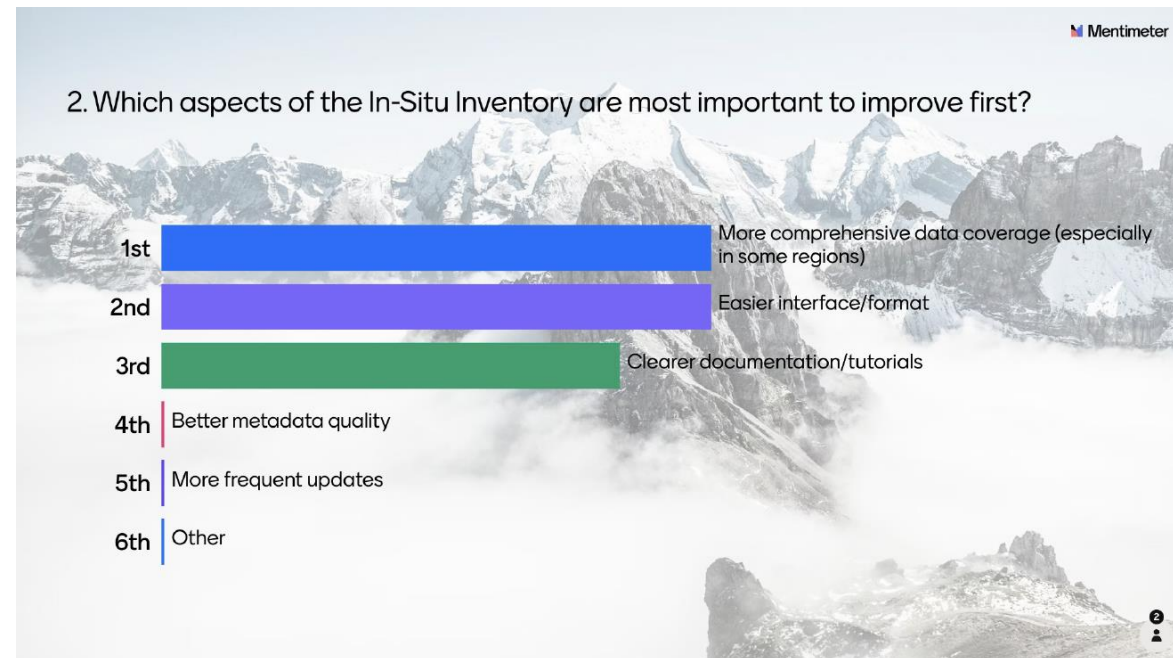
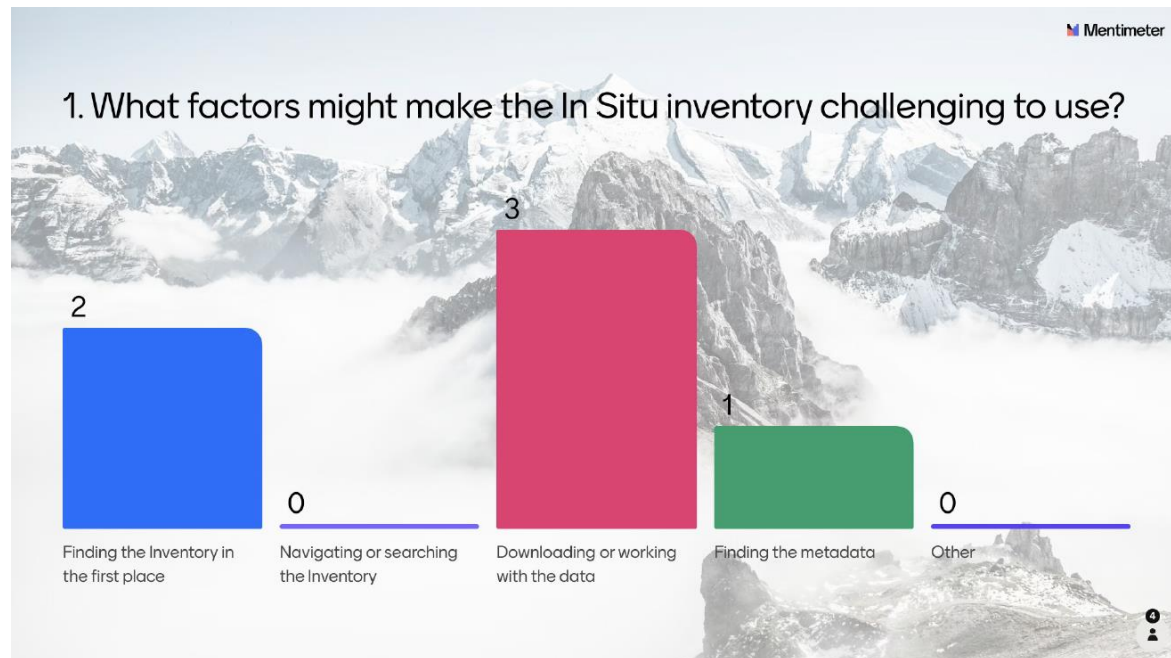


