



Sustainable Development  
of Urban Regions

# Facilitation & Synthesis Research

BMBF Programme  
Sustainable Development  
of Urban Regions (SURE)



SPONSORED BY  
**Frank Schwatz**





## Team

### HafenCity Universität Hamburg (HCU)

- Coordinator / Project office at the HCU
- Scientific Support
- Sustainable and Digital Cities

### Technische Hochschule Lübeck (THL)

- Scientific Support
- International Transfer
- Sustainable Urban Development

### TÜV Rheinland Consulting (TRC)

- Management Expertise
- Communication & Knowledge Transfer
- Stakeholder Networking



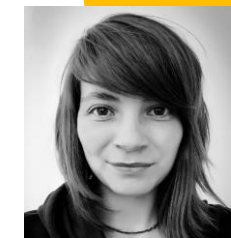
Prof. Dr. Jörg  
Rainer Noennig



Dr. Katharina  
Borgmann



Mai Ahmed



Ágota  
Barabás



Anika Slawski



Prof. Frank  
Schwartze



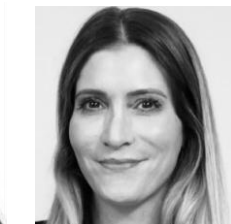
Kai Michael  
Dietrich



Dr. Marcia  
Giacominni



Paula Hüttl



Dr. Nadine Taha

## Tasks

- **Knowledge Mining** Identification of issues to be addressed in future through analysis & synthesis of project content and developments
- **Multilateral Communication** External science & stakeholder communication, networking and PR
- **Transfer & Impact** "Science to Practice" office for transferring and utilising results; Ensuring programme impact beyond the projects



SPONSORED BY THE

## Project's Structure

- **Clusters** of related tasks and themes, supervised by one TRAINER partner (HCU, THL, TUV)



## Synthesis of the SURE Focus Topics

Topics extracted  
from

**BMBF Call 2017**

Topics extracted  
from

**Reports of the  
Definition  
phase and R&D  
Phase  
applications**

Topics extracted  
from

**Project Profiles  
surveyed for  
setting up the  
Homepage**

= 6 SURE Focus Topics



## SURE Focus Topics

Focus Topics from the BMBF call

**Integrated  
Planning and  
Development**

**Resource  
Efficiency and  
Mitigation**

**Risk Management  
and Risk  
Reduction**

Focus Topics from the projects

**Ecosystem  
Services and  
Natural Solutions**

**Urban Rural  
Nexus**

**Sustainable  
Behaviour and  
Practices**

## **SURE Cross-Cutting Issues “How to?”**

Item 1

**Bringing  
knowledge into  
practice**

Item 2

**Implementation  
and  
transformative  
practice**

Item 3

**Participation,  
Co-Learning  
and Co-  
Creation**

Item 4

**Evidence based  
Decision  
making**

Item 5

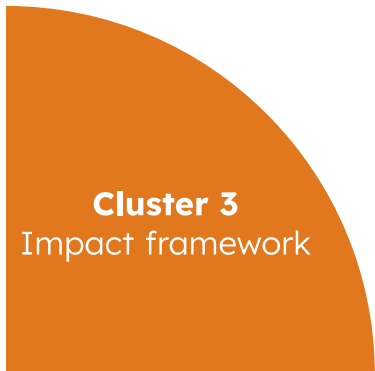
**Digital Tools  
and Data**



Sustainable Development  
of Urban Regions

# Cluster 3 Impact Framework

## Cluster





## Cluster 3

### Impact Framework

- ensuring the funding priority's impact beyond the projects
- as part of transdisciplinary research
- as a tool of reflection and self-reflection
- to observe progress of the SURE projects and the SURE funding priority towards impact



transdisciplinary  
research must  
reflect itself



## RESEARCH

### INTERDISCIPLINARY

*corresponds to a*

## COMPOSITE

*In this, disciplinary properties and capabilities are combined for a specific purpose and external parties are only functionally connected. The combined disciplines have predefined properties. .*

