EGU, Wien, 05/05/2026

EGU Splinter Meeting

PermaCOST – COST Action CA24157

COordinated and STandardized Monitoring of Permafrost Response to Climate Change

Oct. 2025 – Oct. 2029

Coline Mollaret (Action Chair, Uni Fribourg, Switzerland)

& Filip Hrbacek (Vice Chair, Masaryk University, Brno, Czech Republic)

On behalf of the Core Group : Line Rouyet, Ylva Sjöberg, Flavius Sirbu, Mohammad Farzamian, Jan Blöthe, Francesco Brardinoni, Cécile Pellet, Andreas Kellerer-Pirklbauer, Manja Zebre, Bernd Etzelmüller, and Alina Milceva

Leading team from Austria, Czechia, Germany, Italy, Norway, Portugal, Romania, Slovenia, Sweden and Switzerland

Agenda

- What is COST?
- What is PermaCOST?
  - Goals, leading structure, Working Groups
- PermaCOST Community Survey
  - Aims & insight into the first submitted answers
- PermaCOST Networking tools
  - And upcoming activities
- Open discussion

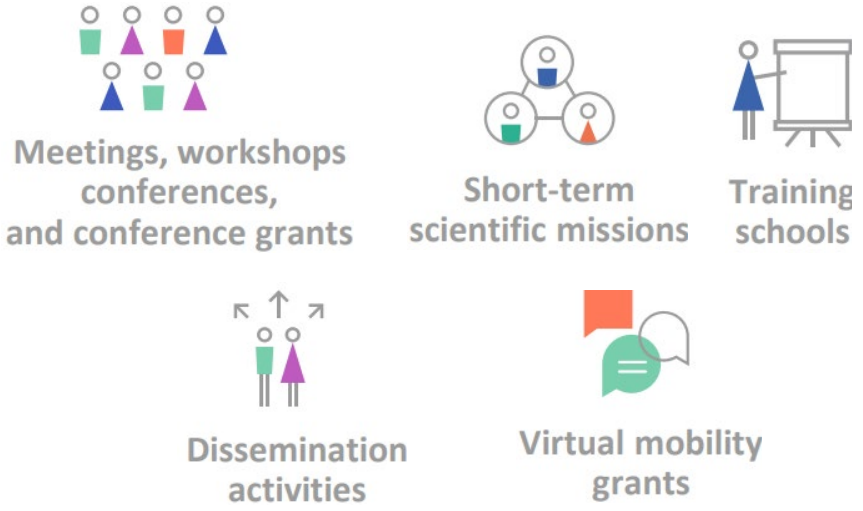
+ Coffee & Cookies
+ Group photo

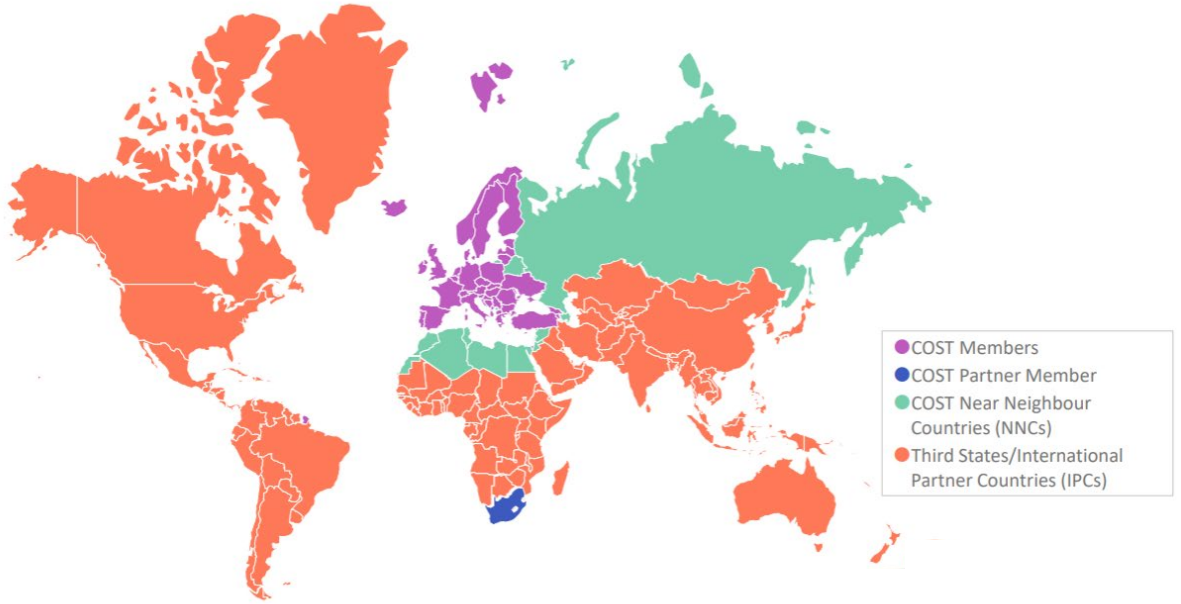
What is a COST Action?

- **4 year project**
- **Supporting Networking activities**
- **Promoting international collaboration**
- **Promoting geographical, age and gender balace**
- **Open participation**
- **Budget of 1st year: 130 k€**
  (average budget of the four years: 600 k€)

→ Increasing research communities access to funding

→ Triggering structural changes in national research systems





COST membership

41 Full COST Members

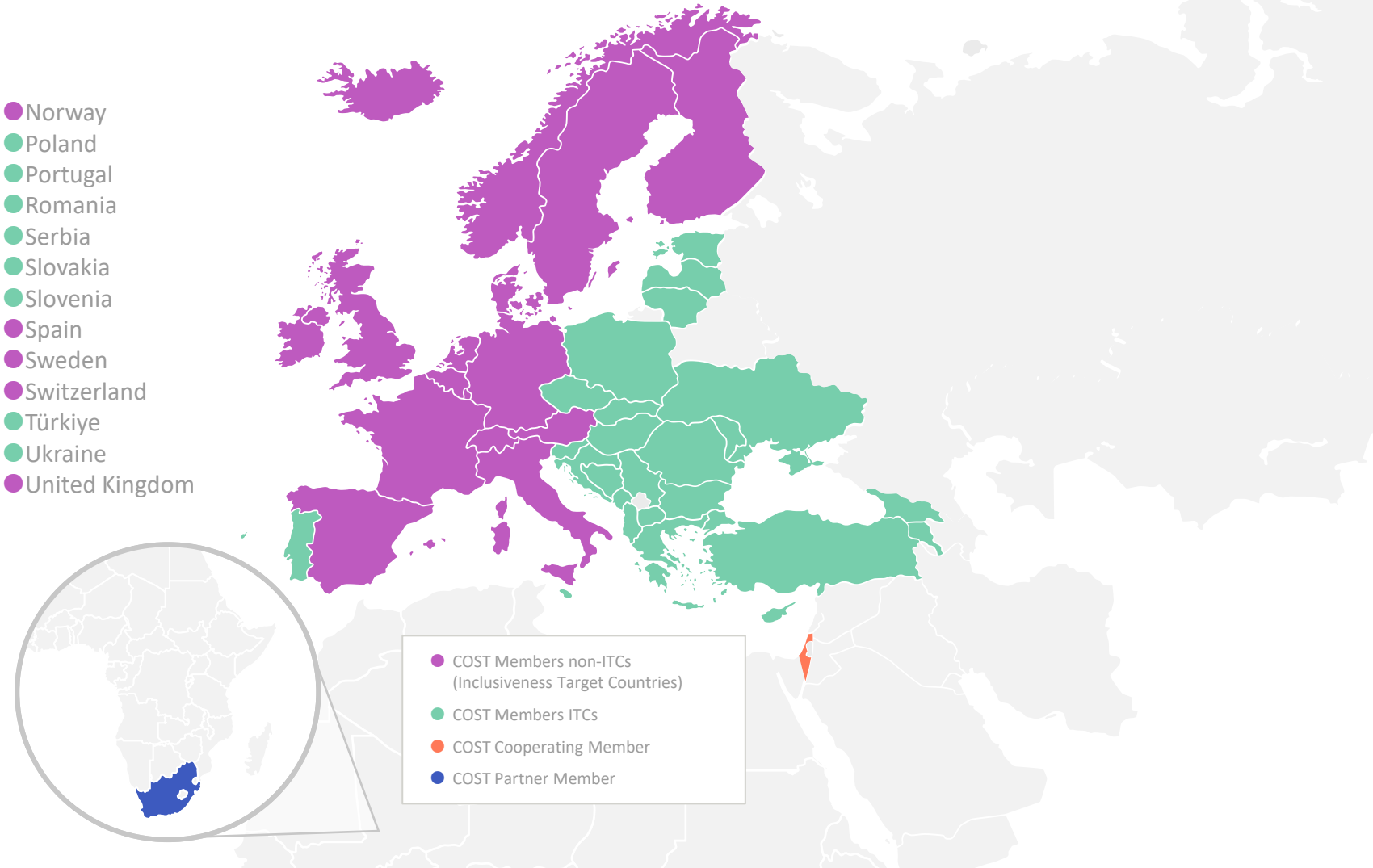
- Albania
- Armenia
- Austria
- Belgium
- Bosnia and Herzegovina
- Bulgaria
- Croatia
- Cyprus
- Czech Republic
- Denmark
- Estonia
- Finland
- France
- Georgia
- Germany
- Greece
- Hungary*
- Iceland
- Ireland
- Italy
- Latvia
- Lithuania
- Luxembourg
- Malta
- The Republic of Moldova
- Montenegro
- The Netherlands
- The Republic of North Macedonia
- Norway
- Poland
- Portugal
- Romania
- Serbia
- Slovakia
- Slovenia
- Spain
- Sweden
- Switzerland
- Türkiye
- Ukraine
- United Kingdom

1 Cooperating Member

- Israel

1 Partner Member

- South Africa



What is PermaCOST?