In your opinion, is the way in which the In Situ Inventory is presented (simple web map with with the corresponding table available for download), or should a more sophisticated interface be developed?



- Regional gaps** could be closed, e.g. by contacting monitoring agencies (e.g. hydromet agencies) to include their stations
- The **number of stations and comprehensiveness of each record's metadata** can be improved
- Regular update** would be necessary
- Web-map improvements:**
 - Inclusion of two side-panels: a left panel to provide some filters (that could be collapsible), and a right-panel to visualize the metadata of a selected site, rather than this being shown in the pop up over the map
 - Stations could be **colour coded** to indicate whether the information is complete or not

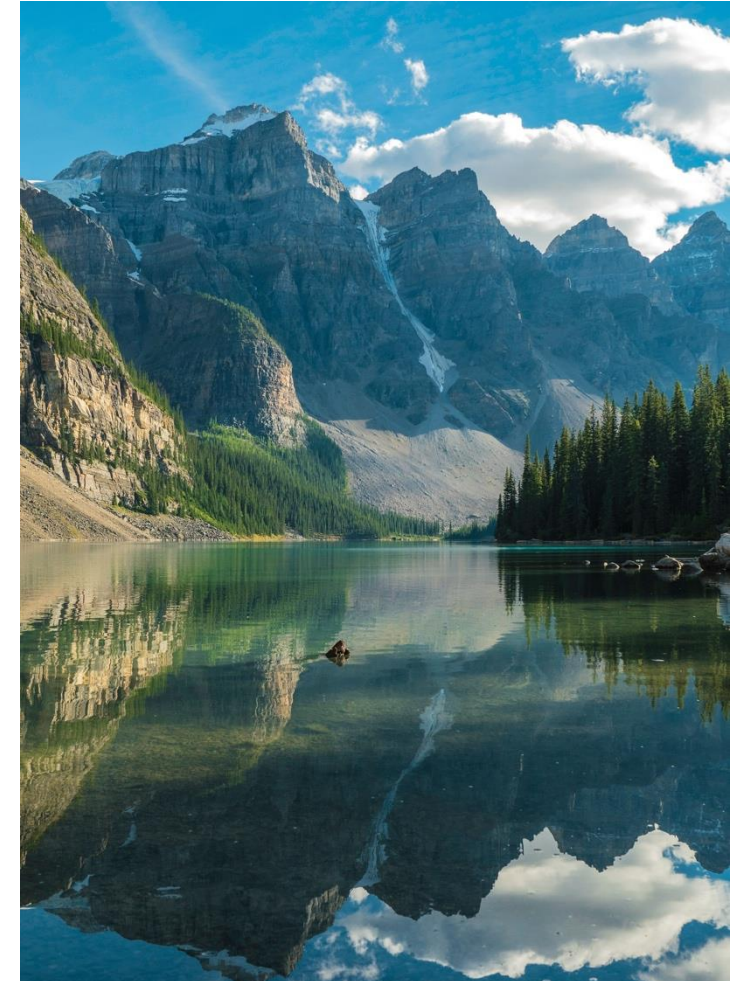
ISI – Potential Improvements



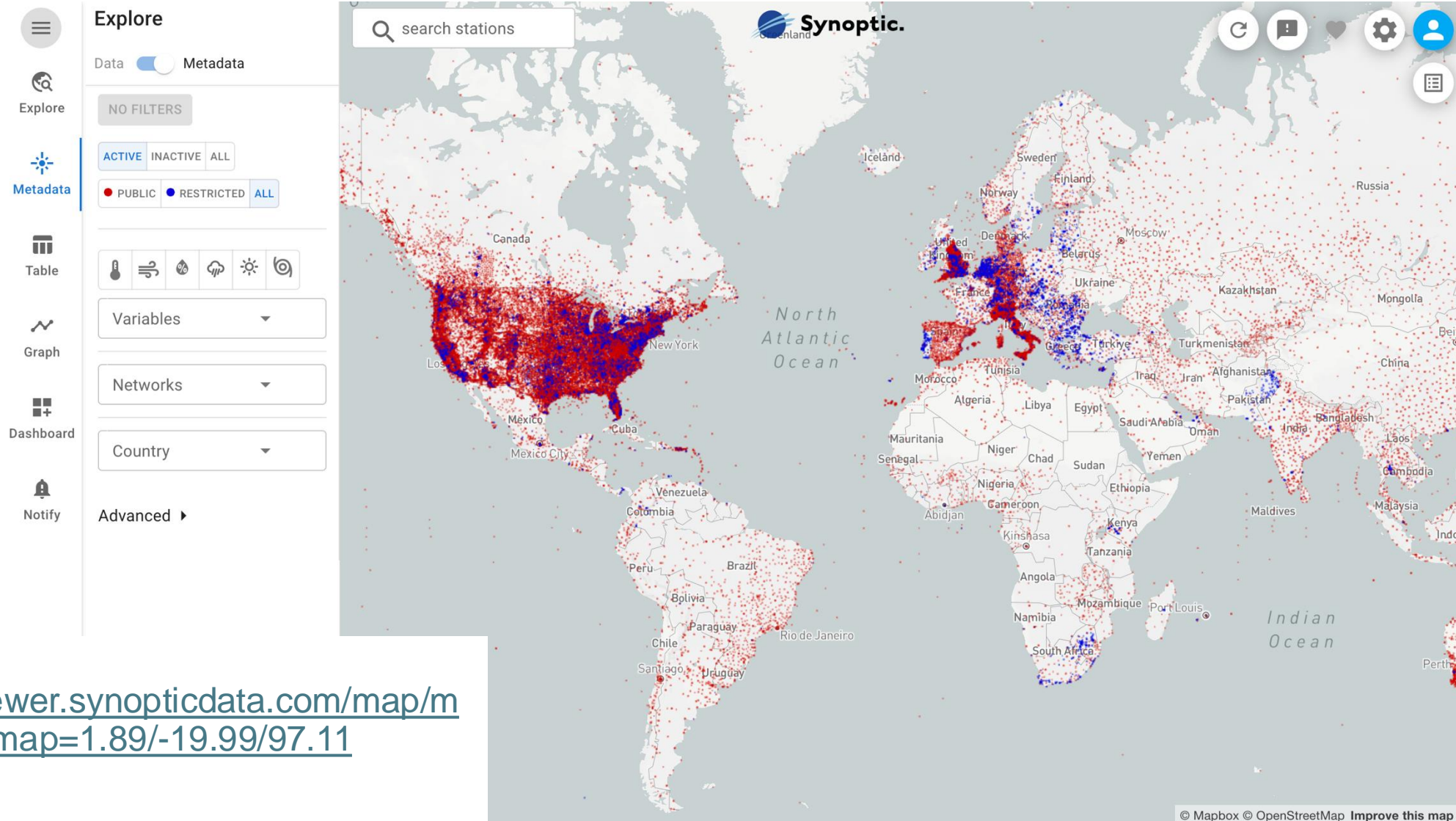
General Discussion



- What single feature or improvement(s) would increase your use (or the usefulness) of the Inventories?
- Would you be willing to help us close the regional data gaps and metadata for existing records (e.g. by sourcing / compiling data)?
- How could we support and facilitate an increase of the dissemination and use of both GEO Mountains inventories?



