

Swiss Polar Institute Flagship Initiatives Call for Proposals 2025

Deadline pre-proposals: 30 April 2025

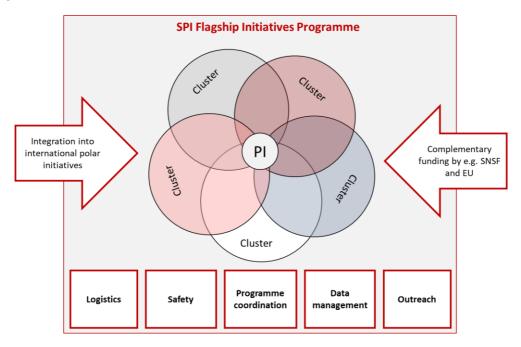
Deadline full proposal: 8 October 2025

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1 Summary and Aim

SPI Flagship Initiatives are multi-annual programmes combining science and technology projects from different disciplines and different groups / institutions in Switzerland around a polar or remote high-altitude focus region. The funding and in-kind support target data acquisition during field campaigns (logistics, safety, etc.) and from e.g. remote sensing resources, data management, programme coordination, and outreach, thus providing temporary infrastructure for a Swiss-led polar or remote high-altitude research programme.



The SPI Flagship Initiatives funding instrument aims to:

- Enable innovative, high-quality, Swiss-coordinated research programmes that require multiannual funding and support for field work in polar or remote high-altitude regions;
- Generate synergies (science, logistics, data) between Swiss groups of different disciplines;
- Foster multi-disciplinary research (where each 'research cluster' represents one thematic unit);
- Enable links with international initiatives and other national programmes;
- Fund data acquisition, field access and other enabling measures, complementing project funding by e.g. SNSF or EU;
- Coordinate logistics and optimise resources in order to limit environmental footprint of fieldwork in remote areas;
- Enable high common standards of data management, open science, safety, and public outreach.

2 Eligibility

2.1 Swiss researchers

All established scientists, affiliated to a Swiss public research institution, with an interest in polar or remote high-altitude regions are invited to contribute thematically to proposals. Multi-disciplinary collaboration is a central element of SPI Flagship Initiatives. Researchers from all fields are encouraged to participate in proposals, including from fields considered as "non-typical" for polar sciences and fields which do not themselves require fieldwork but are essential in reaching the overall aim of the proposed research.

SPI Flagship Initiatives should not be approached as single research projects, but as programmes bringing together and coordinating different groups and research questions with a similar regional focus. Therefore, an inclusive approach by the PI of the overall programme is fundamental.

In order to ensure a maximal capacity towards the realisation of the proposed programmes, PIs of ongoing SPI Flagship Initiatives programmes (i.e., FLAG-2021 call) are not eligible to submit proposals for this call. They can, however, participate as Cluster PIs and thus contribute thematically to proposals from other PIs.

2.2 International collaboration

International collaboration is fundamental to polar research and encouraged within the SPI Flagship Initiatives. Collaboration between SPI Flagship Initiatives and established or emerging international programmes and international research infrastructure operators are encouraged. However, an overall balance in which the primary beneficiaries of SPI Flagship Initiative funding are Swiss-based scientists must be maintained. Therefore, it is expected that all research clusters are Swiss-led and direct SPI Flagship Initiatives funding (e.g. transport to field sites) is prioritised for Swiss-based scientists. However, international collaborators who pay for their own travel to and from the field site of SPI Flagship Initiatives are part of the team and can benefit from logistical and safety infrastructure provided on site (e.g. local guides and transport, field camps, etc.). In particular, participation of local scientific collaborators is encouraged.

3 Duration and geographic focus

For the 2025 call for SPI Flagship Initiatives, a longer time-horizon of the overall programmes is envisioned (i.e. compared to 4 years in the 2021 call for proposals), in order to optimize co-funding opportunities and international collaboration, as well as to allow for extended planning and ramp-up / ramp-down periods. However, shorter programmes are equally eligible. Selected programmes should start in 2026 and must end by 2032, at the latest (i.e. all field work completed, grant instalments paid, financial reports received and approved). The maximum duration of a SPI Flagship Initiative is therefore 7 years, during which up to 4 major field seasons can be completed. The number of field seasons required can vary according to the scientific plan, but field work and data collection must be the priority for the use of the funding requested within the SPI flagship initiative (see section 5.1).

SPI Flagship Initiatives are expected to be organised around a strong regional focus in order to maximise scientific synergies and optimise logistics as well as international collaboration. However, comparative studies targeting different field sites over the course of a programme are also possible. The call for proposals is open to research in any polar or remote high-altitude region.

