

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

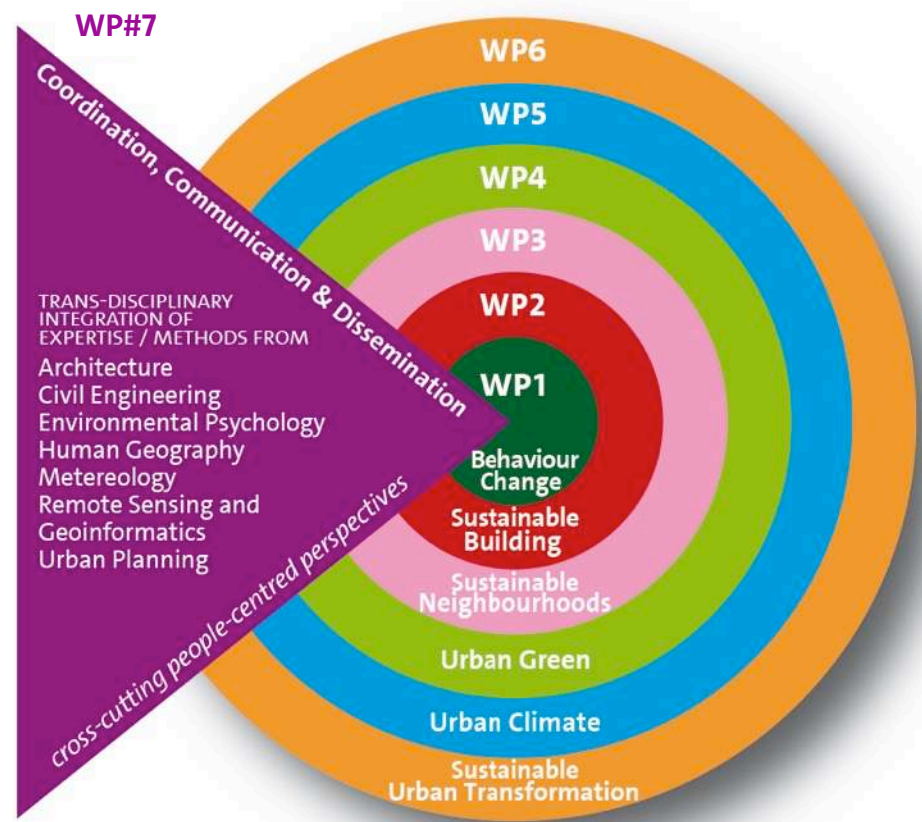
IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability



## Build4People: Enhancing Quality of Life through Sustainable Urban Transformation

### RESEARCH & DEVELOPMENT PHASE

### B4P Research Conference, 28 Sep 2021

#### Build4People Consortium



Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Work Package #7  
Work Package #6



CIUS  
CAMBODIAN INSTITUTE FOR URBAN STUDIES

Local Project  
Management Partner



OTTO VON GUERICKE  
UNIVERSITÄT  
MAGDEBURG

Work Package #1



University of Stuttgart  
Germany

Work Package #2



EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

Work Package #3



Eberswalde University  
for Sustainable  
Development

Work Package #4



INKEK  
institute for  
climate and  
energy strategies

Work Package #5

#### Research Partners



#### Implementation Partners



#### Dissemination Partners



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

 Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

#### 14:00-14:25: Greeting Words

- ✓ *Dr Michael Waibel, Build4People project consortium representative*



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



**FONA**  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

#### 14:00-14:30: Greeting Words

- ✓ *Dr Michael Waibel, Build4People project consortium representative*
- ✓ *Dr Heike Bauer, DLR, representative of German funding agency*
- ✓ *Mr. Christian Berger, Ambassador of the Federal Republic of Germany in the Royal Kingdom of Cambodia*
- ✓ *HE Nuon Pharat, Vice Governor of Phnom Penh Capital Administration*

#### 14:30-14:35: Group Photo

#### 14:35-14:40: Video Clip of Build4People Ecocity Transition Lab with PPCA in March 2020

#### 14:40-14:55: Envisaged activities of the Build4People–PPCA cooperation

- ✓ *Rolf Messerschmidt, CEO of Eble Messerschmidt Partner / Leader of Build4People WP#3 “Sustainable Neighbourhoods”*
- ✓ *Dr Tep Makathy, General Director of Cambodian Institute of Urban Studies (CIUS) / Project Management Partner of Build4People WP#7 “Coordination, Communication and Dissemination”*