In-Situ Inventory Possible Improvements



The screenshot displays the Synoptic viewer interface. On the left is a sidebar with navigation options: Explore, Metadata, Table, Graph, Dashboard, and Notify. The 'Explore' section is active, showing a 'Data' toggle set to 'Metadata'. Below this are filter buttons for 'NO FILTERS', 'ACTIVE', 'INACTIVE', 'ALL', 'PUBLIC', 'RESTRICTED', and 'ALL'. There are also icons for various data types and dropdown menus for 'Variables', 'Networks', and 'Country'. The main area is a world map with a search bar at the top left and a 'Synoptic.' logo. The map is populated with red and blue dots representing station locations. The 'North Atlantic Ocean' and 'Indian Ocean' are labeled. The bottom right corner of the map area contains the text '© Mapbox © OpenStreetMap Improve this map'.

Example:
<https://viewer.synopticdata.com/map/metadata#map=1.89/-19.99/97.11>

General Inventory Possible Improvements



❑ Incorporation (e.g. as a Tag) into Google Earth Engine (GEE) Data Catalogue or in the GEE Comunity Catalogue

Browse by dataset tags

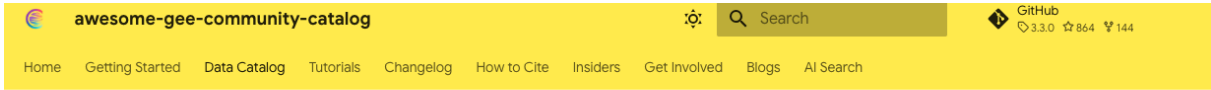
Filtrer les tags d'ensemble de données

16 jours 10 ensembles de données	Toutes les trois heures 4 ensembles de données	3dep 3 ensembles de données	8 jours 17 ensembles de données	aai 2 ensembles de données	abi 15 ensembles de données
au-dessus du sol 3 ensembles de données	accessibilité 3 ensembles de données	accumulation 2 ensembles de données	aérosol 10 ensembles de données	afrique 23 ensembles de données	agriculture 17 ensembles de données
ahn 5 ensembles de données	qualité de l'air 16 ensembles de données	en vol 5 ensembles de données	albédo 8 ensembles de données	alh 2 ensembles de données	alos 8 ensembles de données
alos2 6 ensembles de données	aluminium 4 ensembles de données	annuel 6 ensembles de données	antarctique 4 ensembles de données	aod 2 ensembles de données	aqua 27 ensembles de données
aqueduc 3 ensembles de données	polaire 6 ensembles de données	surface 2 ensembles de données	asia 2 ensembles de données	aspect 15 ensembles de données	aster 2 ensembles de données
ambiance 8 ensembles de données	atmosphérique 5 ensembles de données	australie 12 ensembles de données	avhrr 8 ensembles de données	fonds de carte 3 ensembles de données	socle 2 ensembles de données

Browse by dataset tags

mountain

No matches



- Data Catalog
- Data Themes**
- Population & Socioeconomic >
- Geophysical, Biological & Biogeochemical >
- Elevation and Bathymetry >
- Soil Properties >
- Global Land Use and Land Cover >
- Regional Land Use and Land Cover >
- Hydrology >
- Oceans and Shorelines >
- Agriculture, Vegetation and Forestry >
- Analysis Ready Data >
- Global Utilities, Assets and Amenities Layers >
- Biodiversity, Ecosystems & Habitat Layers >
- Weather and Climate Layers >
- Global Events Layers >
- Fire Monitoring and Analysis >

Data Themes

Community Datasets 3992

The Awesome GEE (Google Earth Engine) Community Catalog is a valuable resource for researchers, developers, and environmental scientists. It organizes a diverse range of geospatial datasets into thematic groups, making them more accessible and findable. This structured approach allows users to efficiently locate datasets pertinent to their specific fields of study or interest.