PermaCOST Action brings together **European permafrost researchers, stakeholders, and practitioners** with expertise in different measurement techniques and permafrost conditions to work towards a **coordinated and standardised monitoring of permafrost response to climate change**. Our goal is to facilitate an overall comparability of data sets and time series of various permafrost variables for a **better characterisation of the long-term permafrost evolution on the global scale**.

Core Group



Coline Mollaret
Action Chair
University of Fribourg, Fribourg
Email Address
Switzerland



Filip Hrbacek
Action Vice-Chair
Masaryk University, Brno
Email Address
Czechia



Cécile Pellet
Grant Holder Scientific Representative & WP5 leader
University of Fribourg, Fribourg
Email Address
Switzerland



Line Rouyet
Science Communication Coordinator
NORCE Research AS, Tromsø
Email Address
Norway



Ylva Sjoberg
Grant Awarding Coordinator
Umeå Universitet, Umeå
Email Address
Sweden



Manja Zebre
Grant Awarding Co-Coordinator
Geological Survey of Slovenia, Ljubljana
Email Address
Slovenia



Flavius Sirbu
WG1 Leader
West University of Timișoara, Timișoara
Email Address
Romania



Andreas Kellerer-Pirklbauer
WG1 Co-Leader
University of Graz, Graz
Email Address
Austria



Mohammad Farzamian
WG2 Leader
Instituto Nacional de Investigação Agraria e Veterinaria, Oeiras
Email Address
Portugal



Jan Blöthe
WP3 Leader
Albert-Ludwigs-Universität Freiburg, Freiburg
Email Address
Germany



Francesco Brardinoni
WP4 Leader
Alma Mater Studiorum – Universita di Bologna, Bologna
Email Address
Italy

PermaCOST - organisation

Leadership

Role	Leader
Action Chair	Dr Coline MOLLARET
Action Vice-Chair	Dr Filip HRBACEK
Science Communication Coordinator	Dr Line ROUYET
Grant Awarding Coordinator	Dr Ylva SJOBERG
WG1 Leader	Dr Flavius SIRBU
WG2 Leader	Dr Mohammad FARZAMIAN
WG3 Leader	Prof Jan BLÖTHE
WG4 Leader	Dr Francesco BRARDINONI
WG5 Leader	Dr Cecile PELLET
WG1 Co-leader	Dr Andreas KELLERER-PIRKLBAUER
Grant Awarding Co-coordinator	Dr Manja ZEBRE

Additional roles

Role	Leader
WG1 Co-leader	Dr Andreas KELLERER-PIRKLBAUER
WG 4 Co-leader	Prof Bernd ETZELMÜLLER
Grant Awarding Co-coordinator	Dr Manja ZEBRE
Grant evaluation committee	Dr Hanna LEE
Grant evaluation committee	Dr Jerzy SMYKLA
Grant evaluation committee	Ms Alina MILCEVA

2 National representatives within the Management Committee

40 people - 26 countries represented (increasing)

A few spots available in the MC

PermaCOST

cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

Management Committee

Country	MC Member
Austria	Dr Annett BARTSCH
Austria	Dr Andreas KELLERER-PIRKLBAUER
Belgium	Dr Mahya ROUSTAEI
Bulgaria	Dr Gergana GEORGIEVA
Bulgaria	Dr Atanas KISYOV
Czech Republic	Dr Filip HRBACEK
Czech Republic	Dr Martina SOBOTKOVA
Finland	Dr Olli KARJALAINEN
France	Dr Diego CUSICANQUI
Germany	Dr Michael ANGELOPOULOS
Germany	Prof Sebastian UHLEMANN
Hungary	Dr Adam IGNECZI
Hungary	Dr Balázs NAGY
Iceland	Dr Pavla DAGSSON-WALDHAUSEROVA
Israel	Prof David BRODAY
Italy	Dr Jacopo BOAGA
Italy	Dr Francesco BRARDINONI
North Macedonia	Dr Marjan DELIPETREV
Norway	Prof Bernd ETZELMÜLLER
Norway	Dr Hanna LEE
Poland	Dr Jerzy SMYKLA
Portugal	Dr Mohammad FARZAMIAN
Romania	Dr Alexandru ONACA
Romania	Dr Razvan-Andrei POPESCU
Slovenia	Dr Manja ZEBRE
Spain	Dr Juan ignacio LÓPEZ
Spain	Dr Marc OLIVA
Sweden	Dr Ylva SJOBERG
Switzerland	Dr Cecile PELLET
Türkiye	Prof Attila CINER
United Kingdom	Dr Mihai CIMPOIASU

PermaCOST Structure in 5 Working Groups

- **WG1**: **Identify the key complementary methods** to permafrost temperature and ALT for comprehensive assessment of permafrost state and evolution
  - General community assessment (all methods), **definition of sub-groups for WG2-4**
- **WG2**: Compile and homogenize **data acquisition standards** for the identified methods
  - Common guidelines, field test and training school for implementation
- **WG3**: Compile and homogenize **data processing standards** for the identified methods
  - Common guidelines/tools, comparison exercise and training school for implementation
- **WG4**: Compile a **European-wide assessment of permafrost** state and evolution based on the identified methods
  - Regional permafrost products, Multi-method synthesis and community publication
- **WG5**: Promote and support the **development of new operational monitoring networks**
  - Coordination with existing networks, toolkit for new network and community support

www.cost.eu/actions/CA24157/ 90%

CA24157 - COordinated and STandardized Monitoring of Permafrost Response to Climate Change (PermaCOST)

Downloads

Description

Permafrost has been dramatically warming and degrading in most mountain and polar regions, with farreaching and long-term implications for natural and anthropogenic environments. In this context of rapid changes and large socio-economic impacts, the increased scrutiny from the society and the growing demand for sound data from stakeholders make permafrost monitoring a timely and highly relevant field of research.

Action Details

MoU - 066/25

CSO Approval date - 19/05/2025

Start date - 03/10/2025

End date - 02/10/2029

https://permacost.eu/

How can I participate?

- Read the Action Description MoU
- Inform the Main Proposer/Chair of your interest (email)
- Apply to join your Working Groups of interest
- Please note, Management Committee nominations are carried out through the COST National Coordinators

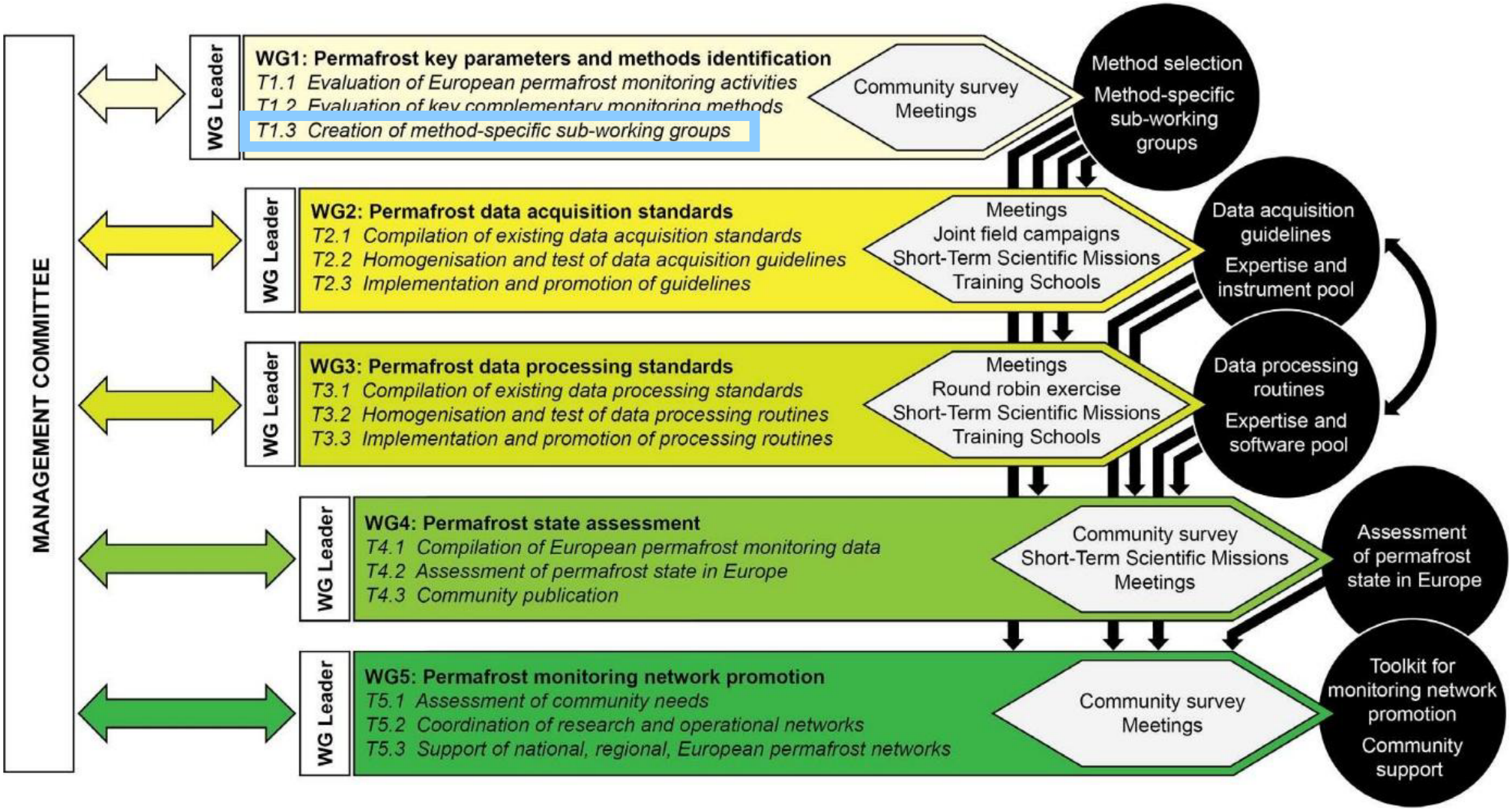
cost EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