### TRANSDISCIPLINARY

*characterised by*

## POROSITY

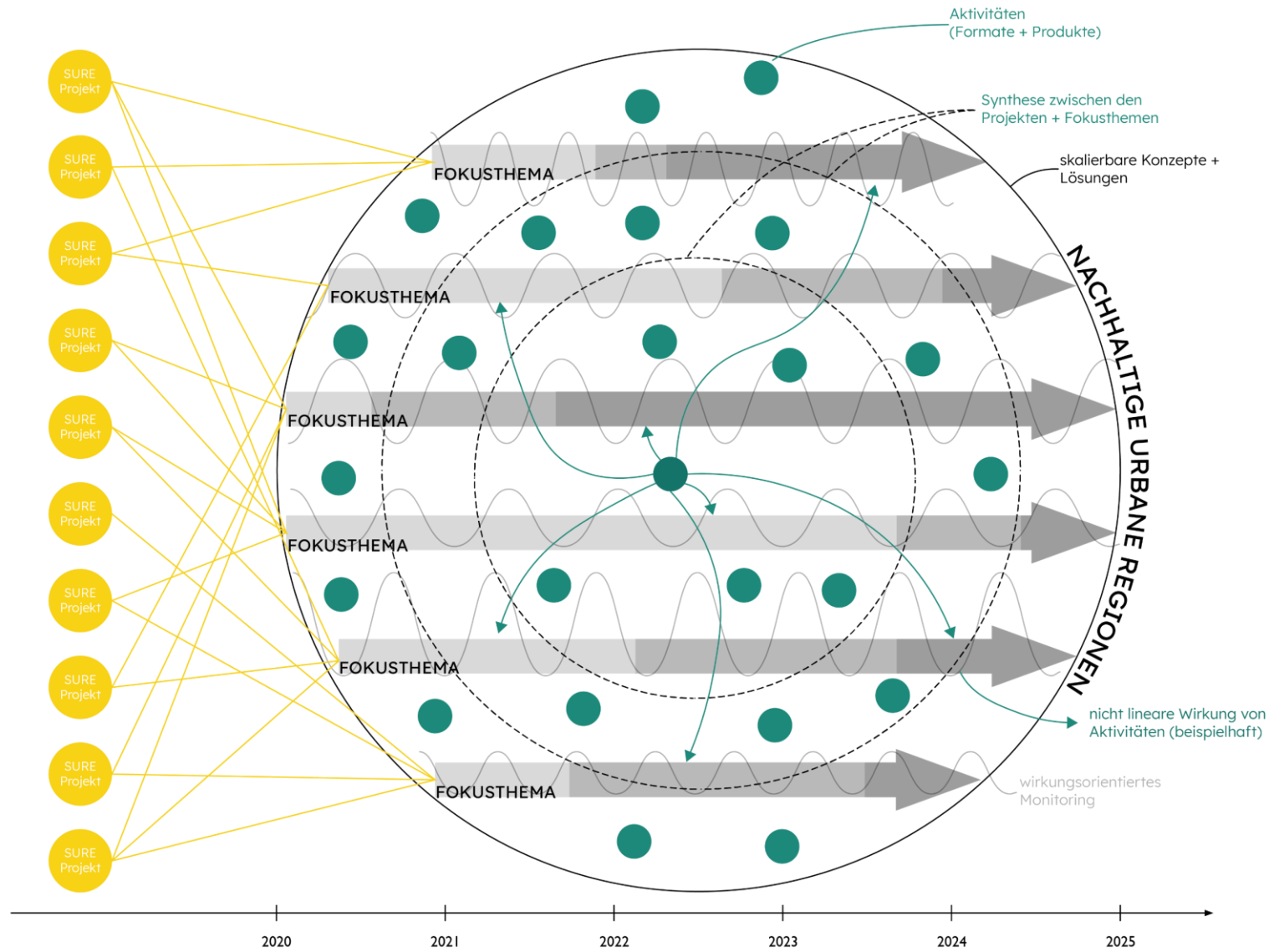
*It creates the condition for un-directed and open exchange between all actors, whether academia or urban practice, as well as their knowledge stocks and sources, in order to jointly address problems and develop solutions in a participatory and critically reflective way.*

# Impact-Oriented Monitoring

## as part of transdisciplinary research

- Pursues the goal of constantly qualifying the interventions
- Becoming aware of changes and analysing their causes
- Initiating internal, ongoing reflection and learning processes
- Strengthen intended impacts and react to unexpected impacts
- It is not about assessments in the sense of an evaluation
  
- Impact-oriented monitoring aims to make the impact of both the individual SURE projects and the SURE funding priority visible





# Reference and Reflection Framework

## SURE Framework

- Impact-oriented monitoring requires criteria (**references**) and a culture (**reflection**):
- **References:** Highlight the actual references (self-set impact goals) of the SURE projects
- **Reflection:** reflecting on one's own actions and intervening (if necessary)
  - Dynamic framework: Feedback, learning and renewal processes
  - Best possible achievement of the references
  - Portfolio of tools and methods
  - Allow for dynamism, flexibility and adaptation to the specific thematic and local contexts





# Baseline (Teamwork) Announcement Questionnaire

**SURE** Sustainable Development of Urban Regions

**Impact analysis within the framework of the BMBF funding priority SURE**

The BMBF funding priority SURE calls for "an impact analysis of the results and planning mechanisms implemented on site, including the development of indicators". Within the framework of the SURE Facilitation and Synthesis Research Project, such an impact analysis is therefore implemented by developing a Reference and Reflection Framework (SURE Framework). This SURE framework contains the overarching task of implementing an impact-oriented monitoring.

