

Dear partners of the PIONEER Alliance,

The Faculty of Spatial Development and Infrastructure Systems at TH Köln (F12-TH Köln) plans to submit an application to the Erasmus+ program "Capacity Building Higher Education" (probably in the Strand 2 module) at the beginning of 2025. With regard to the Erasmus+ program, the intended target region is Asia.

In terms of content, the project is primarily concerned with the United Nations Development Goals 6, 11 and 13, while also aligning with the European Union's "Green Deal" and "Digital Transformation" (Twin Transition) initiatives.

The objective is to enhance the capacity of the partner universities to engage in transformative scientific inquiry, with a particular emphasis on the quality of university teaching. Nevertheless, research and transfer will also be addressed. In terms of content, the project is focused on the promotion of "blue-green infrastructures" and "nature-based solutions" as means of overcoming urban development challenges. The objective is to facilitate technology transfer between the project partners, encourage social and societal innovation, and establish connections with relevant stakeholders in the region. The F12-TH Cologne has already established collaborative relationships with partners in the target region, and the proposed project will seek to expand this network.

We would be most grateful if you would be willing to collaborate on this project. It is feasible to incorporate your partners from the target region into the project, should this be of interest. Such entities may include, but are not limited to, universities, as well as actors from industry, administration, and civil society.

The subsequent phase of the project will entail further development and adaptation of the project idea in collaboration with all interested parties, with the objective of ensuring that it is attractive to all participants and represents added value.

Please find attached the project draft and a brief description of the F12-TH Cologne.

Should you require further information or wish to express interest, Mr. Günther Straub (contact details below) will be pleased to assist.

Yours sincerely,

Günther Straub

Note:

- Please be advised that the call for proposals for the 2025 call is anticipated to be released in November 2024. Accordingly, our current planning is predicated on the 2024 call, and thus further adjustments may be required following its publication.
- More about Erasmus+ CBHE: <https://erasmus-plus.ec.europa.eu/programme-guide/part-b/key-action-2/capacity-building-higher-education>

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Project Exposé for a project proposal in the Erasmus+ Program of the European Commission.

Capacity building in Higher Education - Strand 2, Multi Country Project

"UrbanTransCap: Building Skills for Nature-based Transformation" (Working Title)

Capacity building for urban transformation: qualifying graduates and faculty with transformation and digitalization skills to promote, initiate, plan and implement nature-based solutions and blue-green infrastructure (Working Subtitle)

Summary

The UrbanTransCap project under the Erasmus+ Program aims to enhance urban transformation capabilities through a collaborative network of Southeast Asian, South Asian, and European higher education institutions, aligning with UN Goals 6, 11, and 13. It addresses the complex challenges posed by urban dynamics such as population growth and environmental changes through transformative scientific approaches and realigns universities' in research, teaching, and societal engagement.

Emphasizing blue-green infrastructures and nature-based solutions, the project tries to enable universities to build networks among universities, public and private sectors, and civil society. With the aim to share, provide an co-develop innovations (e.g. applied infrastructure development, funding, monitoring) to address urban development challenges

UrbanTransCap focuses on capacity building among faculty and students, encouraging interdisciplinary and applied research, digital competencies, and practice-oriented teaching to prepare graduates for transformative. It promotes international collaboration, aiming to strengthen institutional networks, enhance practice-oriented teaching, and improve digital skills across the board within the scope of nature based urban transformation.

Introduction

The UrbanTransCap project has the objective of enhancing the capabilities for urban transformation within a network of higher education institutions in Southeast Asia and/or South Asia and Europe, in alignment with the United Nations' Sustainable Development Goals 6, 11, and 13.

In the context of urban development shaped by population growth, industrialization, shifts in lifestyle and consumer behavior, and environmental and climate challenges, experts in the field are confronted with intricate or even wicket challenges that can only be addressed through a transformative scientific approach. This approach aims to actively support and shape social change processes by involving stakeholders from science and society, using multidisciplinary approaches and translating scientific findings directly into social action.