PermaCOST members in numbers

- PermaCOST has >**150 members**! (+ regular new applications)
- From **37 countries** (30 European countries)

- 50 % of the members are 40 years old or younger

- 35 % of the members are women (55)
- 35 % of the members are from the so-called ITC (Inclusiveness-Targeted countries)
- But only 8 % are women from ITC countries


MANAGEMENT COMMITTEE
WG Leader
WG1: Permafrost key parameters and methods identification
T1.1 Evaluation of European permafrost monitoring activities
T1.2 Evaluation of key complementary monitoring methods
T1.3 Creation of method-specific sub-working groups
Community survey
Meetings
Method selection
Method-specific sub-working groups
WG Leader
WG2: Permafrost data acquisition standards
T2.1 Compilation of existing data acquisition standards
T2.2 Homogenisation and test of data acquisition guidelines
T2.3 Implementation and promotion of guidelines
Meetings
Joint field campaigns
Short-Term Scientific Missions
Training Schools
Data acquisition guidelines
Expertise and instrument pool
WG Leader
WG3: Permafrost data processing standards
T3.1 Compilation of existing data processing standards
T3.2 Homogenisation and test of data processing routines
T3.3 Implementation and promotion of processing routines
Meetings
Round robin exercise
Short-Term Scientific Missions
Training Schools
Data processing routines
Expertise and software pool
WG Leader
WG4: Permafrost state assessment
T4.1 Compilation of European permafrost monitoring data
T4.2 Assessment of permafrost state in Europe
T4.3 Community publication
Community survey
Short-Term Scientific Missions
Meetings
Assessment of permafrost state in Europe
WG Leader
WG5: Permafrost monitoring network promotion
T5.1 Assessment of community needs
T5.2 Coordination of research and operational networks
T5.3 Support of national, regional, European permafrost networks
Community survey
Meetings
Toolkit for monitoring network promotion
Community support

Definition of method-specific sub-working groups

1. RGIK (rock glacier inventories and kinematics)
2. IDGSP (Database on geoelectrical survey on permafrost) and other geophysical methods
3. Thermal-atmospheric measurements
4. Bio-geo-hydro (lab and in situ) methods
5. Interdisciplinary (social sciences, outreach, etc.)

1. Surface dynamics group
2. Subsurface structure group (indirect, direct)
3. Thermal-atmospheric group (including surface, near-surface, and deep boreholes)
4. Bio-geo-hydro group (lab and in situ)
5. Interdisciplinary group? Social science, societal impacts, outreach group

1. Kinematics group (multi-landforms, including RGIK)
2. Geophysics group (subsurface characterization, including IDGSP +AERT, Refraction Seismic, IP, GPR, EM)
3. Thermal-atmospheric group (GTN-P)
4. Bio-geo-hydro group (lab and in situ)
5. Interdisciplinary group (social sciences, outreach, etc.)

Community Survey

Link to Survey: **https://permacost.eu/wg1/**

Survey objectives:

- **Understand the diversity of the permafrost community.**
- **Map the expertise, research focus, data practices, and geographical distribution of professionals working on permafrost**
- Identify the current challenges in data acquisition and processing, the existing protocols and standards, the emerging trends, and the expectations for collaborations within PermaCOST.
- Collect key information to support the work planned in the other Working Groups (WG2-5).

Community Survey

Link to Survey: **https://permacost.eu/wg1/**

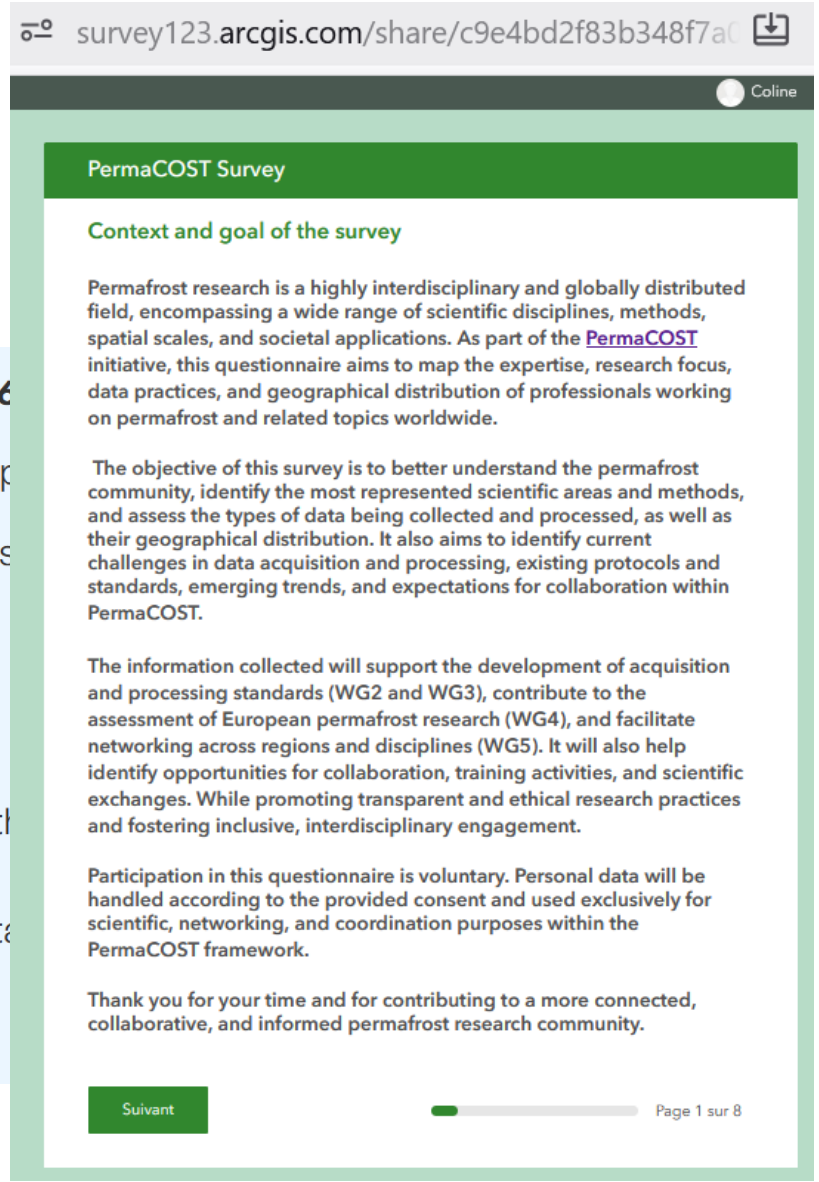
We kindly ask all PermaCOST members to answer the PermaCOST Survey **before 19th of June 2026**

We encourage you to share the survey within your professional networks to help us reach a broader p

The questionnaire was prepared as part of WG1 to map the expertise, research focus, data practices distribution of professionals working on permafrost and related topics worldwide.

Objectives of the survey:

- Understand the diversity of the permafrost community.
- Map the scientific areas and methods, assess the types of collected and processed data, and th distribution.
- Identify the current challenges in data acquisition and processing, the existing protocols and sta trends, and the expectations for collaborations within PermaCOST.
- Collect key information to support the work planned in the other Working Groups (WG2-5).