**Impact-oriented monitoring within the SURE Framework**

Impact-oriented monitoring, as understood by SURE Facilitation and Synthesis Research Project, pursues the goal of constantly qualifying the interventions in the sense of action research, becoming aware of changes, analysing their causes and initiating internal as well as ongoing reflection and learning processes in order to strengthen intended impacts and to be able to react to unexpected impacts at short notice. In the context of transdisciplinary research, it is not about assessments in the sense of an evaluation, in which an independent review of the impact is carried out. Rather, impact-oriented monitoring aims to make the impact of both the individual SURE projects and the funding priority (non)judgmentally visible. The architecture of the SURE Framework therefore includes both the project and the funding priority level. Since the impact of the funding priority results from the impactful approaches of the SURE projects, both levels are inseparable. Impact-oriented monitoring is an essential part of the SURE Framework and is carried out continuously for the six **SURE Focus Topics**.

The SURE framework is still at the beginning of its development. The first step will be to identify the actual intended impacts (references) of all ten SURE projects, for which the SURE Facilitation and Synthesis Research Project will conduct a qualitative questionnaire.

Once the references have been identified, reflection tools will be developed, resulting in an individual methodology of reflection culture and thus a project-specific reference and reflection framework. The approach of the SURE Facilitation and Synthesis Research Project to highlighting effective interventions and methods is thus a processual one, in which references are sharpened, the progress of intended impact is continuously reflected and tools adapted to needs (in the next step) are provided for this purpose.

FINANZIERT VON:

**SURE** Sustainable Development of Urban Regions

**Objectives and approach of the questionnaire**

Each SURE project strives for a variety of impacts and develops approaches, concepts and solutions within the framework of the particular spatial contexts and the SURE focus topics. In order to be able to carry out an open survey of the impacts actually aimed at by the SURE projects, a qualitative questionnaire is designed that is open and not much pre-structured.

Since this is the first step towards the intended impacts (references), it is decided not to distinguish between impact dimensions or impact levels (e.g. scientific, societal impacts). The aim is rather to present as complete a picture as possible of the intended impacts of the SURE projects and thus of the funding priority as a whole, hence the choice of an open and qualitative approach that allows for an individual formulation of intended impacts.

At the same time, the questionnaire offers the opportunity to visualise these very intended impacts again in order to be able to reflect on them later - in the second step. The results will be reviewed by the SURE Facilitation and Synthesis Research Project, reflected back to the SURE projects and discussed with them.

**Instructions for filling in the questionnaire**

You will find the questions on the following pages and you can answer them directly in this document. The structure of the questionnaire follows an assumed project structure with overarching goals and intended impacts that are anchored in and assigned to the individual work packages. If your project structure does not correspond to this structure and the questionnaire cannot be answered adequately, please contact us.

Since, as mentioned, this is a qualitative and open survey approach, please use as much space as you need for the illustration of the intended impacts according to your project structure and simply copy the necessary tables as often as you like for this purpose.

We also recommend that you forward the questionnaire to the work package leaders and have the respective persons fill in the impacts intended in the work packages.

You also do not have to send us back a collected questionnaire, we will gladly take care of compiling it. The questionnaire can be filled out in German or English.

Since the framework conditions have changed fundamentally in some cases in recent years - due to the Corona pandemic, among other things - we would like to point out that we are interested in the current status of intended impacts, which may differ from that of the proposal submission.

We would also be happy to discuss this questionnaire at the Status Seminar on 4 and 5 May in Berlin, or feel free to contact your Peers.

Otherwise, please send us the questionnaire by ... at the latest by e-mail to your Peers and/or to [sure@hcu-homburg.de](mailto:sure@hcu-homburg.de)

**Thank you!**

Sustainable Development of Urban Regions Page 2 / 4

**SURE** Sustainable Development of Urban Regions

**1. Overarching intended impact**

Please describe the intended impacts associated with the overall objectives of your project:

(Overarching) intended impacts:

**2. Intended impact according to work packages (project structure)**

According to your project structure (e.g. by work packages), please describe the impacts you are aiming for with your project:

Please describe one intended impact per table (the table-structure below can be copied as often as you like)

Intended impact (according to the project structure):

What internal and external conditions support(ed) or hinder(ed) the achievement of the above-mentioned impact?

Internal and external framework conditions:

In which topic area is the above-mentioned impact targeted?