#### 14:55-15:05: Q&A

#### 15:05-15:20: Next steps of the Build4People-PPCA cooperation

- ✓ *Vannak Seng, Chief of Administration of PPCA*
- ✓ *Martin Saram, PPCA Liaison to Build4People Project*

#### 15:20-15:30: Q&A

#### 15:30-15:45: Coffee / Teak Break



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



**FONA**  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

#### 15:45-16:00: Build4People's Approach towards Urban Quality of Life

- ✓ *Dr Michael Waibel, Build4People project consortium representative*
- ✓ *Dr Anke Blöbaum, Leader of Build4People WP#1 "Behaviour Change"*

#### 16:00-16:45: Break-out Sessions: "Discussion of Methodological Approaches of the B4P Project"

##### Session #1: How to implement citizen science approaches within Build4People Project?

- ✓ *led by WP#1 "Behaviour Change" and WP#4 "Urban Green Infrastructures"*

##### Session #2: How to combine urban climate planning with thermal comfort of building users?

- ✓ *led by WP#2 "Sustainable Building" and WP#5 "Urban Climate"*

##### Session #3: How to promote sustainable neighbourhood development in the context of sustainable urban transformation?

- ✓ *led by WP#3 "Sustainable Neighbourhoods" and WP#6 "Sustainable Urban Transformation"*

#### 16:45-17:00: Presentation of Results from Breakout Sessions (each 5 Min)

#### 17:00-17:15: Next Steps, Wrapping-up and Closing of the Build4People Research Conference

- ✓ *Dr Michael Waibel, Build4People project consortium representative*
- ✓ *HE Nuon Pharat, Vice Governor of Phnom Penh Capital Administration*



# Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

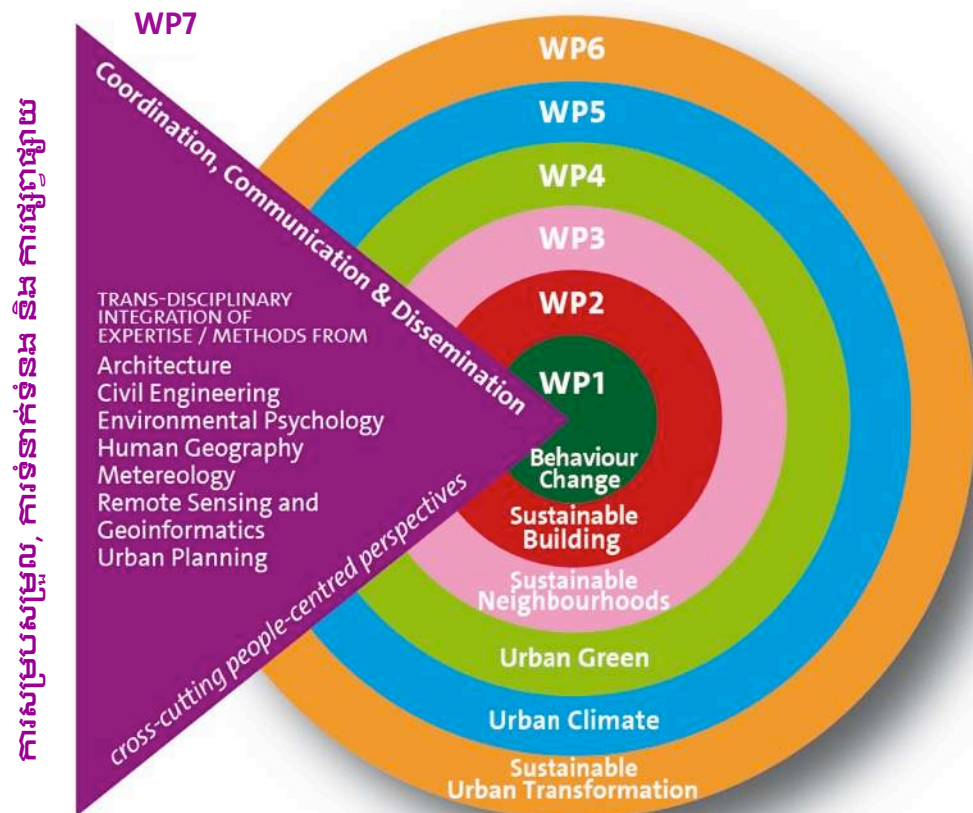
**គម្រោងសាងសង់សម្រាប់ប្រជាជន**  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

