

Helmholtz Water Safety and Security Initiative

1st Call for Applications – Solution Labs

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The campaign at a glance

Drought and heat stress, floods and heavy rainfall: Climate change is already having a significant impact on the water cycle. Both sudden water surplus and prolonged periods of scarcity, sometimes combined with heat waves, become more severe and less predictable. In countries of the Global South, it is already evident that this uncertain supply can hinder social and economic development. However, in the future, industrialized nations, like Germany, will also have to adjust to fluctuating water availability — and thus leading to competition between the needs of people and nature, industry, and agriculture: Water is the key resource of the 21st century.

The Helmholtz Association is tackling this pressing challenge with the launch of the Helmholtz Water Safety and Security Campaign. The breadth of Helmholtz expertise on the subject of water is unique in the German scientific landscape, as our centres cover the entire water cycle with their research focuses — from the global terrestrial water cycle to the molecular level. As part of a research campaign, the Helmholtz Initiative and Networking Fund (INF) will provide up to 9 million euros from 2026 to 2028 for three joint research projects by the Helmholtz Centres and their partners that are dedicated to shaping novel interdisciplinary research activities in the field of water safety and security for people and the environment.

The following portfolio of topics was developed to address the campaign theme of '*water safety and security in the 21st century*'. This portfolio provides the thematic framework, consisting of three overarching water-related topics and three crosscutting topics that have particular potential for scientific innovation and for transfer to application:

Portfolio of themes

- Terrestrial water cycles (δ natural ./ anthropogenic)
- Urban BlueGreenRed water systems (water, vegetation, energy)
- Water quality and a pollutant-free water cycle

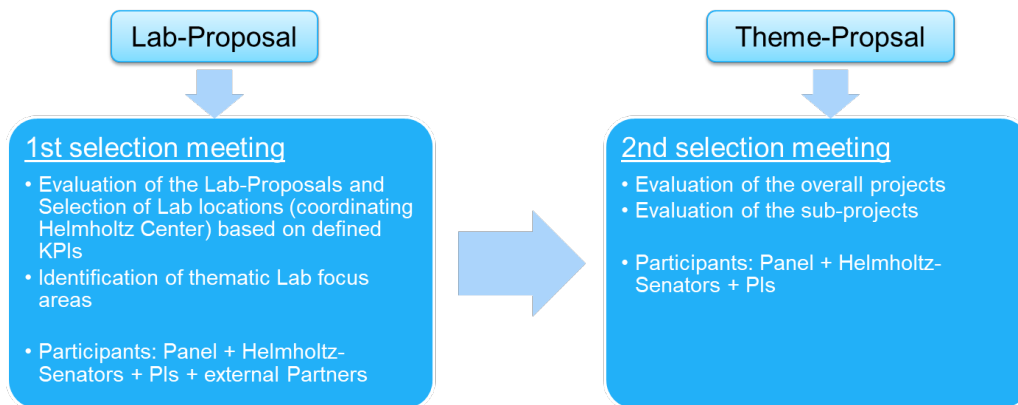
Crosscutting topics

- Monitoring, remote sensing and sensor technology
- Digitalization, information technologies, data analysis
- Synthesis, knowledge transfer and implementation

The campaign structure envisions the establishment of three "Solution Labs". Each Solution Lab will act as a hub, coordinating a comprehensive, cross-centre, and cross-domain thematic project in at least one of the three main thematic areas as well as the crosscutting topics. Solution Labs are interdisciplinary and transdisciplinary platforms designed to develop and test innovative solutions for complex challenges, such as water cycle management in model regions. They aim to foster knowledge exchange and transfer among researchers, policymakers, industry, and civil society. These labs consolidate expertise and infrastructure across research domains, promote collaboration with practical partners, and operate with a modular, long-term approach, ensuring both physical infrastructure and networked engagement.

The selection of locations for the three Solution Labs and the subsequent selection of cross-centre thematic projects will follow a two-stage process with two separate calls (1st call for Solution Lab Sites / 2nd call for theme projects). In both stages, a “transfer by design” approach needs to be applied, which requires the earliest possible integration of the user perspective, and market or demand requirements into the research and development process. The approach is characterized by application-oriented methods and realistic implementation plans, as well as the involvement of stakeholders in the relevant phases of research, development and implementation.

Structure of the campaign and the application process



The first stage / the 1st call for applications (also Lab-Proposal) includes funding options for the establishment of three physical Solution Labs, each addressing one of the following themes: Terrestrial Water Cycles, Urban Water Systems, or Water Quality. With the location of the Solution Labs, successful applicants receive a funded position (1 FTE / ~ 100T€ p.a.) for coordination. The Solution Labs are designed to work on at least one of the three campaign themes (see [Portfolio of Themes](#)) and serve as hubs for the thematic projects, which are to be selected in the second stage of the campaign. Thus, together with their local conditions, the overarching research focus of the Solution Labs form the basis for the proposal for thematic projects in the second stage of the application process / 2nd call. Further information on the possible areas of focus can be found [here](#) or on the Helmholtz website (see [E. Contact & Helmholtz Access](#)).