Universities, being one of the key actors in this transformation, are obliged to realign their research, teaching, and knowledge management and transfer activities. Researchers need to be capable of developing and answering research questions addressing urban challenges in collaboration with society and accompanying their implementation. University academics must further develop practice-oriented teaching to prepare students for a transformative approach. It is imperative that universities establish a collaborative framework with external stakeholders, fostering an environment that encourages participation in transformative processes. This entails the creation of an infrastructure that supports the involvement of researchers, educators, students, and both academic and non-academic stakeholders.

Against the backdrop of multifaceted challenges associated with urbanization including climate change, the development of blue-green infrastructures (BGI) and nature-based solutions (NBS) represents a pivotal step in urban sustainability transformation. Despite the existence of well-researched and recognized approaches in this field, there is a notable absence of widespread implementation, particularly in less developed countries within the global South and in emerging economies on the cusp of becoming middle-income countries.

The obstacles to progress are multifaceted, encompassing a lack of innovative approaches, knowledge management and transfer, and a dearth of knowledge about financing opportunities. Those responsible for

governance and their experts frequently lack the requisite experience and resources to conduct applied research. Furthermore, lack of or inadequate collaborative frameworks between universities, the public sector, politics, the private sector, and civil society is very common. Establishment of effective network of these actors is of paramount importance if we are to generate, apply, and transfer the necessary knowledge to solve complex urban challenges.

UrbanTransCap addresses these problems by building the capacity of university lecturers, students and graduates and promotes networking with key stakeholders and the development of the necessary infrastructure to build initial foundation to facilitate on a longer term a transformative science approach. The prerequisites for achieving this goal will be very different for all participating universities, as will their environment. The project is therefore understood as a process that equips the participants for the journey towards transformative science.

Goals and Areas of Capacity Building

The primary objective of the project is to enhance the capacity of participating universities to engage in transformative science practice. This is to be achieved through the following goals:

- The project aims to empower universities, teachers, students, and graduates to become long-term actors in the transformation of urban spaces and to anchor this approach at the faculties participating.
- The project will also facilitate the establishment of networks between universities, civil society, and the public and private sectors, with the aim of fostering collaboration for urban transformation.
- The creation of both hard and soft infrastructures for development of real living laboratories at the partners to facilitate joint learning, teaching, research, and development. These laboratories should be designed to facilitate joint learning, teaching, research, and development, and should include the establishment of physical infrastructures for this purpose.
- Training of educators and participants in project- and research-oriented teaching and learning with interdisciplinary and transformative approaches, as well as the active implementation of these formats and anchoring in the curricula.
- Expansion of general digital competencies (students and teachers) and specialized digital competencies for innovations in the areas of NBS and BGI. The teaching and learning formats will be conducted to test the innovative digital technologies for solution approaches in the areas of BGI and NBS. These formats will include the examination of potential applications of blockchain technologies as a means of financing measures in the areas of BGI and NBS; the exploration of the possibilities offered by artificial intelligence for optimization and planning; and the utilization of environmental sensors for monitoring and data provision for optimization and planning.
- General internationalization and networking of the universities in the consortium.

Anticipated Project Outcomes

The project will establish an integrative approach to teaching, research, and transfer in the areas of urban nature-based solutions and urban blue-green infrastructure. This will result in the following outcomes:

- The project will facilitate the strengthening or establishment of networking between universities, industry, management, and civil society.
- It is expected that all participants will gain enhanced knowledge and skills in the implementation of NBS and BGI.
- Initial approaches to transformative science practice and real lab approaches are known, tested, and further developed and used by the partners.
- The testing of innovative technologies and the dissemination of knowledge about them.
- The transfer of applied knowledge between universities and external partners will be facilitated.
- Strengthened practice-oriented teaching at partners to better prepare graduates for the labor market demands.
- Strengthened digitalization competencies among educators and students.

- The establishment of exchange platforms for further collaboration across institutional boundaries is initiated and operational.
- Further internationalization of universities.

