executive summary

HafenCity University Hamburg (HCU), Lübeck University of Applied Sciences (THL), together with a service provider yet to be determined, are applying for scientific support of the research program "Sustainable Development of Urban Regions" as a complementary team with a cross-organizational approach. In the proposed concept, program support is designed as a closely coordinated combination of technical and communication tasks. On the one hand, it serves to support and relieve the projects in the generation, consolidation and diffusion of knowledge, and on the other hand, it serves as complementary cross-sectional research. The primary goal is to increase the effectiveness of the research programme by means of technical and procedural competencies and to create added value that goes beyond the sum of the individual projects. This added value is based on the project content and expertise, which are brought together by the programme support, as well as in the cross-sectional view of the innovation approach. A project-related impact analysis supports the implementation of the innovations and makes obstacles and opportunities visible. The projects are accompanied in their transdisciplinary work, and actors and activities within the programme, but also with external stakeholders, are networked nationally and internationally. With the help of modern management methods, new knowledge is bundled and transferred in a target group-oriented manner - especially into practice. The focus here is on implementation, generalisation of success models, "up-scaling" and the consolidation of results beyond the project term. This concept of programme support ultimately improves the programme results and the visibility of German urban research in the national and international research landscape and makes valuable learning effects usable.

1. Initial situation, problem and objective

In recent years, the development of urban regions in emerging and developing countries has faced challenges that are characterized by growing dynamics, complexity and increasing pressure to act. Problem areas such as worsening living and environmental conditions, a lack of resilience or low steering capacities of acting actors have become more entrenched. This development requires public and civil society actors to design intelligent and sustainable strategies that improve local living conditions, open up new economic perspectives and bring cities and regions closer to the goal of sustainable development through process and system innovations. Model projects under the BMBF funding initiative "Future Megacities" have demonstrated that research with application-oriented solutions

can make valuable contributions to the sustainable development of urban areas and is still urgently needed. This development is now being continued with the FONA³ funding measure "Sustainable Urban Regions". The initiative enables the development, testing and expansion of innovative solutions in various fields of action in urban regions. It is set in the context of national and international agreed goals and programmes (e.g. Future City, Internationalisation Strategy of Education, Science and Research of the Federal Government, UN SDG, New Urban Agenda) and initially relates to the western region of Southeast Asia and China. Within the framework of the accompanying concept proposed here, the three partners want to support the research programme in a needs-based manner and increase its effectiveness.

2. Conceptual approach, solution path

The programme support for "Sustainable Urban Regions" is a multi-level task that integrates direct project support, networking and dissemination as well as scientific classification and synthesis and cooperative evaluation. This range of tasks is carried out by a transdisciplinary competence team from science, management and communication and brings together the expertise in the fields of urban research, knowledge and innovation management, project management and international cooperation necessary for the implementation of the proposed concept in a complementary manner.

The competence team, in which the partners HafenCity University (City Science Lab) and Lübeck University of Applied Sciences (Department of Urban Planning and Development) contribute scientific expertise, is to be comprehensively supplemented by a third partner with expertise in knowledge communication, transfer and utilization management, who will be commissioned by the consortium leader HafenCity University Hamburg as a subcontractor.

2.1. Project principles

The usefulness and added value of programme monitoring is based on the following principles, in accordance with the requirements of the call for proposals:

Enabling and implementing synergies at programme level: TRAINER focuses on synthesis and synergy development at the program level, not on controlling individual collaborative projects. By establishing an attractive, dynamic communication and information structure, incentives are created for the individual collaborative projects to engage with each other.

to participate cooperatively in the overarching topic and program development with their findings and activities. The exchange of knowledge also serves to make groundbreaking approaches of individual collaborative projects known and thus to initiate learning processes in other projects. This leads to scientific and structural added value in the collaborative projects and makes "Sustainable Urban Regions" a "learning programme".

Strengthening implementation orientation: In order to promote innovative approaches, the collaborative projects are supported methodically and strategically in their tasks with regard to stakeholder involvement and the stabilisation of their results. This support is provided on a needs-oriented basis within the framework of joint workshops, through handouts and checklists, exchange of experience and selective consulting. The development of contacts with national and international stakeholders and user groups also serves to initiate the transfer of knowledge to potential users of results. For this purpose, the project-specific relevant target groups must be identified and included.

Linking science and practice: Progress advice tailored to the individual collaborative projects can strengthen the potential of inter- and transdisciplinary cooperation. To this end, an active dialogue must be conducted in both directions: Results from research are carried into practice; questions, topics and needs from practice are in turn fed into ongoing research. Joint work on potential solutions can take place in thematic workshops and in stakeholder segments at status conferences.