IMP 2025-2027

**Federal Ministry  
of Education  
and Research**

**FONA**  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT



Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG

## Work Package #6



CIUS  
CAMBODIAN INSTITUTE FOR URBAN STUDIES

## Management Partner



OTTO VON GUERICKE  
UNIVERSITÄT  
MAGDEBURG

## Work Package #1



**University of Stuttgart**  
Germany

## Work Package #2

**EBLE MESSERSCHMIDT PARTNER**  
Architekten und Stadtplaner PartGmbH

## Work Package #3



Eberswalde University  
for Sustainable  
Development

## Work Package #4

**INKEK** institute for  
climate and  
energy strategies

## Work Package #5

 Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Department of Geography  
Dr. Michael Waibel

## Funding volume

- 3.17 mill. Euro (total, including own investments)
- 2.95 mill. Euro (BMBF funding total)
- 1.40 mill. Euro (funding of Hamburg University)

**EUROCHAM**  
CAMBODIA

META HOUSE  
PHNOM PENH  
GOETHE-ZENTRUM  
KOOPERATIONSPARTNER

 **មជ្ឈមណ្ឌលខេមរសិក្សា**  
**Center for Khmer Studies**  
**Centre d'Études Khmères**



**DGM**  
VON ZADOW  
INTERNATIONAL



UNEP  
environment  
programme



Global Alliance  
for Buildings and  
Construction

lead

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

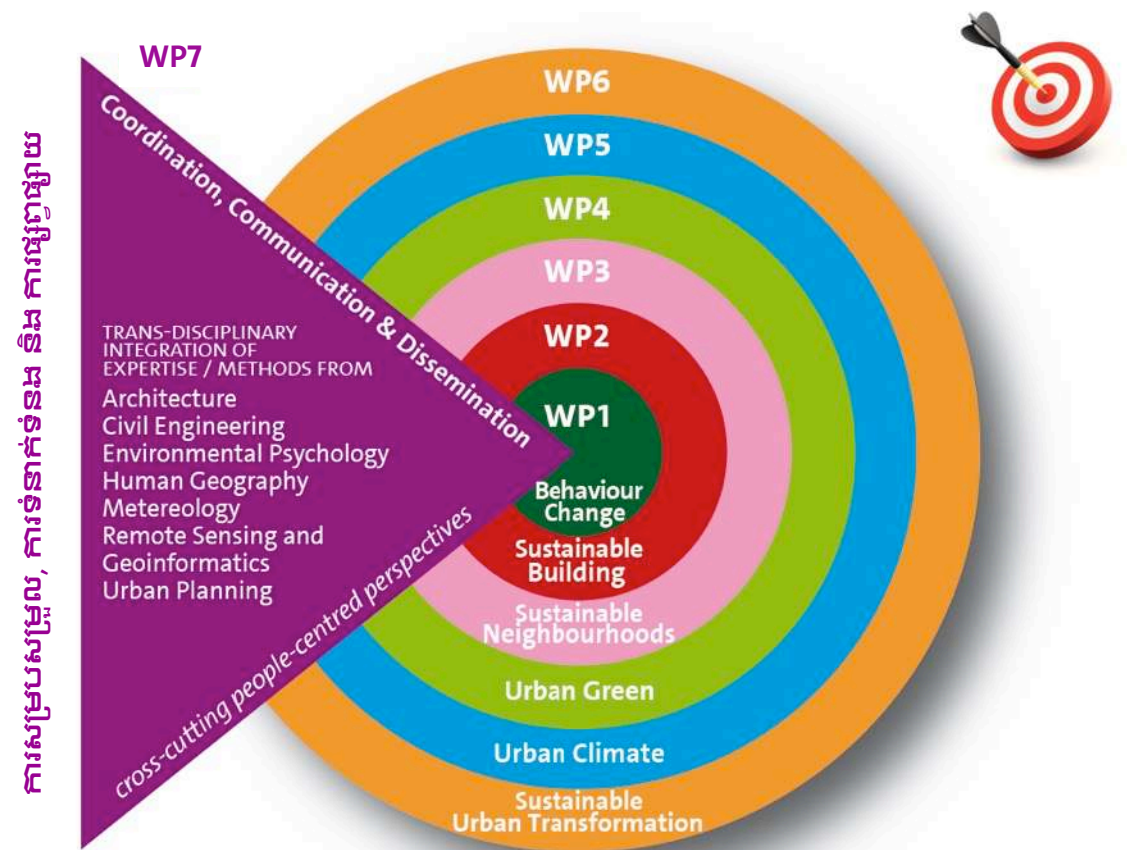
SPONSORED BY THE



Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT



## Work Packages កញ្ចប់ការងារ

**WP1: Behaviour Change**  
ការផ្លាស់ប្តូរឥរិយាបថ



**WP2: Sustainable Building**  
អគារដែលមាននិរន្តរភាព



**WP3: Sust. Neighbourhoods**  
សហគមន៍ដែលមានចីរភាព



**WP4: Urban Green**  
ទីក្រុងបៃតង



**WP5: Urban Climate**  
អាកាសធាតុទីក្រុង



**WP6: Sust. Urb. Transformation**  
ការផ្លាស់ប្តូរទីក្រុងដោយនិរន្តរភាព



➤ The Build4People project follows a people-led, cross-cutting and transdisciplinary approach

### Research Partners



### Implementation Partners



### Dissemination Partners



# Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

**គម្រោងសាងសង់សម្រាប់ប្រជាជន**  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

IMP 2025-2027

Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability

SPONSORED BY THE

**FONA**  
Research for sustainability

Federal Ministry of Education and Research

**CHN-012 IMECOGIP**  
Green Infrastructure planning for resilient urban development