Please allocate this intended impact to the focus topics (single and multiple answers possible, **mark the applicable one(s) in bold + underline(s)**):

Sustainable Behavior and Practices	Integrated Planning and Development
Resource Efficiency and Mitigation	Urban-Rural-Resue
Risk Management and Risk Reduction	Ecosystem Services and Natural Solutions

Sustainable Development of Urban Regions Page 3 / 4

## **Publication Series**

as part of transdisciplinary research





Sustainable Development  
of Urban Regions

## Format & Concept

**Topic** Transdisciplinary challenges in the development of sustainable urban regions

**Format** Different from – and complementary to – regular science journals or book compilations

**Science Mag** Curated digest (almanac) of 1) Research papers, 2) Solutions reports, 3) Project News and Activities

**Dissemination & Impact:** Easy dissemination concepts, ideas and findings for SURE priority

**Addressing local stakeholders & implementation partners** Presenting SURE work on local level as target

**Synthesis channel** Cross-project perspective, medium for SURE synthesis research and synergy activities.

**Co-authoring** with local project partners and across projects strongly invited

**Quality:** An editorial team plus an editorial board with experts from international institutions and networks



# Transforming Cities



## INHALT 1 · 2020



Seite 6



Seite 21



Seite 24

## FORUM

### Interview

- 4 Für mich ist ein Gebäude intelligent, wenn es seine Umgebung versteht**  
Cedric Nelke, CEO Smart Infrastructure, Siemens AG, über Smart Buildings

### Veranstaltungen

- 6 Meet the World of Building Greening in Berlin**  
Weltkongress Gebäudegrün 2020: 16. bis 18. Juni 2020 in Berlin
- 8 IFAT 2020**  
Branchentreffen der Wasserwirtschaft vom 4. bis 8. Mai 2020 in München
- 10 Städtischen Wandel gestalten – für lebenswerte Stadtreionen im 21. Jahrhundert**  
REAL CORP 2020: vom 15. bis 18. April 2020 in Aachen

## PRAXIS + PROJEKTE

### Energie

- 12 Mit Holzpellets klimaneutral heizen**  
Holz nutzen, erneuerbar heizen, Klima schützen  
Klaus W. König

### Infrastruktur

- 16 Sicherheit, wenn man sie braucht**  
Aluminium-Dammbalkensystem für einen flexiblen Hochwasserschutz
- 18 Abwasserbetrieb Warendorf setzt auf stetige technische Optimierung**  
Flexibilität und (Zukunfts-)Sicherheit durch das Ecosystem PLNext Technology  
Joel Stratzmann

### Stadtraum

- 21 Hamburgs neuestes Quartier gestaltet Gemeinschaft durch Stadtnatur**  
Clara Grimes

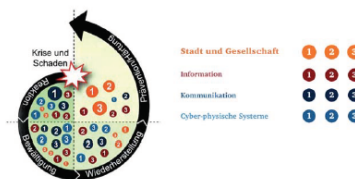
- 24 Das Schafsdach von München**  
Vielfacher Nutzen auf einem Dach vereint  
Gunter Mann

- 28 Badya City – ressourcenschonend und klimaoptimiert**  
Durch integrierte Stadtplanung Kairo im Westen auf nachhaltige Weise entlasten  
Jurgen Happ, Nils Müller, Matthias Dillger

- 31 Grünes Wohnen in Städten**  
Wohnanlage in Teltow bietet Wohnraum im Einklang mit der Natur  
Tassilo Sobliahn

## THEMA

### Urbane Transformation



den kleinsten gemeinsamen Nenner von Energieeffizienz, Nachhaltigkeit und Resilienz anstreben, sondern gerade in deren Verknüpfung Synergien erschließen und nutzen. Zum besseren Verständnis lohnt sich der Querweis auf die Forschung der Gebäudekybernetik, die Haustechnik und Gebäudestruktur stets als ein System begreift, bei dem alle zu planenden Elemente in wechselseitiger Abhängigkeit zueinander, in Bezug auf das Gesamtsystem und den Kontext betrachtet und eingesetzt werden müssen [10]. Resilienz muss nicht Mehrkosten bedeuten, insofern im Normalbetrieb Mehrwerte generiert werden und sich die Investitionen für den Betreiber mittelfristig auszahlen. Installiert man beispielsweise eine Grauwasseranlage, die Abwasser aus Duschen und Waschbecken für die Nutzung von Toilettenspülungen aufbereitet, ergeben sich Potenziale im Hinblick auf die Senkung der Betriebskosten, die Möglichkeiten der Gartenbewässerung und die Nutzung der im Grauwasser enthaltenen Abwärme zum effizienten Betrieb einer Wärmepumpe [11, 12]. Im Notfall ist es technisch möglich, aus dem Grauwasser Servicewasser zu gewinnen, das die mikrobiellen Voraussetzungen der Trinkwasserverordnung erfüllt. Effizienzgewinne ließen sich durch den Einsatz von IKT und einer automatisierten sensorischen Steuerung erzielen. Ähnlich verhält es sich mit der Bereitstellung von E-Mobilität und Vehicle-to-Grid-Fahrzeugen. Während die Ladestationen im regulären Betrieb dem Parkieren und Betanken der Fahrzeuge dienen, stünde im Falle eines Blackouts die vorhandene Akkukapazität der Fahrzeuge als Notstromreserve zur Verfügung.