Synthesize and disseminate results from collaborative projects: In addition to the scientific syntheses, the programme support will develop syntheses on the practice-relevant results of the research projects: Which results of the programme are of fundamental importance for which user and user groups? Which approaches are transferable to other cities and regions? Can general conclusions be drawn? Which results are fed into ongoing expert discussions? How can the experience and knowledge gained be consolidated?

Make a scientific and practice-relevant contribution of its own: The scientific support makes cross-project contributions that provide input for the scientific discussion and serve to evaluate the ongoing research programme. The core of the research contribution is formed by (1) a new methodology for the creation of

project-specific impact framework and the development of impact analyses to measure the transfer and implementation effects, (2) the identification of problems and issues to be addressed in the future through targeted analysis of project content and developments, and (3) the provision of an innovative digital decision-making infrastructure (CityScope).

2.2. Project architecture: Three interlinked impact levels

The concept proposed here aims to provide ideal support for the individual research projects, as well as to systematically leverage the cross-project synergy potentials at programme level. Through a flexible project architecture and adaptive management methods, the accompanying project is able to address the partly asynchronous runtimes and heterogeneous contexts of the different collaborative projects in the best possible way. The modular structure also allows the accompanying research activities to be expanded as needed to include additional projects, which, according to the following announcements
e.g. in an extended geographical context.
The conceptual architecture of the project distinguishes between three impact levels, which are arranged around the projects to be supported in a ring-like manner with varying radius of impact. For each level, specific bundles of offers (services, tools, processes, activities) are provided. Furthermore, it is ensured that a bidirectional exchange and feedback between the three impact levels can take place (Fig. 1).

Level 1 "Support" assists project management in the individual projects in formulating project-specific impact frameworks (e.g. through "impact profiles"), which support the projects in identifying the expected project-specific impact with regard to the overall objectives of the programme ("impact on time"). For this purpose, agile project management is introduced for results-oriented project coordination in the overall project as well as in individual work packages. Agile methods such as Scrum - which have become firmly established in the IT industry or in engineering - ensure with clearly defined role assignments as well as communication and feedback processes that complex projects lead to implementable results despite changing boundary conditions. A central offer for the individual projects is the creation of "windows" for transfers from other projects and for the anchoring of cross-linkages in order to promote synergies and the creation of added value between the projects (cf. level 2).

Level 2 "Added value" networks the individual projects with each other and develops thematic and structural synergies. Cross-cutting themes that are relevant to several projects are systematically identified and developed (WP 4). In order to effectively feed synergies back into the projects, cross-project topic and focus groups ("Communities of Practice") will be formed. For junior researchers, this format will be expanded in the sense of a project college in order to facilitate cross-project learning and networking in the scientific community.

Level 3 "Impact" aims at maximising the "impact" of the projects in formative-qualitative as well as summary-quantitative terms. For this purpose, project support offers tools that connect the projects with external stakeholders and users. Conceptual building blocks for this are a "knowledge market" and a "transfer market", which are developed supportingly around the projects. They ensure that application knowledge and innovations are transferred back into the concrete projects (cf. level 1) or topic and focus groups (cf. level 2) from them. For the knowledge market
e.g. a Project Live Community should be established, which is managed and moderated within the framework of the accompanying research (cf. WP 3.5) and, if necessary, makes use of existing social media.

2.3. Toolbox: Modular project support

In order to do justice to the specific nature of the individual projects, a set of support formats was derived in accordance with the above-mentioned three impact levels and the overarching goals of the accompanying research (Table 1). This modular toolbox comprises tools, processes, activities and services that support the individual projects and their teams as well as the overall programme across projects. The organisational translation is derived from these support formats, the partner structure and the three impact levels.

the project structure and the individual work packages of the proposed accompanying project.

2.4. Theme sponsorships / expert system

A mentoring principle ensures that all relevant topics and fields of innovation for sustainable urban development are covered with corresponding expertise in the programme support team (Table 2). Here, the scientific and technical expertise available in the institutions and networks of the project partners is to be comprehensively brought in and made usable.

3. Work programme

The TRAINER project proposed here refers to a total duration of 8 years. The subject of the current application is the five-year 1st phase. The information on phase 2 is for information purposes only, but is neither binding nor part of the application.

WP 1. support and progress advice at project level

Target groups: *Project participants and cooperation partners at project level;* ***Management: THL***

According to the scheme of the impact levels, WP 1 concentrates on the support of the individual collaborative projects.