Acknowledging the high costs associated with research programmes targeting Antarctic regions, the funding cap for SPI Flagship Initiatives proposals in the 2025 call is increased relative to programmes targeting other regions.

4 Sustainability

The SPI Flagship Initiatives enable large scale field campaigns which typically generate a sizable environmental footprint. In particular, the CO₂ emissions from fieldwork logistics in polar and remote high-altitude should not be neglected and cannot simply be offset. Beyond its established efforts to quantify those emissions, starting with the 2025 call for SPI Flagship Initiatives, the SPI will encourage applicants to proactively seek solutions to reduce the carbon footprint of the proposed programmes.

Efforts towards smart logistics for maximising data acquisition per expedition participant, low carbon footprint transportation, integration of autonomous and remote sensing technologies, and data access and sharing through collaborative models can all qualify as measures to reduce the negative environmental impact of polar and remote high-altitude fieldwork. Further, research clusters with a focus on the analysis of a programmes environmental impact or the development of mitigation measures could be envisioned.

Applicants will have to provide a carbon budget estimate according to a template form (https://doi.org/10.5281/zenodo.13960431). While the absolute CO_2 footprint of a flagship proposal is not an evaluation criterion (as different flagship have *per se* different energy demands), the effort by the applicants to reduce it, will be taken into consideration. Accepted programmes will be required to report on their environmental impact along with the progress of their research and budget plans. Such reporting will be implemented with a view to minimise the workload for the scientists.

5 Budget structure and SPI in-kind support

During the 2025 call for proposals, up to two SPI Flagship Initiatives are expected to be funded with an overall budget of 3'500'000 CHF. Applicants can request a maximum funding of CHF 2'000'000 CHF for a Flagship Initiative in Antarctica/Southern Ocean and a maximum funding of CHF 1'500'000 for a Flagship Initiative located outside of the Antarctic region. In addition to the funding received directly through the grant, the programmes will benefit from in-kind support by SPI.

5.1 Eligible costs

The SPI Flagship Initiatives funding instrument was designed to enable multi-year field access to polar or remote high-altitude field sites for Swiss-based scientists working on diverse research topics. The majority of funding should therefore go towards the logistics aspects of data acquisition, such as access to the field sites, transport of personnel and equipment, local guides and field support, tasking specific satellite imagery, and safety aspects specific to the particular field work.

In order to maximize the success of a multi-disciplinary, multi-annual SPI Flagship Initiative, the second funding emphasis is given to programme coordination. The budget item 'programme coordination' should

be used to provide a partial salary for a dedicated programme coordinator (see also section 6.2), and to fund regular meetings.

The applicant is expected to use approximately 2 to 5% of their overall budget on outreach activities, both in Switzerland and in the region of their field work (if applicable). Costs for scientific outreach (e.g. participation in conferences) can be covered by this budget item, however the majority of outreach funding should go towards public outreach work.

Given the multi-annual nature of SPI Flagship Initiatives and the many unpredictable aspects of field work in remote areas, the applicant's budget must contain a 5% Opportunity fund for unexpected developments during the programme. The use of this funding must be approved by each programme's Steering committee (see section 6.4).

Costs for scientific equipment, computing resources, or sample analysis is not anticipated to be part of the applicants' budget but can be included if the applicant can provide clear justification.

Measures towards reduction of the negative environmental impact of fieldwork in polar and remote highaltitude regions are eligible for funding. Those include, but are not limited to, sharing of infrastructure and data, technological development and in situ implementation, remote sensing and autonomous data acquisition approaches. Carbon offsetting can only be used to compensate for residual emissions, which cannot be avoided. Such inevitable costs can be considered eligible, provided that the researcher's home institution is not already covering for them.

5.2 Indicative budgetary structure

dgetary structure for SPI Flagship Initiatives		
Logistics (access, transport, data acquisition, health and safety courses, guides, field support, etc.)	60-80% of the overall costs	
Programme coordination (meetings, partial salary for programme coordinator, etc.)	10-30% of the overall costs	
Outreach (public and scientific)	2-5% of the overall costs	
Opportunity fund	5% of the overall costs	
Analysis, computing time, data management, equipment	Can be included with clear justification	

5.3 Non-eligible costs and complementary funding

Non-eligible costs of SPI Flagship Initiative funding include any salaries (apart from the partial salary for a programme coordinator), and generally the costs for sample analysis and purchase of scientific equipment. The scientific work performed within a SPI Flagship Initiative thus relies on complementary project funding from, for example, SNSF and EU, or from third-parties, such as private foundations or funds from own research institutions.