**CHN-031 URA**  
Transformation to sustainable urban-rural economies

**SEA2-010 Emplement**  
Empowering Urban Regions for cooperative, synergistic and practical implementation of sustainability

**SEA2-035 GreenCityLabHue**  
Strengthening Climate Resilience of Urban Regions in Central Vietnam

**SEA2-029 MyRisk**  
Management of risks during extreme events

**SEA2-018 PolyUrbWater**  
Polycentric Approaches to the Management of Urban Water Resources

**SEA2-006 CHARMS**  
Sustainable urban development in Chiang Mai's historic quarters

**SEA2-014 LIRLAP**  
Linking disaster risk governance and landuse planning

**SEA2-004 FloodAdaptVN**  
Ecosystem-based approaches to flood risk management

**SEA2-012 Build4People**  
Sustainable buildings for people

Sustainable Development  
of Urban Regions



The **Build4People** project based in Phnom Penh is part of a larger long-term funding initiative **SURE Sustainable Development of Urban Regions**, sponsored by BMBF



**EUROCHAM**  
CAMBODIA

META HOUSE  
PHNOM PENH  
GOETHE-ZENTRUM  
KOOPERATIONSPARTNER

 **មជ្ឈមណ្ឌលខេមរសិក្សា**  
**Center for Khmer Studies**  
**Centre d'Études Khmères**



**DGM**  
VON ZADOW  
INTERNATIONAL



UNEP  
environment  
programme



Global Alliance  
for Buildings and  
Construction



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT



## Rationale and Background

- Long tradition of vernacular architecture <-> modern practices
- Vivid economic activities
- Modern consumer society -> more resource-intensive life-styles
- Electricity consumption per capita has sharply risen
- Car boom, particularly of SUV- and Jeep types
- Spatially isolated residential enclaves, mostly in the suburbs
- Doubling of the urban population in Cambodia expected by 2030 according to EuroCham
- 50% of the buildings with long-lasting sustainability impacts that will be standing in Cambodia in 2050 have not been built yet
- **Unique window of opportunity to tackle sustainable buildings and sustainable urbanization**



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT

### Rationale of Research & Development Phase

*“Sustainable Urban Transformation is not only a technological challenge but also a social, cultural, economic and political one”. (Rohracher, 2001; Rink et al., 2018)*