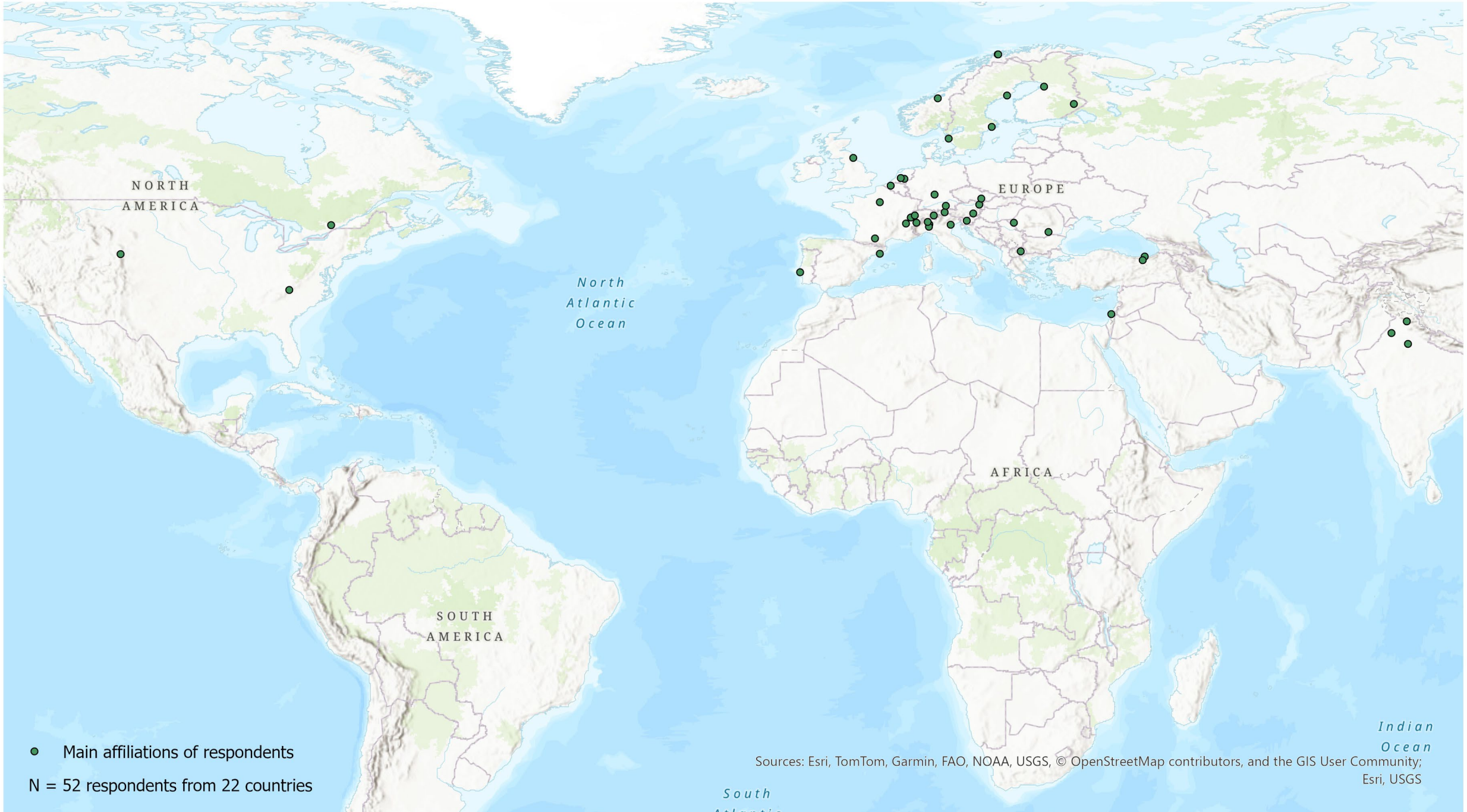


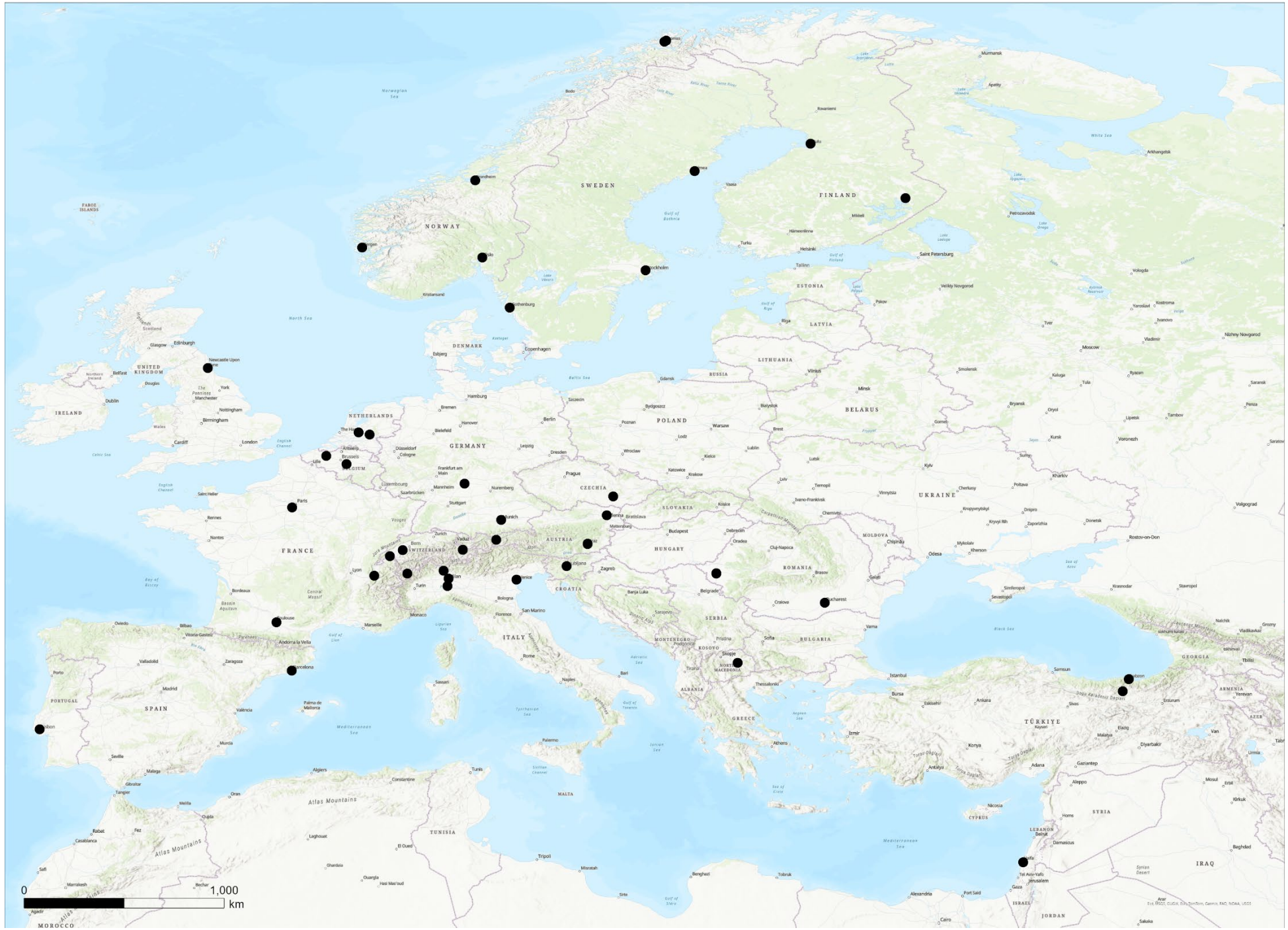
PermaCOST Permafrost Community Survey
First insight into the answers

- 58 people answered the survey after 1 month (i.e. in ~April 2026)
- From 23 different countries

Please take time to answer the survey yourself and share with colleagues!

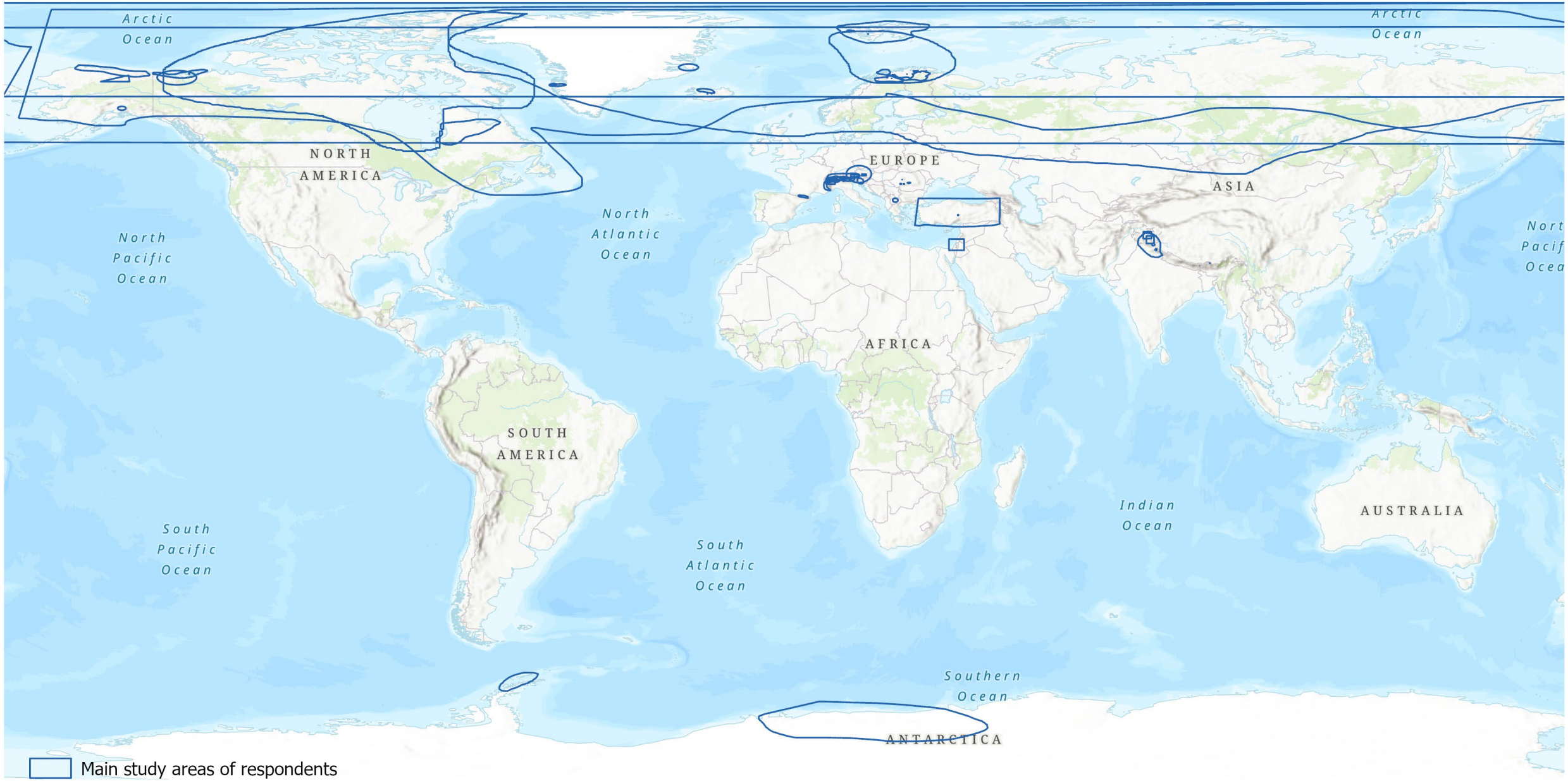
Geographic Distribution of Survey Respondents' Main Affiliations





EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

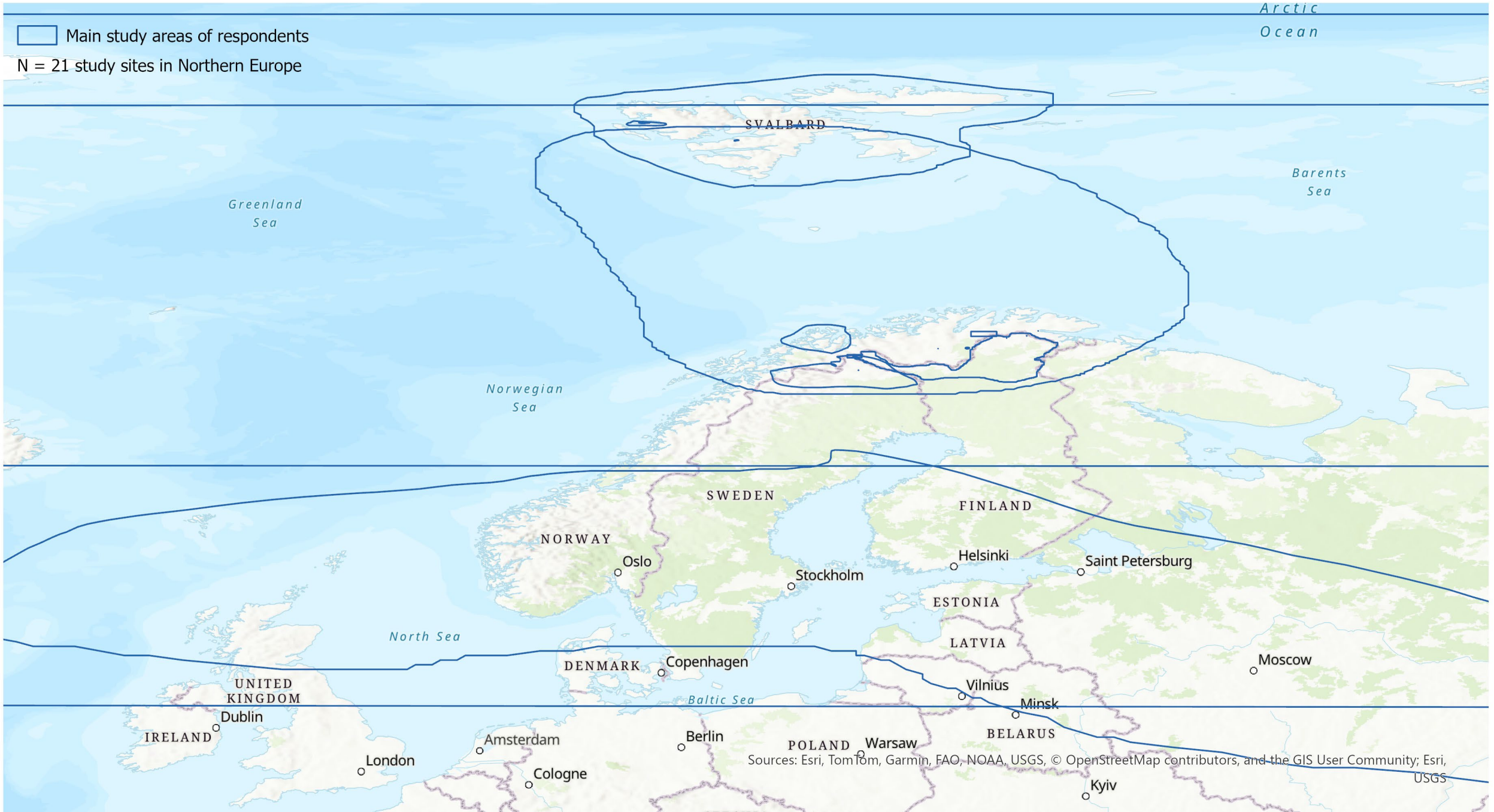
Geographical Distribution of Respondents' Study Sites



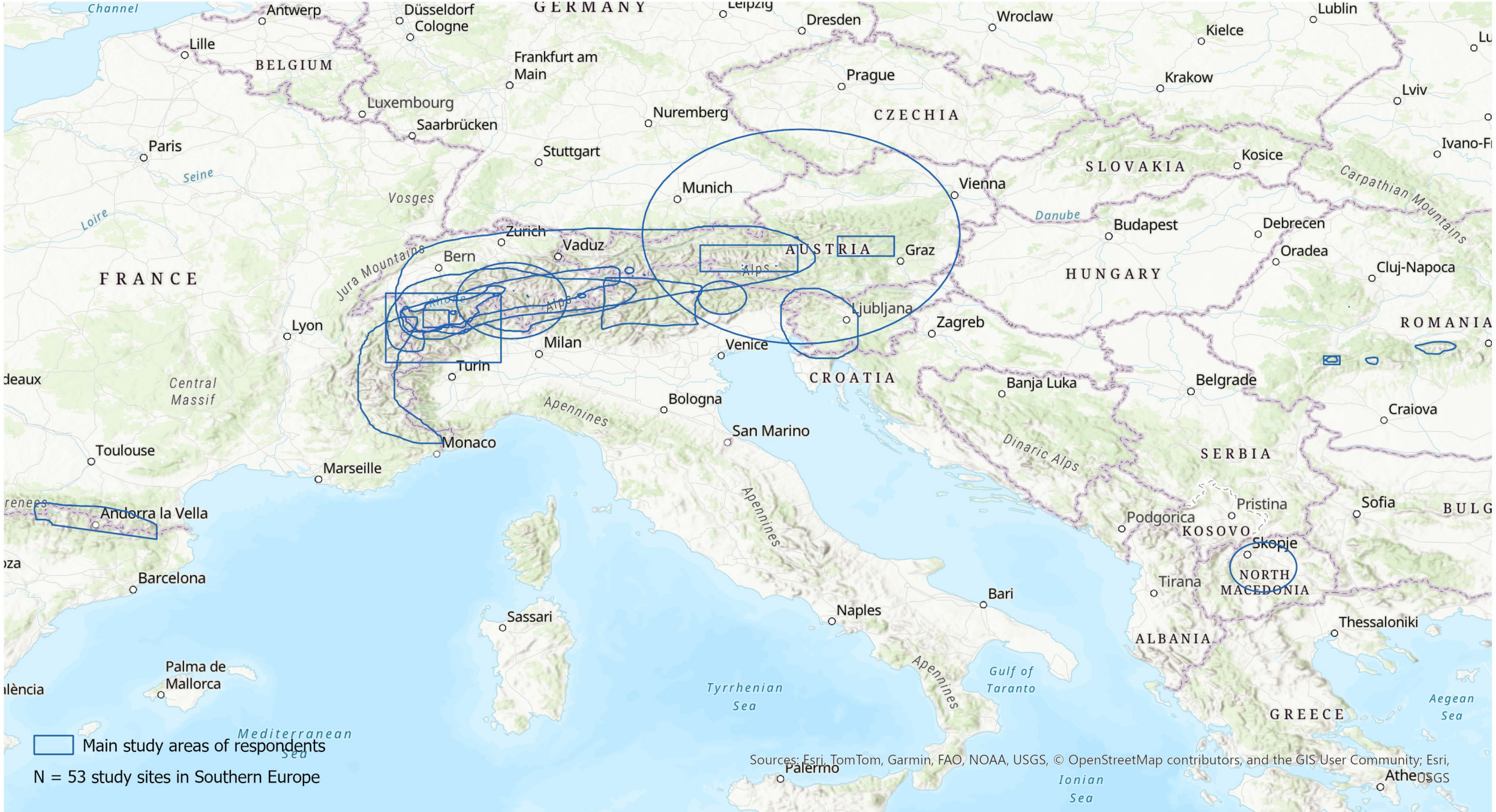
N = 101 study sites from 52 respondents across 22 countries