### SurPLUShome

Neben den zuvor beschriebenen Szenarien, die auf der Maßstabebene von Gebäudecluster und Quartier verortet sind, richtet EmergenCITY auch den Blick auf das Einzelobjekt. Als Arbeitsmodell und Reallabor dient der Gewinnerbeitrag der TU Darmstadt beim Solar Decathlon 2009 in Washington, das SurPLUShome auf dem Campus TU Lichtwiese in Darmstadt. Als Plus-Energie Haus konzipiert, erzeugt es in der Jahresbilanz mehr Strom durch Photovoltaik als es im selben Zeitraum verbraucht [13]. Selbst heute ist dieser Standard noch zukunftsweisend. Für das Szenario eines fünftägigen Stromausfalls betrachten wir das Gebäude aus zwei Blickwinkeln. Bis zu welchem Grad kann es sich unter ungünstigen Bedingungen, wie etwa bei reduzierter Sonneneinstrahlung im Winter, selbst versorgen? Und wie groß ist demgegenüber das Potenzial zum Versorger zu werden, wenn Überschüsse im Sommer erlauben, elektrische Energie zur Verfügung zu stellen? Als zusätzlicher Speicher steht ein

Bild 2:  
Zusammenspiel der Programmbereiche im Forschungsverbund © EmergenCITY – Rudolph-Cieff, Schulze

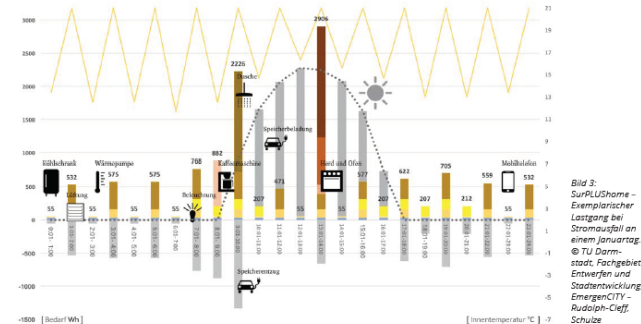


Bild 3:  
SurPLUShome – Exemplarischer Lastgang bei Stromausfall an einem Januartag © TU Darmstadt, Fachgebiet Entwurf und Stadtentwicklung, EmergenCITY – Rudolph-Cieff, Schulze



Sustainable Development  
of Urban Regions

# MIT Tech Review

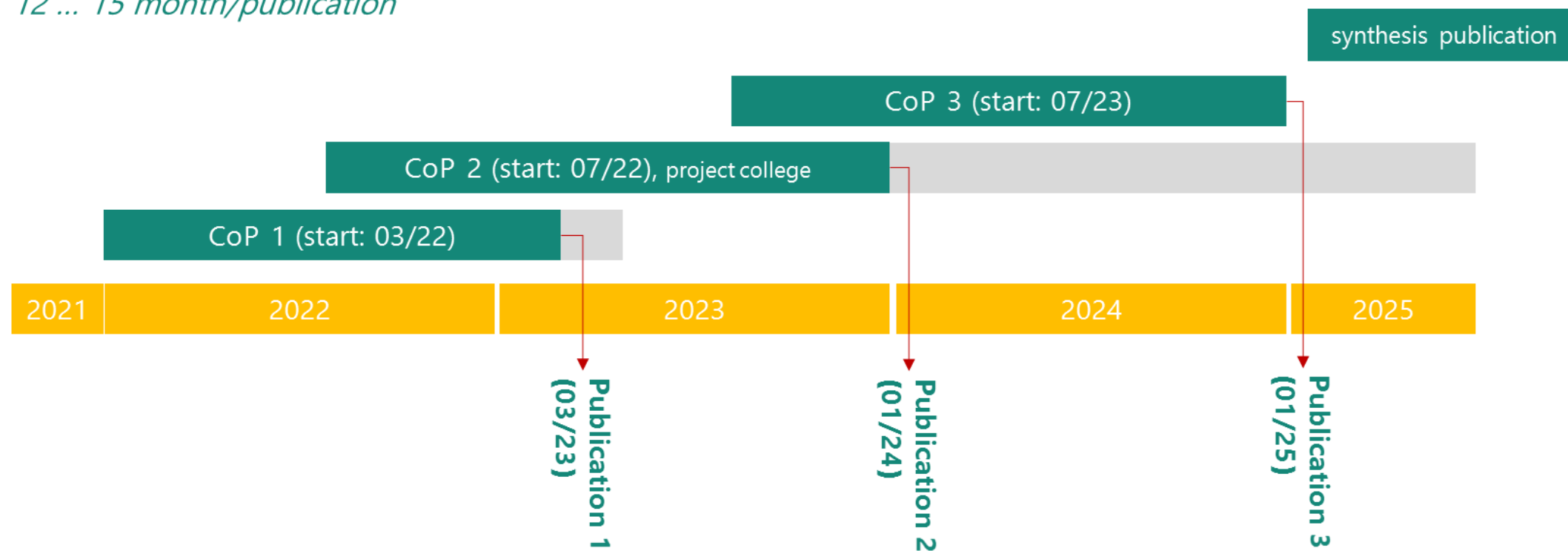




## Timeline

Three issues in 3 years

*12 ... 15 month/publication*



# Call Upcoming

## Call for Contributions

1<sup>st</sup> Edition of the Publication Series “SURE Solutions”

### Goals

With the SURE publication series “SURE Solutions – Sustainable Development of Urban Regions” (Working Title) we will establish a dedicated publication channel that responds to the specific needs of transdisciplinary and transformative research on sustainable urban regions. The series wants to create an understanding how the notion of sustainable development of urban regions is understood, reflected and translated in the various local contexts of South-East Asia.