The second stage / 2nd call for applications (also Theme-Proposal) provides for the funding of one overall thematic project per location, including sub-projects. Each overall project should be based on the synergistic combination of several areas of expertise from different research areas. At the same time, a suitable transfer strategy with external partners / stakeholders is to be developed from the very beginning („Transfer-by-Design“). To ensure that additional impact and synergies are achieved during the funding period of the campaign, the coordination centres (selected in the first stage) are also encouraged to exchange information regularly between all three solution labs. Specific information for applicants of the thematic projects will follow in the second call, which will be published in April 2025.

1st Call for Solution Labs

The objective of this call is to provide support for the establishment of long-term transdisciplinary and application-oriented laboratories, colloquially referred to as "solution labs". We invite all Helmholtz researchers to participate in this competitive call with their specific existing (research) infrastructures, data sets, domain-oriented application questions, experience in knowledge transfer and their external partners. Successful applications will demonstrate that transfer-oriented solution labs make a tangible and impactful contribution to overcoming the challenges of the campaign and ensuring water safety and security in the 21st century.

A. Prerequisites for funding

i. **Location: Strategic fit of the solution lab site**

- Physically located at a specific site
- Capitalization and joint utilization of the centres' excellent scientific and existing infrastructures (research facilities, "Reallabore", Data facilities etc.)
- Cross-centre and cross-domain approach of multiple Helmholtz Centres from different research fields (minimum requirement 3 Centres and 2 Research Fields)
- potential for real-world impact and innovation with a transdisciplinary approach
- maintaining existing and developing new strategic partnerships at local, regional, national and/or international level with the objective to support concrete, practicable solution

ii. **Research Focus: Thematic fit of the solution lab**

- scientific design and research infrastructure of the Solution Lab are particularly suitable for tackling one of the three overarching campaign topics (Terrestrial Water Cycles, Urban Water Systems, or Water Quality), accompanied by at least one of the cross-cutting topics (see above "[Campaign at a glance](#)")
- scientific excellence and an inter- and transdisciplinary approach across several research fields
- enhancing cross-cutting research with a focus on developing application-oriented methods and technologies
- novel and innovative ideas that go beyond existing research activities at Helmholtz and complement them, with a clear added value to existing ones

iii. Overall selection criteria

- **Interdisciplinary and transdisciplinary:** The projects, which are integrated in modules, must make it clear how interdisciplinary and transdisciplinary cooperation is going to be assured (at least two research fields and three research centres + external partners / stakeholders)
- **Feasibility and compliance** with the goals of the Helmholtz Water Initiative: The projects must match the main research topics as outlined in the Whitepaper
- Demonstrate **unconventional and innovative approaches with high potential impact** within three years
- **Application and implementation:** Solution Labs are explicitly required to produce research results that support practical applications with a long-term perspective beyond the funding period. Priority is therefore given to projects that have high practical relevance and hold potential to support the regulation of water-related challenges
- **Personnel and infrastructure:** Adequate equipment and personnel to carry out the project must be demonstrated.

B. Recipients, type and scope of the funding

The Initiative and Networking Fund provides funds for solution labs that meet the following criteria:

- The “*Water Safety and Security campaign*” will finance at least three projects, with each defined topic having its own solution lab
- The campaign provides a total budget of 9 million euros over a period of three years (2026-2028).
- Each Solution Lab site will be allocated a funded position (1 FTE / ~100T€ p.a.) for coordination. The remaining budgetary resources will be allocated to the theme projects (2nd call).
- Funding of a Solution Lab as a standalone initiative, without an associated thematic project, is not feasible. Applications for thematic projects are to be submitted after the 2nd call for applications.
- It is assumed that the centres will ensure sufficient sustainability of the projects from basic funding once funding has expired.

Helmholtz Centres and German universities (as partners of the Centres) are eligible for funding. The participating Helmholtz Centres and, if applicable, other partners involved are expected to provide co-financing, the total of which should at least correspond to the amount of 25 % funding provided by the Initiative and Networking Fund over the entire project period. The proposal must a) specify the co-financing as allocated to the project and involved partners and b) as distributed over the respective project years (a corresponding template will be provided together with the invitation to the full proposal submission). Project funding is provided as fixed-amount financing. Personnel costs (expenditures), material costs (expenditures), and investments according to the NKBF 2017/Version November 2019 (for the funded Helmholtz Centres) and the ANBestP (for partners' external to the Helmholtz Association) are eligible for funding.