### General Approach

- ✓ Systemic to support a transition process
  - ✓ People-led
  - ✓ Cross-cutting
  - ✓ Trans-disciplinary
  - ✓ Action research
  - ✓ Integrated urban development
- **The aim is support a more sustainable urban transformation pathway by means of interventions and action research**

DEF 2019-2021

R&D 2021-2025

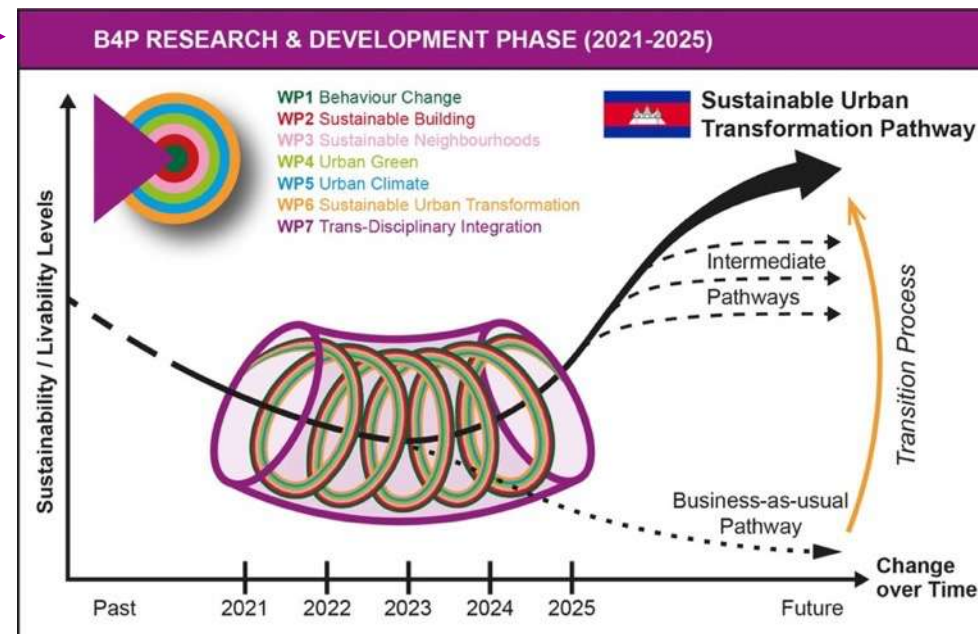
IMP 2025-2027

SPONSORED BY THE



**FONA**  
Research for sustainability

Figure: The overall aim of the Build4People Project (ideal scenario)



Source: Own design.



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027



## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Build4People’s Sustainable Urban Transformation Approach

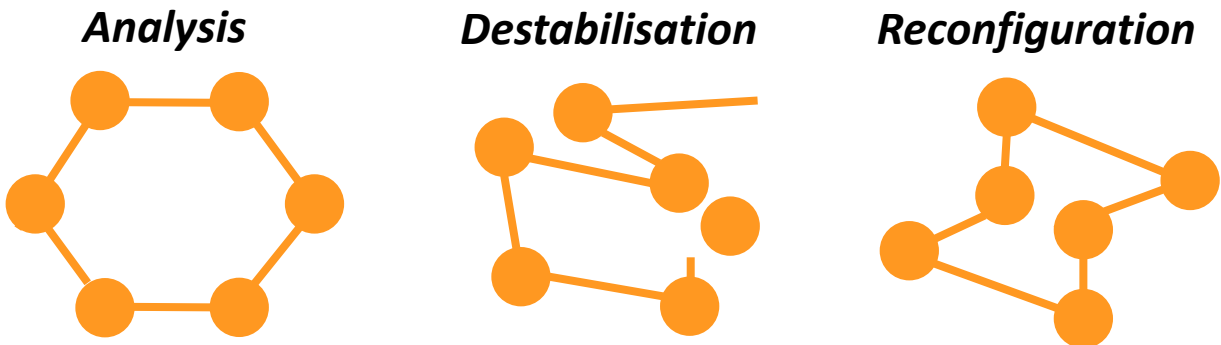
Transition Management Instruments

Ecocity Transition Lab

Sustainable Building Incubator

Sustainable Building Arena

[...]



