Vietnam-Germany Joint Research Call

Bilateral MOST-BMBF pilot call for joint research proposals on:
Sustainable Cities and Urban Regions – Risk Management at Extreme Natural Hazards in Vietnam and Germany

Call publication: 15.09.2021; proposal submission deadline: 30.11.2021
Joint project start: 02.01.2023; funding period: Maximum 3 years

Joint funding amount: BMBF: Max. 350.000 € per project, MOST: 200.000-300.000 € per project
Joint funding types: Funding of staff, travelling, workshops, equipment and material.

Background: Vietnam and Germany are both exposed to multiple natural hazards, which are exacerbated by climate change. In Vietnam, natural hazards of floods, typhoons, landslides, and droughts are most prominent. Climate change is furthermore an existing threat to the goal of sustainable development and poverty reduction in Vietnam. Losses and damages will continue to increase, which require urgent action to promptly mitigate damages and strengthen climate change risk management. Accordingly, the duties and responsibilities of the Ministry of Science and Technology (MOST) strengthen research on forecasting and warning of multiple natural disasters (floods, droughts, saltwater intrusion, sea level rise, subsidence, landslide, coastal land loss) at the same time, actively researching the scientific basis to propose solutions to prevent and minimize damages.

Although Germany does not belong to the most hazard-prone regions of the world, extreme temperatures, floods, and storms have caused considerable human and economic losses. Risk due to natural hazards is expected to increase in several regions of Germany if efficient risk management is not implemented.

In both countries, extreme natural hazards have been causing significant losses to people, economy and cultural heritage, especially in densely populated areas of cities and urban areas. Although both countries have invested strongly in disaster warning mechanisms and risk assessments, still many challenges remain for the sustainable development of cities and urban regions. This refers specifically to manage risks of extreme and multiple natural hazards in the context of climate change and dynamic city developments.

Goal of the call: This call invites proposals for Vietnamese-German joint projects of applied and transdisciplinary research in the area of sustainable cities and urban regions on risk management of extreme natural hazards in Vietnam and Germany. Management of risks of one or several natural hazards includes prediction of the occurrence, monitoring, assessment of the severity of the impacts of hazards, and the development of measures to minimize their risks in cities and urban regions of both Vietnam and Germany.

Based on the complementary integration of local knowledge, experience and research infrastructures from Vietnam and Germany, sustainable cooperation structures are initiated between Vietnamese and German partners and concrete contributions to increase the resilience of Vietnamese and German cities or urban regions are proposed and demonstrated.

Thematic focus areas:
1) Flooding, 2) Extreme droughts, 3) Storm surges

Eligible applicants: Public sector research performer like universities and academies of science and technology, especially involving early-stage researchers based in Vietnam and Germany.
Associated partners: The associated partners may complement the project partners, but would not receive funding. They may involve e.g. institutions from politics, administration, planning, civil society, and economy, especially small and medium sized enterprises in Vietnam and Germany.

Priority research locations: Cities and urban regions in Vietnam - with flooding: Ho Chi Minh City, - with extreme droughts: South and central Vietnam cities and urban regions: - with storm surges: Da Nang, Hai Phong; all other cities and urban regions in Vietnam and Germany facing these hazards.

Funding requirements: Proposals are requested to capture a very high degree of practical and transdisciplinary relevance with respect to all of the following requirements:

Technological aspects:
- Development of methods to identify causes and consequences of uncertainties in risk management for addressed natural hazards and strategies in order to reduce these uncertainties or to cope with them;
- Determining the vulnerability and potential damage caused by different types of natural disasters according to climate change scenarios;
- Flexible and innovative warning and forecasting tools and methods which integrate risk management for different/multiple natural hazards at different spatial and temporal scales;
- Proposing technological and management solutions to reduce damage, prevent and develop sustainability for chosen focus research location;
- Development and modeling of strategies and scenarios on risk management of urban functions under consideration of regulative framework conditions (legal basics), socio-economic, ecological and climate change developments in cities or urban regions;
- Integration of socio-economic, climatic and ecological conditions at the scale of cities or urban regions in a database for the research region.