Project partnerships

The solution labs may unite additional partners from Helmholtz Centres and/or university institutions (fundable) if they contribute substantially to the implementation of the project. Similarly, associated partners (who are not eligible for funding) should also be included in order to strengthen the proposed solution lab:

- government branches or NGOs,
- Industrial partners at different corporate levels (start-ups, SMEs, large corporations);
- University and non-university institutions

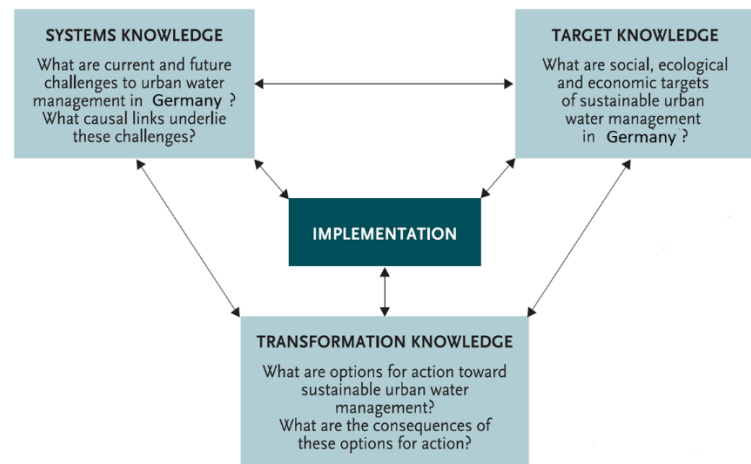
New collaborations within and outside the Helmholtz Association should pursue the goal of realizing high-quality complementary research and increasing the visibility of Helmholtz research in the field of water research. At the first proposal stage, a qualified letter of intent is to be submitted for examination.

C. Transfer by design (Transfer concept)

Knowledge transfer and solution-oriented dialogue should be implemented to all initiatives from the very beginning. Therefore, relevant external partners / stakeholders must be involved in the design and implementation of the solution labs and of the research programs with specific activities. Formats of active exchange and co-design with the external partners / stakeholders must be outlined in the project proposal. Concrete formats of collaboration and exchange, as well as already established collaborative formats should be described. Ideally, the technology transfer offices of the research centres should be involved in the process of formation of the Solution Labs. We encourage all applicants to develop concrete recommendations for action with practicable measures within and after the funding period.

The newly established Solution labs aim to foster the exchange of scientists with stakeholders / external partners. According to concepts of Hoffmann 2016 (NFP-61, Switzerland), the transdisciplinary knowledge transfer strives to implement science-based advisory and formulation of practical solutions across three pillars:

- **systems knowledge** about current and future challenges of urban water management and the causal links that underlie these challenges
- **target knowledge** about social, ecological, and economic targets of sustainable urban water management
- **transformation knowledge** about options for action toward sustainable urban water management and their consequences with respect to target achievement



D. Procedure

i. Details of the procedure



The overall projects of the campaign will be selected in a two-step process consisting of a) a Lab-Proposal stage, and b) a Theme -Proposal stage, including two separate calls: 1st call for Solution Labs / 2nd call for theme projects. The contact information for the Solution Lab coordinators, along with the areas of focus for each, can be found on the Helmholtz website after the first selection stage has been completed.

a) Lab-Proposal stage

The aim of this phase is to get an overview of potentially most impactful Lab sites and identify those with the most promising challenges and visions. All applications for a potential loca-

tion must be submitted as a Lab-Proposal in order to be considered as a location for a Solution-Lab. The **Lab-Proposal** must include at least the following information (templates in the appendix – see [Contact & Helmholtz Access](#)):

- Lab-Proposal according to the provided template
- Presentations slides
- Potential external partners, who should participate in the selection meeting
- Standardized résumés of the principal investigators (PIs) of ½ page each according to the template (please indicate up to 3 PIs that will actively participate in the remote Q&A); please mind the gender ratio of female researchers on your project
- Informal letter of support from the management of the co-financing institutions and LOI from the national/regional strategic partners (as annex)

In the **Lab-Proposal selection meeting** we ask the project teams to give a presentation of the lab proposal to the selection panel (in Berlin or via video conference, if applicable), followed by a short Q&A session. The Lab-Proposal with the presentation/Q&A will form the base of the site selection decision by the panel.

b) Theme-Proposal stage

After the site selection, the head office will publish the 2nd call for applications (in April 2025), including the results of the first selection meeting and the requirements of the Theme-Proposal submission (templates, criteria, etc.).

ii. Dates & deadlines

Campaigning Phase	
12/2024	Publication of 1 st call for applications (Lab-Proposal)
04/2025	Publication of 2 nd call for applications (Theme-Proposal)
Lab Proposal Stage <i>Preparation of lab proposals</i>	
03/03/2025	Submission deadline for lab proposals
31/03/2025	lab proposal selection meeting (1-day meeting)
Theme Proposal Stage <i>Preparation of theme proposals</i>	
04/2025	Publication of Solution Lab sites
15/07/2025	Submission deadline for theme proposals
01/09/2025	Theme proposal assessment – written peer reviews
7/10/2025	Theme proposal selection meeting (1-day-meeting)
01/2026 – 12/2028	Funding period

E. Contact & Helmholtz Access

The head office will provide all templates and supporting documents (Templates, Water Safety and Security briefing etc.) on the Helmholtz website:

<https://www.helmholtz.de/en/research/current-calls-for-applications/>

For further information, please contact Nicolas Tellner by email (water@helmholtz.de). Additionally, an online Q&A session (date, time and zoom details will be announced on the Helmholtz Water Safety and Security website) will be scheduled to address formal questions about this call.