5.4 Additional support and services

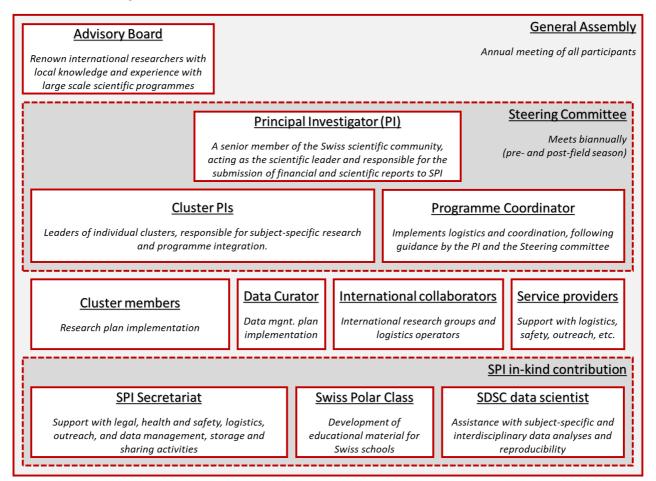
The SPI secretariat supports the SPI Flagship Initiatives throughout their lifetime. Personnel and a dedicated budget are available to provide support towards aspects of programme coordination and integration, legal services, logistics, health and safety, data management, storage and sharing, open science approaches, outreach and visibility, etc. (see section 6.8).

In collaboration with the SPI educational programme Swiss Polar Class (https://polar-class.ch/), each Flagship Initiative will be provided in-kind with support for the development of a module on the Swiss Polar Class website (see section 2).

Furthermore, through a collaboration of SPI and the Swiss Data Science Centre (SDSC), each Flagship Initiative could benefit from dedicated data science support. Should the SDSC vouch for a given programme's potential, a data scientist based at the SDSC (EPFL or ETH Zurich) would contribute to the interdisciplinary data integration within SPI Flagship Initiatives (see section 6.10) by exploiting or developing state-of-the-art data analysis, data science, and machine learning approaches.

6 Governance and roles definition

The multi-annual and multi-disciplinary nature of SPI Flagship Initiatives necessitates robust coordination and a well-defined governance structure, outlined below.



6.1 Principal Investigator (PI)

The PI is the scientific director of the programme. They are the lead applicant of the proposal and, together with the Steering Committee (see section 6.4), responsible for making decisions throughout the programme's duration. The PI leads the coordination and integration of the programme. Acknowledging that such a role is a big commitment, the programme coordination budget should include a partial salary for a programme coordinator working alongside the PI (see section 6.2). It is expected that the Programme Coordinator is based within the PI's research group where their position would ideally be co-financed by institutional or third-party matching funds. Further support will be provided in-kind by the SPI Secretariat (see section 6.8).

While the PI likely leads one of the individual research clusters, it is their responsibility to ensure equal opportunities for all research clusters and to encourage close collaboration.

The PI is responsible for the timely submission of financial and scientific reports, which are prerequisites

for the payment of subsequent grant instalments.

The PI of an SPI Flagship Initiative is expected to present their programme at one meeting of the SPI Science and Technology Advisory Board (STAB) and Board of Directors.

6.2 Programme Coordinator

Acknowledging that successful implementation of a multi-disciplinary programme involves a lot of organizational work, the applicants' budget should cover a partial salary for a Programme Coordinator. The Programme Coordinator should, for example, arrange meetings and workshops at the appropriate times with the appropriate participants, work closely with the SPI Secretariat, the SDSC, and all cluster leaders to ensure thorough data management, programme integration, efficient outreach, etc. The Programme Coordinator would ideally be involved in the conception and writing phases of the Flagship Initiatives proposal and in applications for complementary funding sources.

6.3 Cluster PI (one per research cluster)

Each research cluster has its own leader, who is a Cluster PI within the SPI Flagship Initiative. The Cluster PIs are part of the Steering Committee and thus involved in the overarching guidance and implementation of the programme. They will be responsible for the successful implementation of their cluster's research and should encourage multi-disciplinary approaches across research clusters. They need to ensure timely completion of their research cluster's contribution to financial and scientific reports and provide risk assessments for their cluster's field campaigns.

6.4 Steering Committee

The Steering Committee consists of the PI, the Cluster PIs, and the Programme Coordinator as a minimum requirement. Other programme participants can be put forward as members of the Steering Committee if their contribution to the development of the programme is considered fundamental (e.g., logistics expert, guide, data scientist, etc.). The Steering Committee should meet twice a year, likely pre- and post-field season, to discuss progress and challenges of the programme. Decisions are taken by vote as, for example, the approval for the use of the Opportunity fund. The SPI Executive Director and members of the SPI Secretariat supporting the Flagship Initiatives participate in Steering Committee meeting in order to assist with all aspects of programme implementation. Their participation is as observers without voting rights.