Phnom Penh’s shift towards a more sustainable and liveable reconfiguration of its urban development regime

Transition Management Approaches

Co-Design

Facilitation of Experiments

[...]

Capacity Development

Strategic Niche Management

Source: Own design based on Geels 2002.

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

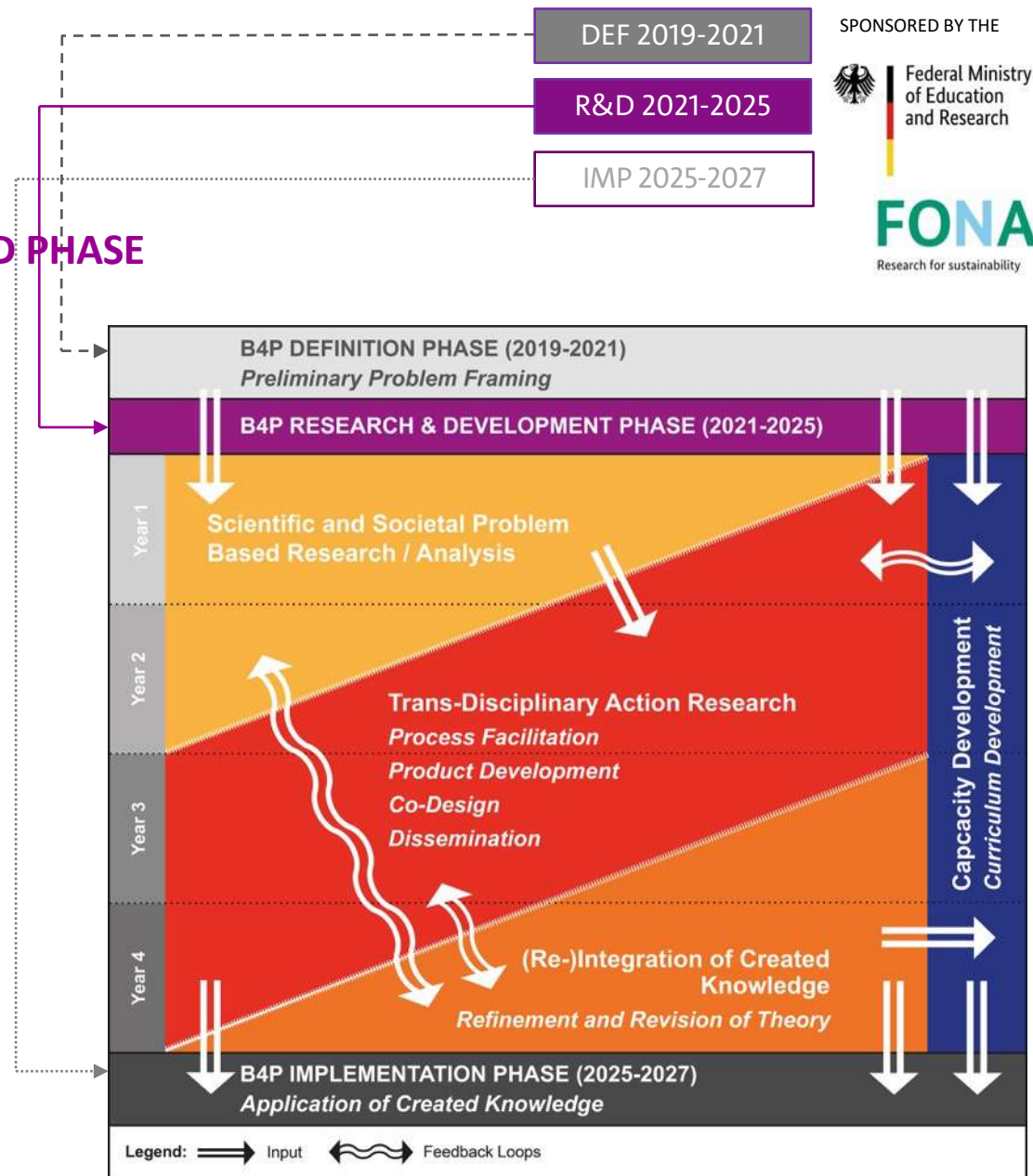
## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Build4People Research Design

The design of the B4P RD phase consists of three overlapping spheres based on renowned trans-disciplinary research approaches in sustainability science. (Lang et al., 2012; Noboa, 2019)

- 1) Analytical phase: Societal and scientific problem-based research,
- 2) Transdisciplinary action research, and
- 3) Concluding phase of reflection, refinement & re-integration of created knowledge.