Transdisciplinary and sustainability aspects:
- Transdisciplinary sustainable benefit research concept by identifying and realizing mutual benefits along the value chain of all research partners, associated partners and stakeholders involved in the joint project; this requires to clarify who will be engaged at which level, with which role and will benefit at which degree; examples for mutual benefits at different levels are at:
  - Project level: exchange and improvement of knowledge and skills, gaining new perspectives on research problems and solutions, access to data, research infrastructure and institutions, training of analytical skills, innovative technology developments, career development, better understanding of local priorities, development of publications and follow-up research proposals;
  - Policy level: stimulation of the development of new research calls, policies, regulations, structural improvements such as national/international research and innovation clusters;
- Socio-economic level: adding functions to existing risk management systems and operations, opportunities for innovation, business, services, and income, risk reduction, participatory processes to engage with local stakeholders in target cities
- Ecological level: supporting nature-based solutions, protecting the environment

In a process perspective, it is important to clarify how communication within the project will be carried out, who will be engaged in certain steps, take-up which research results, develop them in which way further and/or implement them during or after the end of the project;

- Involvement of the local population, experts and implementation actors at the risk analysis and risk management (e.g. at cost-benefit analysis, nature-based solutions);
- Integration of different interests and governances in planning, policy making, implementation and monitoring of single or multi-hazard risk management strategies;
- Design of a rough project monitoring and evaluation concept with suitable and comprehensive indicators related to the proposed project.
- Establishing of network activities and structures with presently funded BMBF projects on „sustainable development of urban regions“ and CLIENT II, as well as related national ongoing research projects and/or university research, study programs as well as relevant private sector actors in the context of sustainable development of cities and urban regions in both Vietnam and Germany for mutual learning and exchange of good practices.

- Participation in and presentation at two bilateral BMBF-MOST Research Evaluation and Monitoring Symposia back-to-back to the bimannual German-Vietnamese Science Day (GVSD) in 2024 (potentially in HCMC) and the Joint Science and Technology Committee (STC) meeting no. 9 in Vietnam 2025. Costs for participation (in Vietnam or Germany) shall be included in the project proposal and project plan.

Management aspects:
- For joint proposals that will be selected, it is required that all partners will develop and sign a consortium agreement in which they specify the relationship among the partners and associated partners, in particular concerning the organisation of the work, the management of the project and the rights and obligations of the partners and associated partners concerning inter alia liability, access rights and dispute resolution (for example DESCA Horizon2020 consortium model http://www.desca-agreement.eu/fileadmin/content/Desca_2020_L2/DESCA2020_v1.2_March_2016_with_elucidations.pdf)

Targeted impact: Impacts for the cooperation between Vietnam and Germany are envisaged:

During the project’s life-cycle
- Identifying challenges related to floods/droughts/storm surges risk management in the context of rapid urban expansion and climate change impacts in Vietnam and on relevant urban conditions and impacts in Germany integrating national and international partner’s perspectives.
• **Mutual learning, exchanging, developing, complementing and applying** in-depth knowledge, innovative techniques and good practices from Vietnamese and German partners in managing risks of floods/droughts/storm surges in cities and urban areas in both Vietnam and Germany. **Mutual learning would be especially achieved by exposing Vietnamese partners to German and German partners to Vietnamese hazard challenges, risk management strategies and related national/regional socio-economic and regulatory framework conditions.**

• **Training early career researchers** to gain more experience in working in international teams researching natural hazard risk management in both Vietnam and Germany.

• **Networking with academic institutions and other relevant organisations** in both Vietnam and Germany to contribute to and develop a sustainable knowledge and innovation community in this thematic field. With this reinforcing and strengthening the cooperation between Vietnam and Germany in solving, preventing and mitigating impacts of natural disasters for sustainable cities development.

• Identify **crucial knowledge and implementation gaps and further research needs** in this research field to continue reinforcing and strengthening the cooperation between Vietnam and Germany in exchanging, sharing and applying good practices in solving, preventing and mitigating impacts of natural disasters in the context of intensive urbanization and unpredictable impacts of climate changes for sustainable cities development.

• **Societal benefit:** Demonstration of strategies for implementation of the research results in politics, society and economy of in cities urban as well as suburban areas in Germany and Vietnam; setup of indicators for transfer to other cities and urban regions; test labs, real laboratories, pilot regions or cities are to be used to test the developed risk management models and to be involved in networking structures, as much as possible.

• **Document**ation of the successful S&T collaboration related to the project’s research results by peer-reviewed **joint publications** of key involved Vietnamese and German partners in international journals.

**After the end of the project:**

• **Document**ation of the successful S&T collaboration related to the project’s research results by peer-reviewed **joint publications** of key involved Vietnamese and German partners in international journals.

• **Learning, exchanging and applying in-depth knowledge, innovative techniques and good experiences from joint project in solving and managing extreme flood/drought/storm surge risks in urban areas.** For this the close involvement of urban residents, local authorities/local governance and also higher levels of governance who engage in preparing/adapting flood/drought/storm surge risks management to sustainable cities development is important to consider **already during the lifecycle of the project.** (for Vietnam)

• **Key-transferable outcomes of case studies will be applied to other cities in Vietnam for their sustainable urban development.**

• **Apply** for further funding to intensify the research.

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