For all project partners within the SURE priority, “SURE Solutions” provides a low-threshold opportunity to disseminate findings and results from their projects. Forming a showcase for the ongoing projects and activities, and bridging from research to practice, the series wants to establish a link to stakeholders on local level. We therefore strongly encourage co-authorships with local implementation partners, and will make this a central review criterion on the editorial board.

“SURE Solutions” will also function as a communication medium for project synthesis and synergies across the individual projects. Contributions that take a cross-cutting perspective and / or are co-authored by researchers from different projects are thus especially invited.

The series will be published in one annual edition as a hybrid print and online medium.

### Topic Scope

To maintain that all projects and partners funded in the SURE priority can contribute texts to the first issue, we propose the overarching theme **Transdisciplinary challenges in sustainable development of urban regions**. Under this topic frame, contributions may give account on what premises the project concept was created, how the multinational partnerships were successfully set up, and which specific challenges are addressed.

To showcase the projects to potential implementation partners, the contributions also may tell a compelling project story that project towards the envisioned results and outcomes. From the incoming contributions, the accompanying editorials will derive cross-cutting topics, and outline respective synergy and synthesis activities for the SURE priority. Roughly, the issue will feature **four main sections** to which contributions are invited:

1. Partnerships, Networks and Communities
2. Theoretical Approaches and Challenges
3. Tools and Technologies
4. Policy Uptake and Implementation Strategies.

### Format

The publication series is complementary to regular scientific publications, locating itself between science journals and professional magazines. We envision “SURE Solutions” to become a curated digest or almanac of interesting and relevant project information and outcomes. To maximise dissemination, outreach and target group-orientation, we will make the publication available online open access and use the potentials from cross-connecting the various communication media implemented by the SURE priority. Our aim is to respond to the variety of geographical, cultural, linguistic contexts to the largest possible extent (e.g. by automated translations and summaries). We envision (at least) one contribution from every project in the SURE funding priority in each issue. Thus a total of 10 project contributions plus 1-2 editorial contributions will form the main part of the issue. Referring to the thematic anchors indicated above, the contributions may take one of the following formats:

- **Research paper:** Scientific paper with 2.000 - 3.000 words presenting key questions and challenges, theoretical approaches and concepts, and validated research findings.
- **Solutions or activity report:** Article with 1.000 - 3.000 words presenting a key solution, outcome, or result, with a focus on applications, activities and implementations on-the-ground.
- **News column:** Smaller contributions of 500 – 1000 words reporting and highlighting about remarkable activities, events, or other achievements in the SURE priority worthwhile to share.

“SURE Solutions” also wants to provide the opportunity to re-use and re-edit (“digest”) articles that were previously published in other media, if the primary publication channel allows this option. Thus specific topics of interest may be highlighted and selected contents be made more accessible.

### Editorial Concept

The editorial team consists of members of the facilitation and synthesis research project (HCU Hamburg and TH Lübeck). To ensure the quality of the series, it will be accompanied by an editorial board with experts from international networks and institutions. For the production of dedicated issues, additional experts from the individual measures funded by the SURE priority will be invited to the editorial team as guest editors. The editors will run a systematic review process of the incoming contribution, to which members of the SURE funding priority will be invited as reviewers.

### Publication Schedule

Approx. 1 year is estimated for the production of one issue. The targeted publication date for the first issue is Spring 2023. Please send your manuscript not later than September 1, 2023 to the contact address given below.

1. Call for contributions 01.04.2023
2. **Deadline for contributions / manuscripts 01.09.2023**
3. Review Process and paper rework until 01.12.2023
4. Production of online and print edition until 03.2023
5. Publication March / April 2023.