6.5 Advisory Board

An Advisory Board is strongly recommended in order to provide guidance and support to the Steering committee. It should be composed of international senior researchers with local knowledge, experience with large scale scientific programmes, or other relevant expertise. They should be invited to the Annual Assemblies of the programme.

6.6 Data Curator

Programmes should identify at a very early stage a dedicated Data Curator who accompanies the transition from data collection within individual clusters to open data availability within publicly accessible (inter)national data repositories. A comprehensive data management plan (DMP, to be submitted along with the full proposal of the SPI Flagship Initiative) should keep track of the progress thereof as a "living

document" throughout the duration of each programme. The Data Curator will work closely with the SDSC and SPI Secretariat to ensure a high level of data management and open science approaches.

6.7 Programme members

Each programme member should participate in relevant workshops, meetings, and safety trainings. They are encouraged to actively develop and participate in public outreach activities. All programme members should attend in the Annual Assembly.

6.8 SPI Secretariat

The SPI Secretariat organises the proposal and evaluation process and is responsible for grant agreements and finances. The granted SPI Flagship Initiative will have to provide to the SPI Secretariat regular reports on finances and research progress, including therein updates of data management plan and environmental impact assessment. The SPI Secretariat can seek advice from its Science and Technology Advisory Board (STAB) for scientific and financial report evaluations.

The SPI Secretariat supports the PI and Programme Coordinator throughout the entire lifecycle of the Flagship Initiative in terms of logistics, programme coordination and integration, and outreach. Their exact tasks depend upon the nature of each Flagship Initiative and will be defined during the early phase of each selected programme. For example, the SPI Secretariat can assist with

- The acquisition of necessary permits and the planning and implementation of field logistics;
- The development of the programme's visual identity;
- The set-up and maintenance of the programme's webpage (e.g., https://pamir-project.ch/);
- The set-up of an internal Wiki page for efficient sharing of information within the programme consortium;
- The organisation of an official launch event, annual assemblies, Steering Committee meetings, and other meetings or workshops;
- Organisation of programme specific field health and safety trainings and field pharmacies;
- Realization of public outreach projects;
- Together with the SDSC and the data contacts of each research cluster, develop and assist with the implementation of a data management plan.

6.9 Swiss Polar Class

Flagship Initiatives programmes will benefit from support of the SPI education programme Swiss Polar Class (https://polar-class.ch/). The in-kind support available to each Flagship Initiative is the development of programme-specific education modules freely available for Swiss and international pupils aged 8-12 years. All programme members will be asked to provide content in the form of science interviews, text and visual materials.

Additional projects in collaboration with SPC are possible but need to be included in the Flagship Initiatives outreach budget.

6.10 Swiss Data Science Center (SDSC)

A senior data scientist at SDSC (http://datascience.ch) can accompany the Flagship Initiatives programmes in their subject-specific and interdisciplinary research. Interested applicants should indicate in their preproposal (section 8.1) the specific aspects of data science support they expect and together with SDSC develop concrete project ideas during the feedback sessions between the pre-and full-proposal stages. Such support includes, but is not limited to:

- The use of machine learning approaches to leverage remote sensing, geolocated and in situ data;
- Retrieval of various remote sensing and geospatial data products and processing thereof;
- Assistance in the implementation codes that require High-Performance Compute (subject to provision of compute resources);
- Support in delineating best data analysis and modelling approaches;
- Additional support regarding data science practices and tools, in particular to foster reproducibility and open science (see section 7).

7 Data management and open science

Open science approaches and thorough data management are fundamental to SPI Flagship Initiatives. Rather than merely providing an open science policy and data management guidelines, the SPI Secretariat and SDSC will provide close support to the SPI Flagship Initiatives. During the definition process of each SPI Flagship Initiative, programme-specific data needs will be discussed. These include but are not limited to:

- Centralised data storage to facilitate collaboration among the research clusters;
- Support needs of each research cluster to assist with good data management practice;
- Assistance in identifying computational resource requirements;
- Assistance in identifying best data and software (if any) distribution channels supporting traceability and reproducibility.