Insiders Program and Insiders only datasets

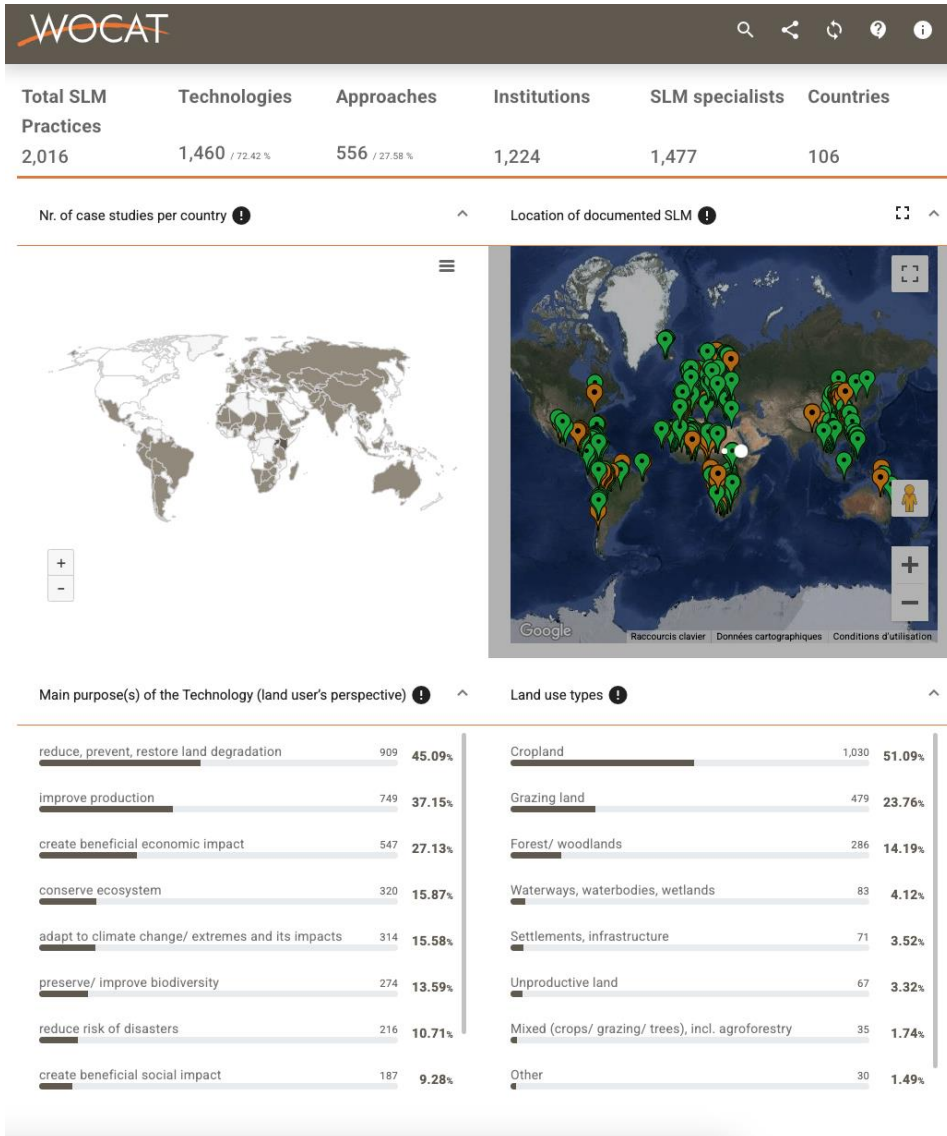
Some datasets are part of the Insiders only datasets and they can be found here. The Insiders program is designed for those who are helping keep open source projects sustainable and support the growth and curation of the catalog. The Insiders Program grants access to a few special selection of datasets. You can be part of the program click on the link to find out more.

Thematic Groups

The datasets in the Awesome GEE Community Catalog are categorized into several thematic groups, for example:

- Population and Socioeconomic Datasets: These datasets provide crucial information on demographics, economic activities, and social indicators, which are essential for urban planning, public health, and socio-economic research.
- Hydrology Datasets: This category includes data on water bodies, hydrological cycles, and water quality, supporting research and decision-making in water resource management, flood risk assessment, and environmental conservation.
- Global Land Use and Land Cover Datasets: These datasets offer insights into land use patterns and changes in land cover over time, aiding studies in agriculture, forestry, urbanization, and climate change.
- Climate and Weather Datasets: Essential for climate science, these datasets include historical and real-time data on weather patterns, temperature, precipitation, and other climatic factors.