### Contact

Prof. Jörg Rainer Noennig, HCU Hamburg, Digital City Science, [sure@hcu-hamburg.de](mailto:sure@hcu-hamburg.de)

**Thank you!**



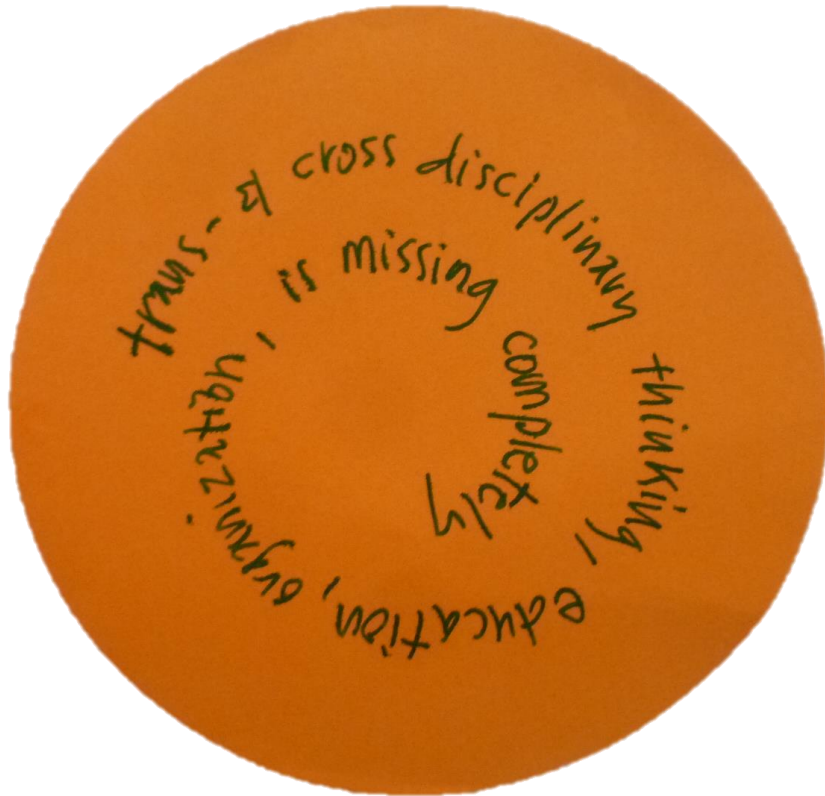
# SURE Futures

## Review of Challenge and Solutions Collection ("TORSTEN")



SPONSORED BY THE

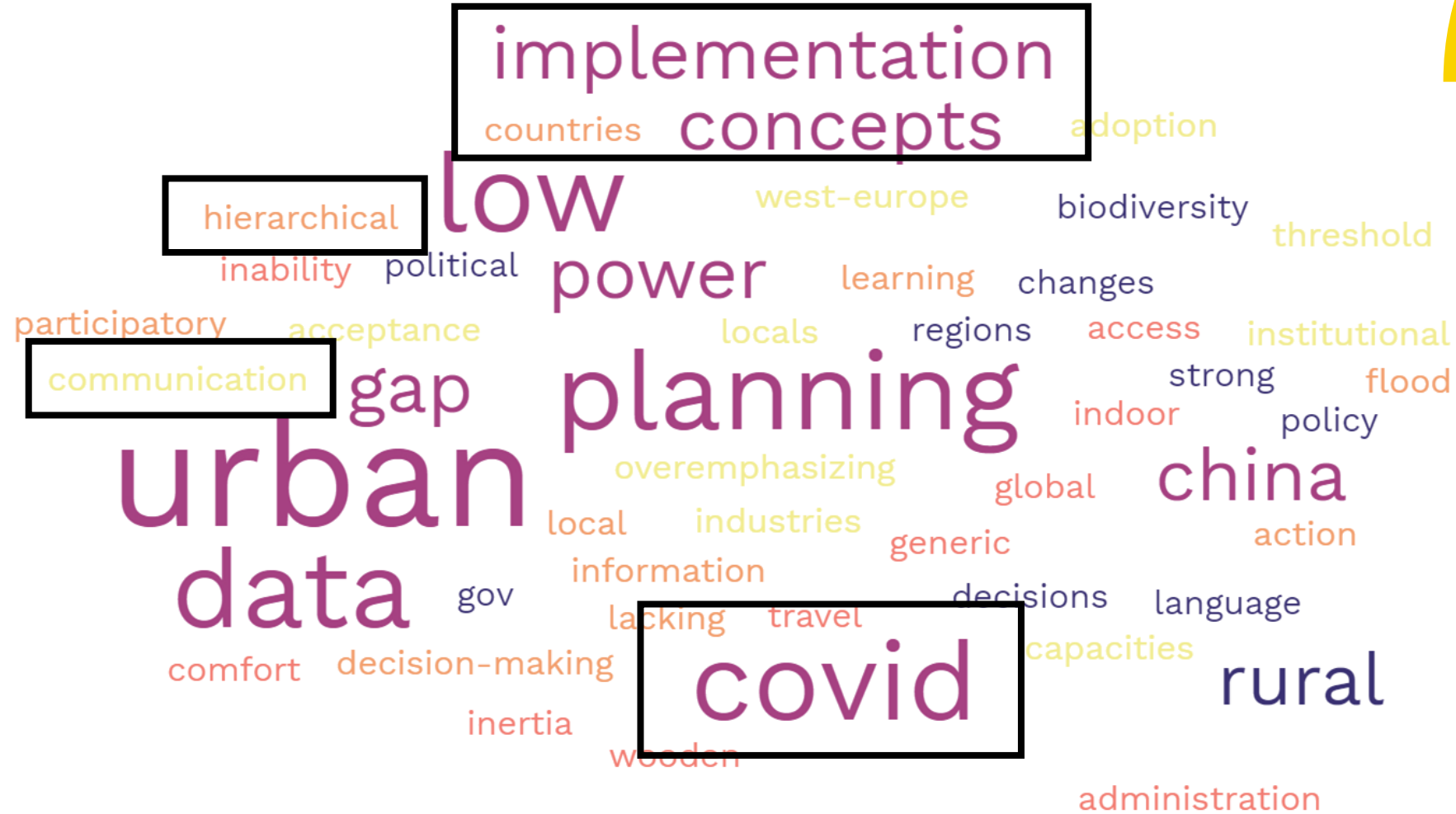
# Critical Challenges & Strong Solutions