➤ **State of the art approach based upon an intricate three-phase research design**



Source: Own design based on Lang et al. (2012: p. 28).



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

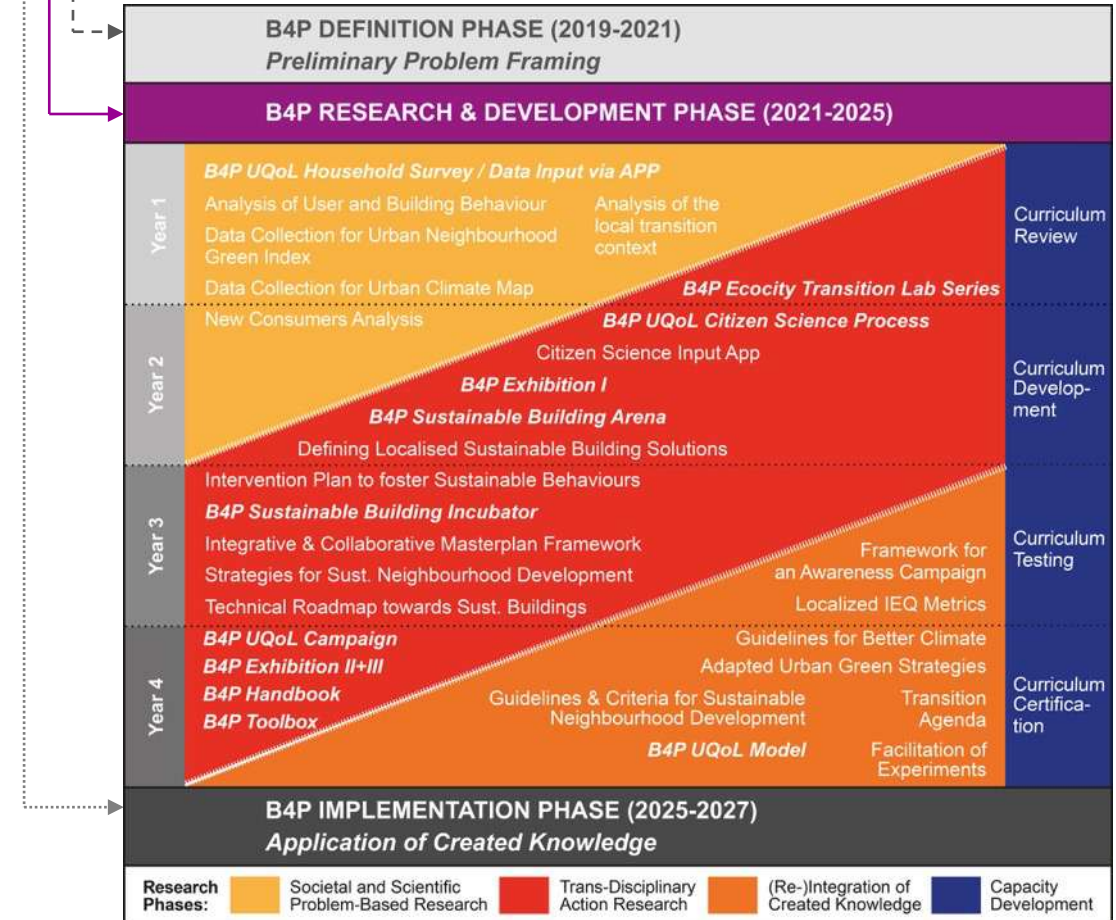
Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Build4People Research Design

- ✓ Methods, tools and key instruments to achieve the objectives of the RD phase are collaborative planning workshops, strategic niche management approaches, transition management approaches and subsequent experimental implementation.
- ✓ All of these measures will generate *actionable knowledge* for local stakeholders and a basis for *evidence-based decision-making*.
- **Comprehensive transdisciplinary research and added value can best be achieved through the design of *joint* activities and products**



Source: Own design.