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community; Esri, USGS

Geographic Distribution of Survey Respondents' Study Sites in Northern Europe

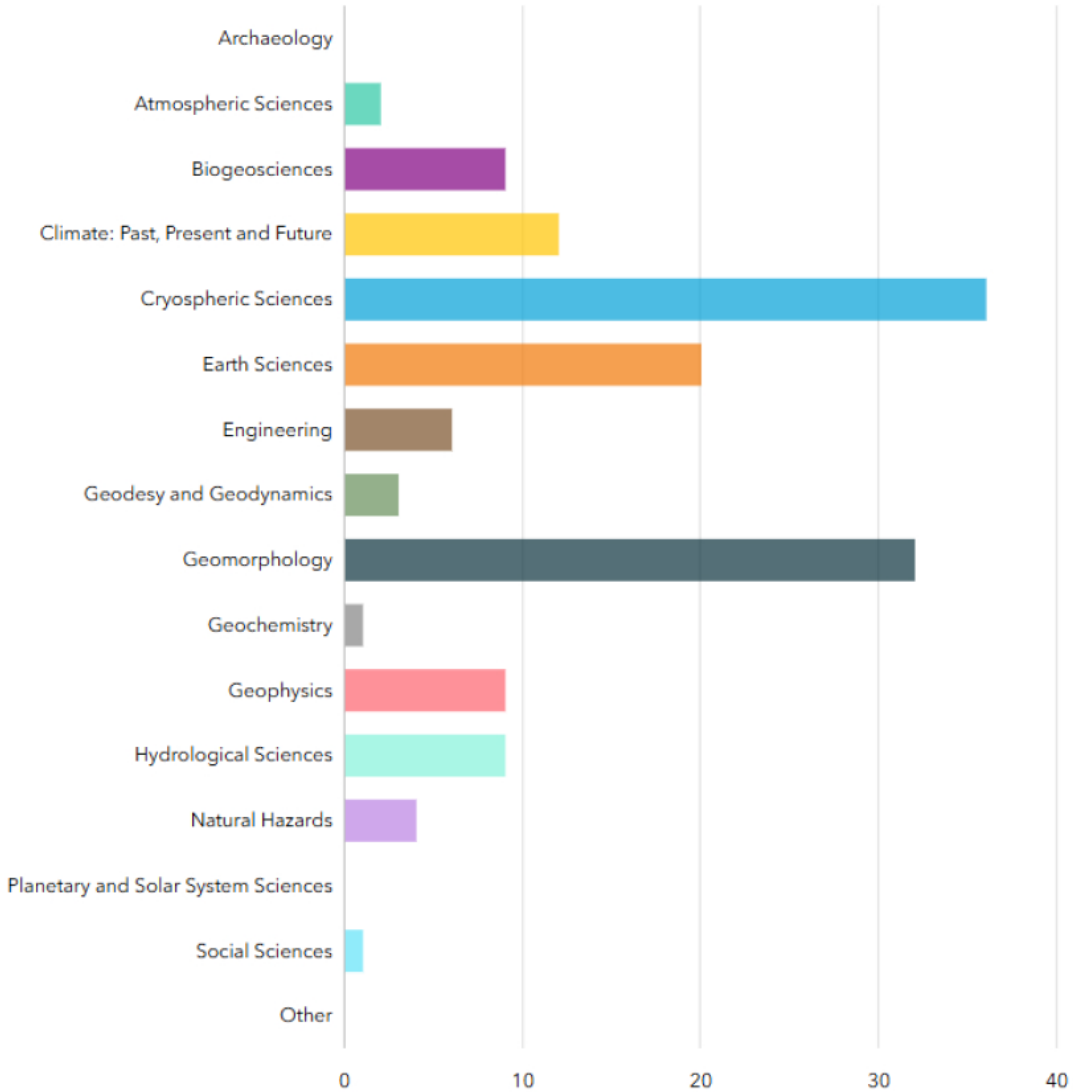


Geographical Distribution of Respondents' Study Sites in Southern Europe

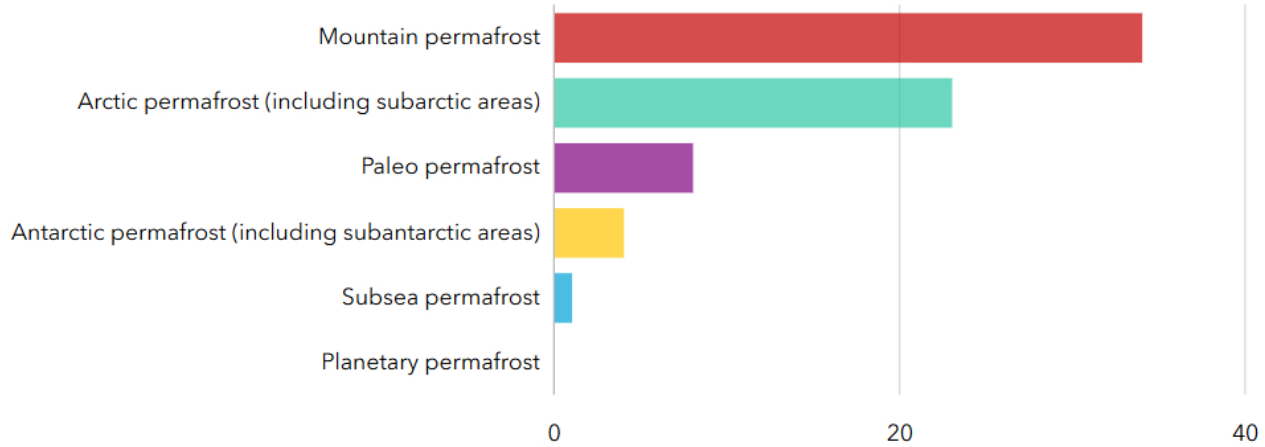


Overview of PermaCOST Community Survey Responses

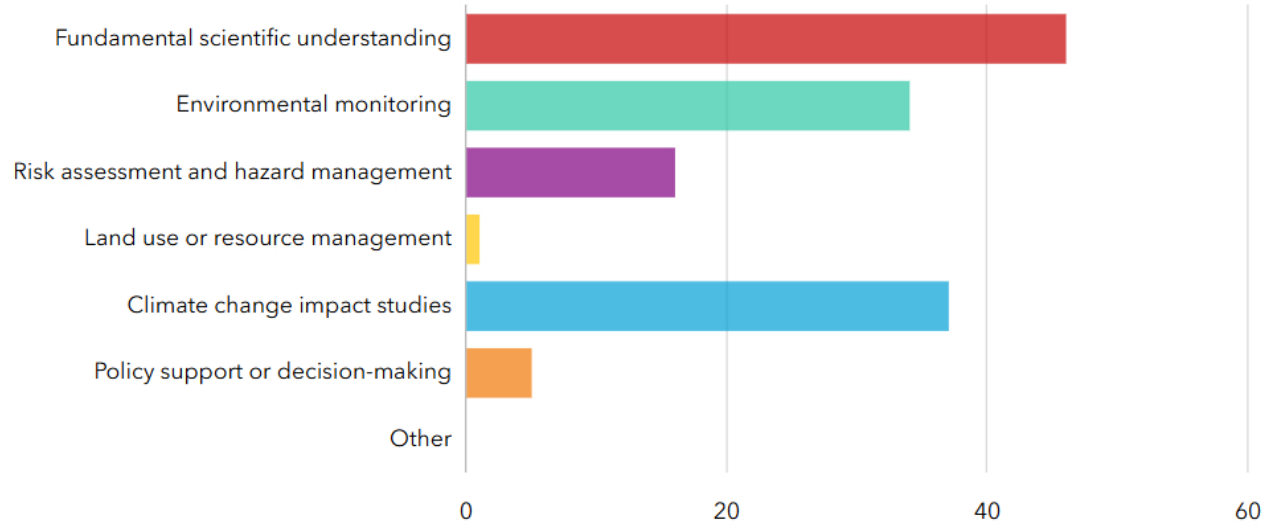
Main Scientific Research Area



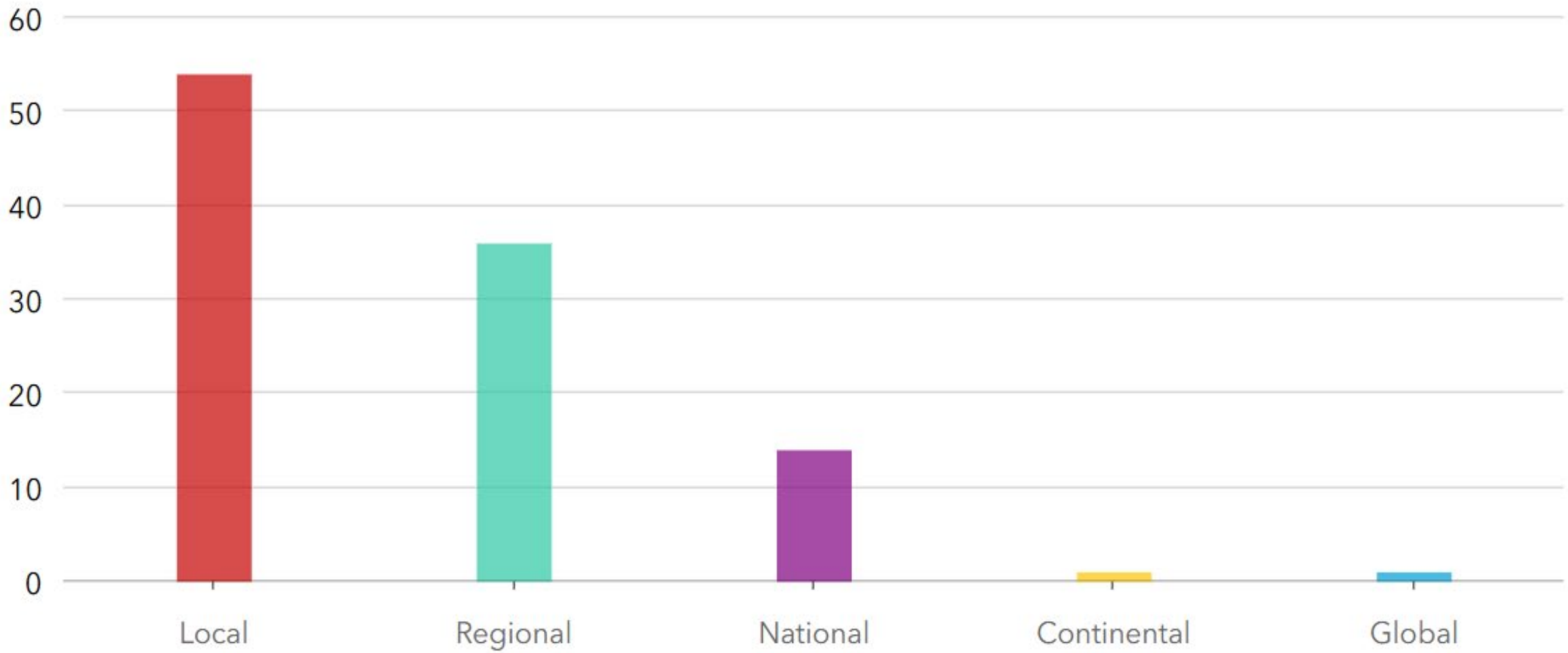
Main Permafrost Focus



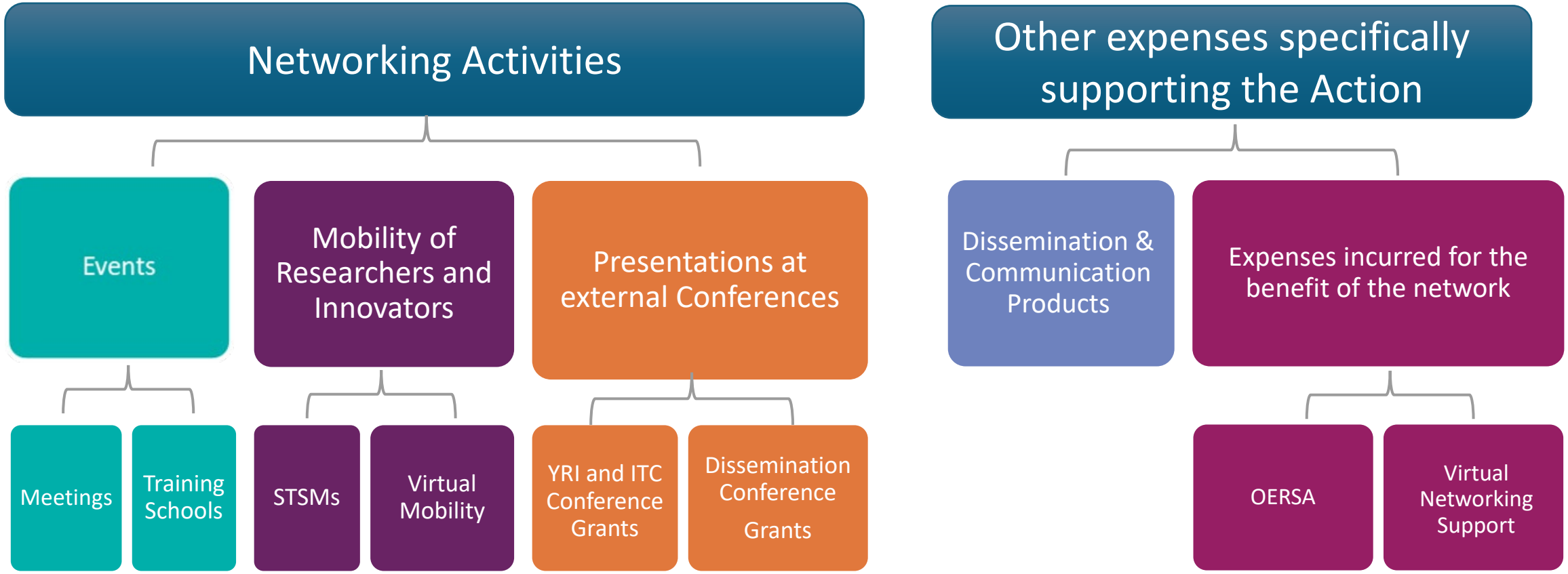
Main Purpose of Permafrost Activities



Spatial scales of produced/acquired data



What are the COST Networking tools?



STSM: Short-Term Scientific Mission

YRI: Young Researcher and Innovator
ITC: Inclusiveness-Targeted Country

OERSA: Other Expenses Related to Scientific Activities

Short-term Scientific Mission

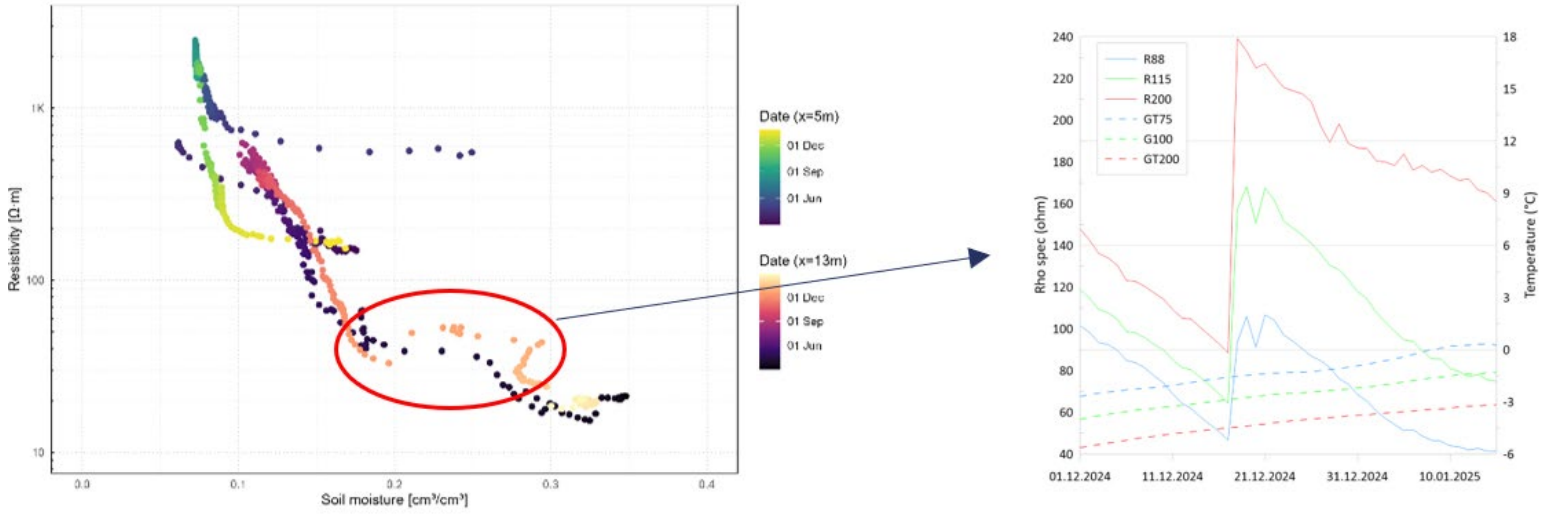
- Purpose: mobility, networking, training, support of young researchers
- STSM procedure
  - Launched by COST MC
  - "First comes first serves" basis, until budget is spent – usually 4-5 STSM available per year
  - Evaluation procedure (2 reviewers, scoring of application)
- Proposal structure
  - Application plan (Goals, working plan, expected outputs)
  - Motivation
  - Justification of the cost (in accordance with COST rules)
- After STSM
  - Reporting
  - Reimbursement

Proposed STSM: Utilization and challenges of A-ERT system for active layer thickness monitoring

Host: Christian Hauck, University of Fribourg

Motivation:

- To solve the issues with A-ERT results
- Unexpected behaviour in early thawing season → a big impact to data interpretation
- Finding a way of geographical approach for geophysical data



COST reimbursement rules

https://www.cost.eu/uploads/2025/11/COST-TRR-Rules-2025-2026.pdf

TRAVEL REIMBURSEMENT RULES

(Summary applicable from 1 November 2025 to 31 October 2026)

Click here for the complete Travel Reimbursement Rules (Annex 1-A1-3) and here for how to submit a travel claim in e-COST.

What is reimbursed when you participate to a COST event?





1

Daily Allowance

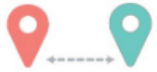
Rate per day is based on country location.