Full reproducibility of research is key to open science. With this in mind, the expectation is that all data, metadata, code and publications will be made openly and freely available with a CCO or CC BY 4.0 license (or equivalent for software) within a defined period of time and following the FAIR and CARE principles for polar data management. Such commitment should be documented in a detailed data management plan (DMP), to be submitted along with the full proposal of the SPI Flagship Initiative. The DMP may also outline how observations and work in different clusters link to Earth and polar modelling efforts such as: use of data to improve/evaluate models, contributions of data to international/national modelling efforts, and/or targeted observations for improved polar descriptions within Climate/Earth System Models. Programmes are further encouraged to develop their own open science policy to be adhered to by all participants.

8 Two-stage proposal process and evaluation

SPI Flagship Initiatives will be tailored to the specific research needs of the Swiss polar science community and the process of their definition is designed to be bottom-up, driven by scientists and supported by the SPI. In order to enable such a process and in parallel provide a framework that allows for continuous

exchange (in terms of feasibility, scope, etc.), the call for proposals consists of several stages.

8.1 Call for pre-proposals

The call for pre-proposals is open from 3 February 2025 until 30 April 2025. The application should be submitted through the <u>SPI online application platform</u>. Applications sent by email will not be accepted. Incomplete proposals will be considered ineligible. The pre-proposal consists of a description of the overall programme, a short description of the scientific work proposed within each research cluster, as well as a brief section on data management and an optional request for data science support from SDSC (see section 6.10).

Only applicants (PIs) submitting a pre-proposal will be permitted to submit a full proposal. Other aspects of a pre-proposal (e.g., number of research clusters, Cluster PIs, etc.) can change between the pre-proposal and proposal stage.

8.2 Information events

Shortly after the opening of the call for pre-proposals, the SPI will hold 1-hour online events, during which detailed information will be provided and potential applicants will be able to ask questions. The information events will be held online on 6 and 11 February 2025.

If you would like to participate in one of these information events, please register on the SPI event page.

At any other time, specific questions and inquiries can be directed to grants@swisspolar.ch.

8.3 Assessment of pre-proposals and recommendations

A panel of international experts will read the pre-proposals and decide if the applicant is invited to submit a full proposal. For those applicants invited to submit a full proposal, the panel could recommend, among other things:

- 1) The possible addition of research clusters / topics to widen the scientific scope of the proposed program or synergies with other proposals (e.g. possible merging of proposals);
- 2) International linkages to be considered;
- 3) Recommendations towards the inclusion of indigenous and local peoples (if applicable), gender equality and diversity;
- 4) Recommendations towards logistical and environmental aspects;
- 5) Recommendations towards data management and open science strategy.

Expert recommendations will be provided to applicants in June 2025. All applicants will be invited to a one-to-one feedback session with the SPI, to discuss the recommendations and ask any unresolved questions regarding the preparation of the full proposal. Further, feedback from and exchange with SDSC can be provided for the development of data management and data science aspects of the proposal.

If several pre-proposals targeting the same or similar region are submitted, or if merging of two preproposals was recommended by the evaluation panel, region-specific workshops can be facilitated by the SPI Secretariat.

8.4 Full proposal

Full proposals will be due 8 October 2025 and reviewed by the same panel of experts who reviewed and provided feedback on the pre-proposal. The full proposal should include a short response letter detailing how comments and suggestions on the pre-proposal were addressed in the full proposal. The application should be submitted through the <u>SPI online application platform</u>. Applications sent by email will not be accepted. Incomplete proposals will be considered ineligible.

Evaluation criteria for the full proposals are listed below, where criteria are weighed in the order listed and criteria 1-4 weight stronger than criteria 5-8:

- 1) Originality and scientific quality;
- 2) Impact on the international and national scientific landscape;
- 3) Quality and feasibility of proposed organisation and management of the campaign (logistics, safety, experience of participants, maximisation of added value achievable in a campaign with multiple field seasons);
- 4) Synergistic nature of the proposal (potential for innovative multi- to interdisciplinary science output, complementarity of proposed research consortium);
- 5) Efforts made to maximise science whilst minimising its environmental footprint;
- 6) Quality of proposed data management and open science approaches;
- 7) Quality and innovative aspects of outreach components;
- 8) Inclusion and involvement of indigenous and local peoples (where applicable), gender balance, and diversity.

While the request for data science support from SDSC is not a selection criterion per se, SDSC will only engage with those of the selected SPI Flagship Initiatives programmes, which show sufficient potential and commitment to collaborate with them.

8.5 Announcement of selected proposals, grants and start of the programmes

Results of the review process will be provided to applicants in December 2025 and the official announcement of the SPI Flagship Initiatives will be in January 2026. The PI will sign a grant agreement with SPI and it is expected that a consortium agreement is signed with all Cluster PIs upon the start of the programme. Dates for the official start and end date of each SPI Flagship Initiative will be defined in the grant agreement.

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