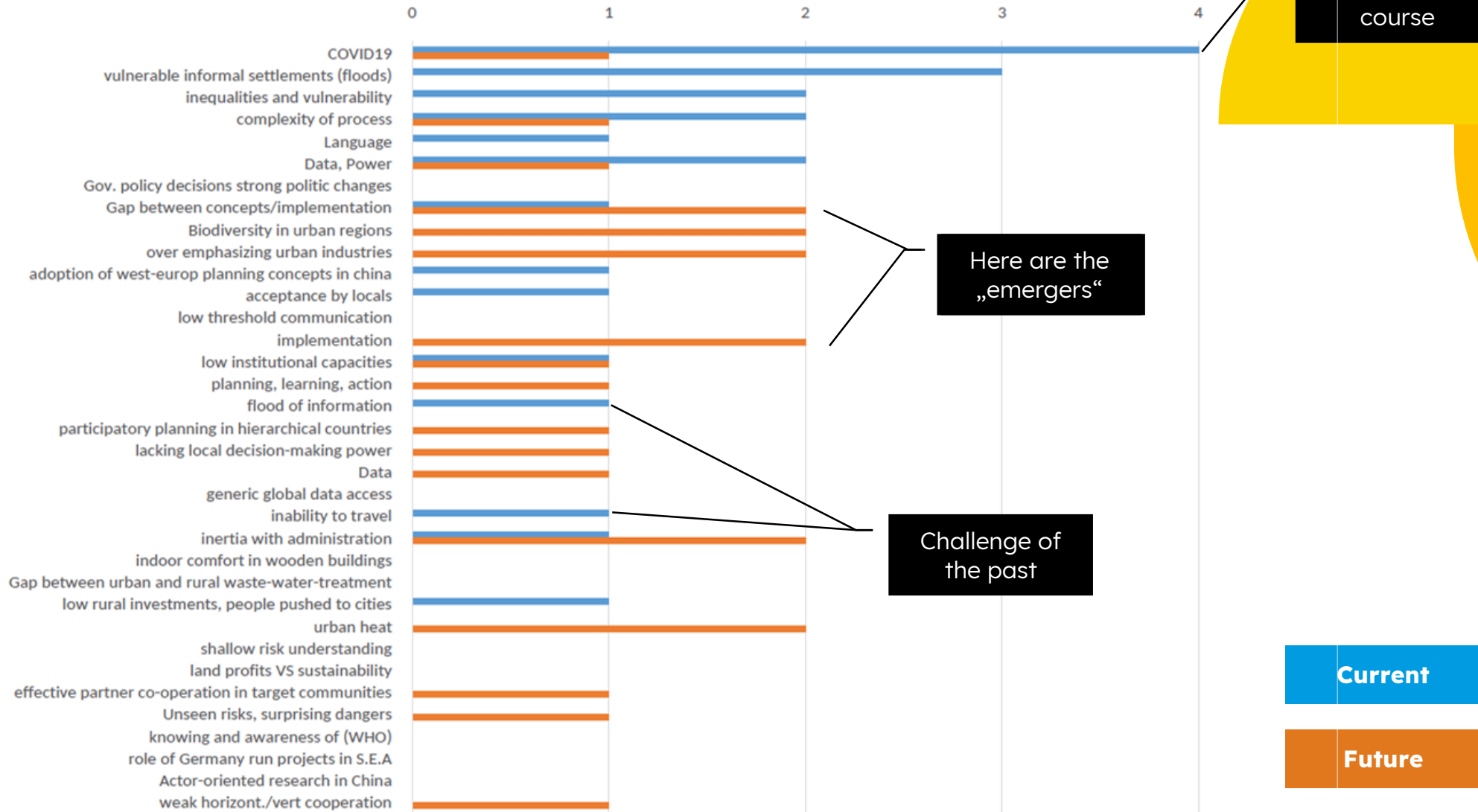




# Key Challenges



# Key Challenges



# Strong Solutions



# Strong Solutions