- Covers **accommodation, meals, short distance travel and other incidental costs**
- Calculation based on number of attended days, and travel to and from the event location
- Local participants can claim 50%

2

Long distance travel

Journeys **above 101 km (one way)** for the purpose of attending a COST event.



- Using **plane, train, bus, ferry and/or car**
- Reimbursement from departure point to event venue and to final destination
- Deviation from travel for personal or professional reasons is not reimbursed
- Layovers should **not exceed 24 hours,** with travel documents attesting travel hours
- Maximum claim of **EUR 1500 (including travel cancellation insurance and carbon offset fees)**
- All supporting documents to be uploaded to e-COST **(no screenshots)**, shall detail the following:
  - name of service provider
  - full price paid
  - in the case of travel by plane, passenger(s) name, eticket and/or booking references
  - complete travel itinerary: including departure and arrival dates and cities
  - other type of extra charges such as seat reservations, extra leg room, priority boarding, luggage fees, etc.

Use of Car (Long distance travel by car)





- Limited to **1000 km in total**
- Reimbursed at **EUR 0.35 per kilometer**
- Upload to e-COST **parking receipts or screenshot of message confirmation, clearly showing the dates**
- **Free parking** must be justified with an accommodation invoice or attestation from parking provider

3

Other eligible expenses : Visa Expenses



- Visa processing or exit fees related to attending COST events
- All supporting documents should be uploaded to e-COST such as **receipt/stamp from embassy/consulate, and amount paid for the visa**

Non-eligible expenses

The following expenses will never be reimbursed.

- Taxi, parking, tolls, fuel, car rental, extra nights or meals
- Lecture, Conference fees or honoraria
- Rebooking fees
- Luggage, car, life and medical insurance
- Third party service fees for processing visa, sms, printing or postage fees
- Wifi, telephone, laundry, internet, mini bar consumption
- Bank charges, exchange or commission fees

In case of travel disruptions caused by **Force Majeure**, please click here.

Funded by the European Union

Past PermaCOST events



- **Management Committee Meeting** in Brussels, Belgium, Oct. 2025
  23 MC members in person
- Online meetings
- **PermaCOST first General Meeting** in Potsdam (19-20 January 2026), prior the DACH Permafrost Conference
  33 attendants in person + 12 online



Up-coming PermaCOST events and activities

- **ERT Workshop in Fribourg, Switzerland**, 1-4 June 2026

  due to a few invitations declined, ~2 spots available!

- **Training School in Trafoi, Italy**, 31 August-7 Sept. 2026
  - ***Tools for tracking periglacial change: from local to regional approaches***
  - Coordinated by Francesco Brardinoni

- Probably an **online meeting** before summer 2026, date to be defined
  - *to present the results or the interactive map (output of the Community Survey)*

- Management Committee Meeting 2026, date to be defined

- *Workshop on Antarctic permafrost (in consideration, early October)*

ERT workshop

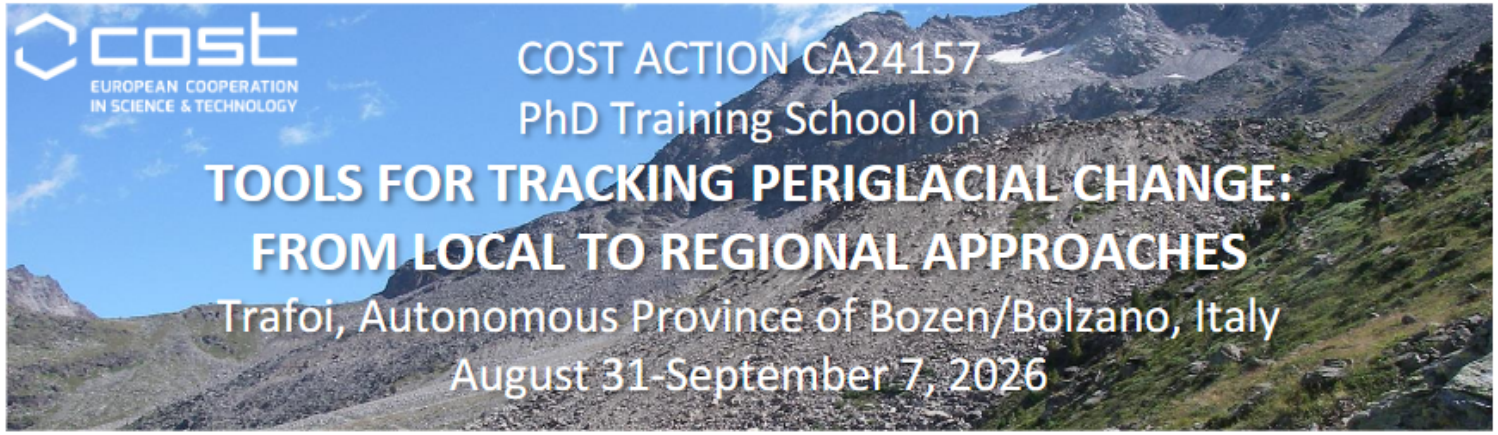
Main objective:

- **Exchange of practices and experiences** regarding ERT surveys in permafrost environments
- Planning of PermaCOST ERT-related activities

Targeted participants:

~20 experienced scientists regarding ERT data on permafrost

	Morning	Afternoon
June 1	*Travel to Fribourg*	▪ **Software training I:** ResIPy (M. Cimpoiasu, BGS) ▪ **Hands-on processing** of different permafrost data sets *Dinner*
June 2	▪ **Software training II:** pyGIMLi (F. Wagner, RWTH Aachen) ▪ **Hands-on processing** of different permafrost data sets *Lunch*	▪ **Short participants input talks** with classical/challenging field examples **(I)** ▪ **Discussion** of different approaches / issues *Dinner*
June 3	▪ **Short participants input talks** with classical/challenging field examples **(II)** ▪ **Discussion** of different approaches / issues *Lunch*	▪ **Discussion of PermaCOST objectives (I):** *WG2+3*: homogenization of data acquisition and processing ▪ **Discussion of PermaCOST objectives (II):** *WG4*: How to assess regional permafrost characteristics based on ERT data? What are suitable outputs for comparative evaluation? *Dinner*
June 4	▪ **Planning of ERT training schools 2027+** ▪ OPTIONAL: AERT/ERT Monitoring topics	*Travel home*



PermaCOST

cost
EUROPEAN COOPERATION
IN SCIENCE & TECHNOLOGY

Training Team

Francesco Brardinoni (University of Bologna) – local contact
Jacopo Boaga (University of Padova) – Yan Hu (University of Fribourg)
Janos Meszaros (HUN-REN, Budapest) – Line Rouyet (NORCE, Tromsø)
Flavius Sirbu (West University of Timișoara) – Sebastian Vivero (EPFL, Sion)

PermaCOST

Webpage

MAIN TRAINING TOPICS

RGIK rock glacier inventorying: geomorphological mapping and InSAR-based kinematic characterization; Ground truthing; UAV/GNSS-based surveying; Electrical Resistivity Tomography (ERT)

PROVISIONAL SCHEDULE (DAILY ARRANGEMENT WILL DEPEND ON WEATHER CONDITIONS)

31.08 - Afternoon: Arrival and ice-breaker **@ Stelvio National Park Visitor Centre**
01.09 - Whole day: Introductory field excursion led by Volkmar Mair (Geological Office, Bolzano)
02.09 - Whole day: RGIK inventorying: Theory & hands on geomorphological mapping/characterization
03.09 - Morning: Hands on DInSAR kinematic characterization of rock glaciers
- Afternoon: Introduction to UAV-based Structure from Motion (SfM) and ERT surveying
04.09 - Whole day of fieldwork: UAV-GNSS and ERT surveys, and ground truthing (part 1)
- Evening: Extracting Rock Glacier Velocity time series from DInSAR information (Philip Bernhard, Gamma RS)
05.09 - Morning: Geomorphological ground truthing (part 2)
- Afternoon: ERT post processing and outputs
06.09 - Morning: UAV SfM post processing and outputs
- Afternoon: RGIK inventory consolidation based on fieldwork insights and wrap up
07.09 - Morning: Departure

TARGET AUDIENCE

PhD students and early-career researchers working on permafrost or related topics.

- ~50 applications
- Participants list close to be finalised

Open discussion

- What PermaCOST activities (Meetings, Workshops, Training Schools, etc.) would you like to participate to/organise next year(s)?
- Towards a permafrost European Network?
- How to engage stakeholders?
- Communication?
- Needs, wishes, remarks?

Joins us tonight for dinner!

Permafrost Beer and Burger (organized by EGU Session CR4.2 - Mountain permafrost: Advances in methods, process understanding and impact of climate change)

Weinschenke

Tonight at 19:30

Franzensgasse 11, 1050 Vienna



Food and other drinks will be at your own expense.

Please sign up in advance, thanks!

Link to Community Survey: **https://permacost.eu/wg1/**

This presentation is based upon work from COST Action PermaCOST, CA24157, supported by COST (European Cooperation in Science and Technology).

COST (European Cooperation in Science and Technology, www.cost.eu) is a funding agency for research and innovation networks. Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers. This boosts their research, career and innovation.

What is COST?
www.cost.eu

What is PermaCOST?
https://permacost.eu

How to join PermaCOST?
www.cost.eu/actions/CA24157

PermaCOST

EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

Funded by the European Union