The particular benefit and added value for the funded projects through cooperation with TRAINER results primarily from the provision of a project-specific, individually derived support and advice package that maximises the impact of the projects in their respective contexts. Within the framework of project sponsorships, project diagnostics are offered that do not intervene but support the project participants in identifying "Unknown Knowns" (the knowledge lying dormant in projects) and "Known Unknowns" (the unanswered questions and problems) and in using them for the further development of the projects.

As the projects funded under the programme are intended to act as beacons and catalysts for sustainable urbanisation, progress advice and support at project level is focused accordingly:

a) the role of the individual projects as lighthouses through demand-oriented consulting with regard to knowledge creation, application and diffusion as well as project profiling, and

b) the external expectations of the projects as catalysts for exemplary solutions by communicating the overall objectives and expectations of the research project to the projects.

This interplay between the knowledge interests of the overall programme and the research interests of the individual projects will be examined in conjunction with the specific objectives and

logics of action of the projects and their partners into a project-specific impact framework ("impact profiles"). This impact framework is defined together with the projects as an instrument of support and progress advice and allows them to operationalise and optimise their potential impact. In terms of content and methodology, the impact framework translates methods introduced in programme evaluation, such as the evaluation of the DAAD programme area "Educational Cooperation with Developing Countries "[1], to concrete project support in the programme "Sustainable Development of Urban Regions". Specifically, an impact framework is to be established for each project, made up of various interrelated and independent inputs (resources), outputs (activities), outcomes (goals) and impact (desired effects), which are assessed using jointly developed evaluation criteria. In contrast to a classical programme evaluation, the chosen approach of the impact framework does not aim at evaluating a programme in the context of e.g. development cooperation, but at promoting transparency with regard to impact both at project and programme level.

The respective project-specific impact framework is therefore based, as outlined above, on the joint project-specific definition of the objectives in relation to the two impact directions and expectations (impact) for project objectives and programme objectives. For both, the objectives and also the desired impacts are to be defined in order to create the basis for identifying risks of project implementation as well as content-related challenges in connection with the requirements and findings from the two superordinate impact levels of the monitoring (cf. WP 4). With this impact framework, a framework is defined locally for the project; however, in the sense of agile project management, it is also a target agreement that can be updated and used for critical reflection on the project activities with regard to the superordinate goals. In this way, the impact framework serves both as a tool for further internal development in terms of content and operations and as an instrument for transparent impact analysis of the results and planning mechanisms implemented locally, which are based on jointly set goals and indicators and help to ensure that complex projects, despite changing boundary conditions, consistently lead to results that can be implemented.

WP 2: Intra-programme networking, knowledge management and communication

Target groups: *Project coordinators, project managers, project staff, cooperation partners, young scientists, scientific communities;* ***Management: HCU***

The measures in WP 2 are aimed at cross-project networking ("added value" level). They promote the continuous exchange and learning process, internal and cross-project communication, and efficient and smooth cooperation between all actors in the funding priority. On the one hand, a networking and cooperation process is initiated with person- and team-oriented activities, which are intended to motivate cross-project cooperation and promote an intensive exchange. In moderated synergy workshops and study groups, for example, common

research problems, methodological approaches as well as overarching solutions will be developed. On the other hand, technical networking tools and services will be provided on the collaboration and transfer platform to be established (cf. WP 5.4), which in the programme will not only be a performance-related

able knowledge and communication management between projects and the people involved, but also enables analyses of the project contents. The exchange of information, knowledge bases and documents is supported by the components created here (wiki, newsletter, communities of practice). In addition to the innovations generated in the projects, the active development of communication and cooperation processes can add value to the programme as a whole in the sense of a "learning" process.

Programme" should be created.

WP 3 Science communication and public relations, external networking, transfer of results and exploitation

Target groups: *Administration and politics in partner countries as knowledge users, science, NGOs, city networks and associations, organisations of development cooperation, multipliers, interested public;* ***Direction: UA***

A key factor in generating added value from the research programme and its projects will be effective communication and networking with relevant target and input groups in the "outside world". This includes the dissemination of key overarching developments and results from the programme via targeted science communication and broader public relations work. This includes as well as the involvement of external input providers, knowledge users and multipliers through active networking measures. Whether the research programme can ultimately make a significant contribution with a sustainable impact depends on the organisation of effective transfer to science and practice. The activities of the programme support are accordingly geared towards fertilising the scientific discourse. However, it aims even more strongly at promoting the application and scaling up of results and solutions in practice. Accordingly, the following measures are the focus of the activities:

External stakeholder communication and networking: At the beginning of the programme support, relevant external target groups and cooperation partners are identified whose involvement promises clear added value for the implementation of the programme's objectives. On this basis, contacts and interfaces to (inter)national research activities, implementation-oriented multipliers and organisations are established and maintained. In this way, supporters of knowledge generation, multipliers of knowledge dissemination and the community of knowledge consumers and users are involved at an early stage. Through this

The project will facilitate and consolidate the downstream transfer of research results and their application. The following sub-work packages are planned:

External science communication and public relations: In the context of overarching science communication, the ZE supports the ZG through a continuous flow of information to actors from science and practice, as well as to a broad public in Germany and internationally. In doing so, the activities are clearly aligned with target groups, occasions, media and formats. In addition to basic information on the programme, superordinate research results are collected, prepared for specific target groups and disseminated. In order to ensure a high visibility of the funding measure, various information channels and formats will be developed and implemented in close coordination with the CGs in the sense of a multi-channel approach. The stakeholder analysis carried out in the WP will make an important contribution to defining the target groups.

Transfer office "Science to Practice": Transfer of results and exploitation: The transfer and application of scientific findings and approaches to solutions in politics, civil society, business and science is a core task of the research initiative. The experiences of the previous "Future Megacities" programme have shown that due to the high complexity of thematic field and stakeholder structures, the transfer of knowledge and results to target groups and the demand-oriented up-scaling of solutions are difficult to implement in practice. Therefore, in addition to the project support in WP1, great importance is attached to the establishment of a cross-programme demonstration platform for transfer and cooperation support (cf. WP 5.4) in the thematic field of "Sustainable Urban Regions".

importance is attached to this. On the basis of the above-mentioned stakeholder analyses and partnerships entered into, the transfer of knowledge to knowledge consumers and implementers from science and practice is to be facilitated and organised by means of coordinated mediation and exchange formats. The holistic transfer concept is continuously adapted to the requirements.

WP 4 Scientific programme support, observation and monitoring as a cross-cutting task

Target groups: *BMBF, PT DLR, scientists, DC organisations,* ***WP management: HCU*** The scientific support and monitoring is carried out as cross-sectional tasks across the three impact levels. The focus is on investigating the innovation content of the individual collaborative projects and the overall programme with the aim of placing it in the research landscape on space and innovation. The AP validates the findings and (interim) results of the collaborative projects and tests them for their effectiveness (benchmarking). For this purpose, impact analyses are carried out to determine the transfer impact of the projects as well as the effectiveness of the implemented results. The project-related impact frameworks are established with a preceding analysis of the internal and external requirements and the continuous monitoring of the ongoing projects is documented in technical result reports to BMBF/PT DLR. In addition, a summarizing knowledge synthesis Innovation- and development topics that have become visible as future development trends or scientific issues in the projects and that may serve as a basis for future BMBF programmatics. programmes. The scientific results are published finally in The results will be summarized in a comprehensive publication ("synopsis") and a digital knowledge base. As a concrete tool, an urban data-based decision-making infrastructure (CityScope) is provided, which was developed by the HCU in cooperation with the MIT Media Lab (Fig. 6). It supports planners, authorities and political decision-makers,

assess the effectiveness of planning measures in dynamic urban contexts. Beyond the application in expert groups, the CityScope is an effective digital tool for participatory negotiation processes with extensive participation groups.

WP5. Overall coordination and project management

Target groups: *Consortium partners, BMBF, PT DLR;* ***AP leadership: HCU***.
A project office will be established at HCU for the overall coordination of the accompanying research. Project management will be carried out using agile management methods such as Scrum, which ensure timely and usable results through precise task tracking ("backlogs") and definition of iterative work steps ("sprints"). In addition, an essential part of the project management is the organization and implementation of regular jour fixes for the participants of the program support as well as technical discussions with BMBF/PT DLR. In these meetings, the operational process and the status of the accompanying project are discussed and coordinated. The basis for this are quarterly reports and status presentations prepared by the PM.

A collaboration and transfer platform ("MarketSquare") will be set up and operated as the central tool for project support. The system provides four main functionalities: Databases (products, results, contacts), knowledge tools (project wiki, CityScope visualization), communication and interaction services (setting up virtual group rooms e.g. for communities of practice) as well as project management support (e.g. by defining "SmartFlows" for automated processing of routines) (Fig. 5). For the implementation, a non-proprietary base system (e.g. BitBucket) is to be used, which enables a fast overall solution tailored to the project requirements and ensures long-term availability and further development. The project partner HCU brings the necessary technical expertise to the table.