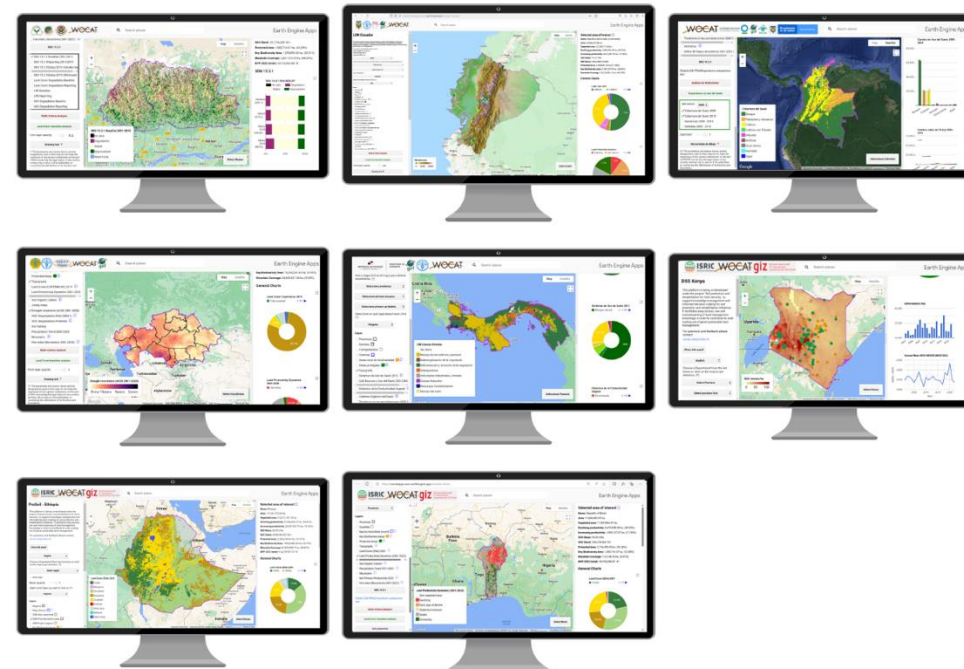
General Inventory Possible Improvements



- ❑ Develop a web interface, with filter possibilities and an interactive map, dashboards, etc.
- ❑ E.g. WOCAT catalogue

LDN Decision Support Systems

These apps, also used as LDN Decision Support Systems (LDN DSS) by different countries, include the results of participatory processes for mapping Land degradation and estimating SDG 15.3.1, including the 3 LDN sub indicators and final degradation map. They also include additional indicators and maps selected by each country experts, including national, regional and global maps of land degradation, soil properties, protected areas, key biodiversity areas, precipitation trends, fire intensities, sustainable land management practices, etc. The LDN DSS allows decision makers to easily compare results and obtain statistics across spatial scales and landscapes, including a multi-criteria module to identify areas with specific characteristics to prioritise different types of interventions to achieve the country's LDN targets. The principle of convergence of evidence can be applied to identify hotspots of degradation as well as areas of false positives/negatives.



<https://wocat.net/en/ldn/wocatapps/>

Your ideas? Other suggestions and applications for consideration?

Possible Next Steps

- ❑ Priorisation exercise results will be considered to plan the next version release (planned for Q4 2025.)
- ❑ Based on feedback and guidance from this TG, opportunities for improvements will be explored as well as new format(s) (e.g. new platform for both inventories / integrate them in existing platforms, web map)
- ❑ Expansion of Geographic and Thematic Coverage
 - ❑ Identify missing regions or data types (e.g., socio-economic data, additional environmental parameters)
 - ❑ **Contribute** by adding your(s) (or others) sites, by sharing the inventories, by contacting hydromet agencies, etc. → Forms will be shared after this meeting



Many thanks!



Please kindly provide some feedback to this meeting:

<https://form.jotform.com/250623861588364>