Project Activities

- A detailed educational needs analysis was conducted at the outset of the project to identify knowledge gaps and optimize the project focus. This involved an in-depth examination of the urban nature-based solutions and urban blue-green infrastructure. The research was conducted by groups comprising experts, teaching staff, and graduates/students.
- Workshops with university administration and leadership on the challenges and solutions related to the implementation of practice-oriented teaching and transformative science approaches.
- Didactic workshops and training.
- Curriculum workshops (revision of curricula, development of curricula, etc.).
- Integration of practice-oriented teaching/living lab approach.
- Development of small exemplary transformative real labs in collaboration with non-university partners.
- Acquisition and expansion of infrastructure for new teaching and learning formats.
- Writing workshops for students and teachers.
- Information workshops for other universities, institutions, and civil society in the region on project outcomes.
- Adaptation of teaching and learning materials from existing materials.

Target Group and Formats

The principal target audience for this project is educators and students, in addition to the universities themselves. Secondly, the project addresses individuals who have already graduated from their studies, as well as those engaged in public administration, civil society, and the private sector. The two primary groups will be enhanced in their capacity to implement and collaborate, thereby facilitating urban transformation. To achieve the necessary interdisciplinary approach, the project addresses a variety of disciplines at both the university level and beyond. These include typical disciplines such as architecture, urban planning, geography, and biology, as well as disciplines such as agriculture, forestry, economics, business economics, and business and information technology.

Relevance of the Project within the Priorities of the European Union and the Erasmus+ Program

In line with the Erasmus+ funding of the European Union, the UrbanTransCap project specifically addresses the topics of "Green Deal" and "Digital Transformation", as well as to a lesser extent the themes of "Governance, peace, security and human development" and "Sustainable growth and jobs"

Target Region and Partner Network

The UrbanTransCap project is a collaboration between universities from the South Asia and Southeast Asia regions with European universities. In South and Southeast Asia, collaboration is sought with established and less established universities (e.g., universities outside national centers) in the target region. This partnership approach will facilitate the sharing of expertise and resources, allowing participating universities to contribute their respective strengths and a variety of disciplinary fields dealing with the topics of NBS and BGI. It is explicitly required that some universities in the consortium possess expertise in the development of higher education teaching and didactics, with a particular focus on the transmission of digital competencies, digital teaching, and experience in project- and research-oriented teaching. In selecting partners in the target region, it is also aimed that some of them already have initial contacts and cooperation with the public sector, civil society, and the private sector.

About the Faculty of Spatial Development and Infrastructure Systems at TH Köln and its Institute for Technology and Resources Management in the Tropics and Subtropics (ITT)

The Faculty of Spatial Development and Infrastructure Systems at TH Köln, together with the Institute of Technology and Resource Management in the Tropics and Subtropics (ITT), stands for the vision of mastering global challenges such as energy transition, transport development, food transition and climate neutrality. Founded in 2019, the faculty pursues inter- and transdisciplinary approaches in teaching and focuses on the redesign and skilful coordination of measures to strategically manage natural resources in the coming decades.

The faculty focuses on an applied frame of reference that is concretised through practical laboratory work in a co-design process with local stakeholders. This methodological approach is based on the extensive experience and structural foundations of the ITT, which have matured over four decades. The faculty thus becomes a symbol of innovation and practical solutions to societal challenges.

The Faculty's primary goal is to train specialists who are able to manage and master the complexity of global change. In cooperation with stakeholders from politics, business and civil society, it works to identify relevant problems and develop socially innovative solutions. The practical knowledge gained in real-world laboratories is internationalised through university partnerships and the commitment to systemic, resource-centred, stakeholder-oriented and international perspectives is underlined. This global network strengthens TH Köln's ideals of global citizenship and prepares graduates to tackle real-world problems with digital solutions and to assert themselves confidently on the international labour market.

At the same time, the faculty and institute want to train and promote experts who can develop strategies for the sustainable use of our planet's scarce natural resources in the face of demographic, economic and climate change. The diversity of technical and cultural backgrounds is of great value in finding solutions for complex human-environment systems that contribute to a reliable supply of water, food and energy for future generations.

With more than 40 years of experience in teaching and applied research, ITT and faculty see their graduates as future leaders in international cooperation for sustainable natural resource management. Given the importance of lifelong learning, advanced teaching and learning methods are integrated and graduates are prepared to become influential decision-makers in a network of science, expertise and practice.

More information: <https://www.th-koeln.de/en/F12>