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

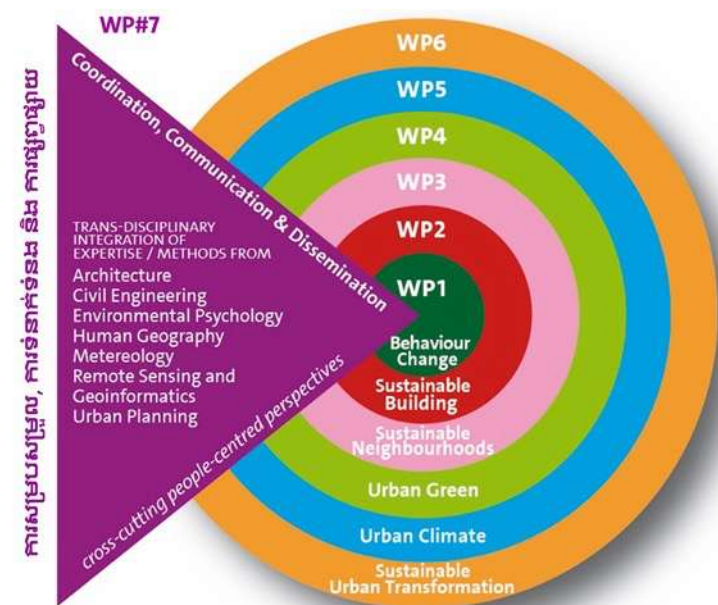
IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Capacity development activities: Curriculum Development at our research partners



## 1st BUILD4PEOPLE CURRICULUM DEVELOPMENT SUMMIT MEETING

Virtual, 04 March 2021

**Build4People Consortium**

Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG

CIUS  
CARL LUDWIG FRIEDRICH INSTITUTE FOR URBAN STUDIES

OTTO VON GUERICKE  
UNIVERSITÄT  
MAGDEBURG

University of Stuttgart  
Germany

INKEK  
Institute for climate and energy strategies

Eberswalde University  
for Sustainable  
Development

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

**Build4People Project**  
Enhancing Quality of Urban Life through Sustainable Urban Transformation in Cambodia

DEF 2019-2021  
R&D 2021-2025  
IMP 2025-2027

SPONSORED BY THE

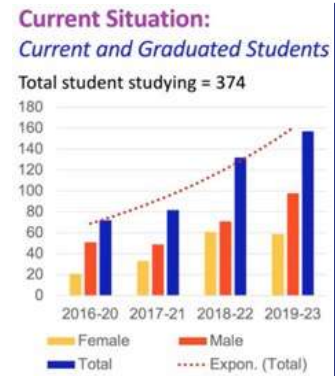
Examples of EU Erasmus+ or DAAD Funding cooperation within Asia and especially South-East Asia

- B.Sc. Program at RUA : "Land Management and Land Administration"
- online M.Sc. Program: "GeoS4S" in China and Thailand (Erasmus+ Funding)  
moodle address: <https://geos4s.moodlecloud.com/login/index.php>
- Online; M.Sc. Program: "BioEcon" in Vietnam (Erasmus+ Funding)  
moodle address: <http://moodlebioecon.eu/>
- TranSEA program: "Transformation for a Sustainable Future in South-East-Asia" (DAAD long term funding at HNEE), Cambodia, Myanmar, Vietnam, Thailand

countries involved

Co-funded by the Erasmus+ Programme of the European Union

DAAD



Curriculum Review

Curriculum Development

Curriculum Testing

Curriculum Certification

**Research Partners**

**Sustainable Urban Transformation Planning**  
Session #1: Course Overview

**Course Unit**  
SUSTAINABLE URBAN TRANSFORMATION PLANNING  
prepared by Build4People WP#6

Course Overview

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Interim Conclusion

#### *Analysing and supporting a sustainable urban transformation in Phnom Penh*

- The entry points for Build4People’s research are the building and neighbourhood planning sectors.
- Sustainable urban transformation will be encountered by a systemic and cross-cutting approach.
- Supporting the shift from technocratic top-down decision-making based on designing urban master plans to a planning culture which is more integrated, people-led and rather understood as a process and dialogue.

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Interim Conclusion

#### *Analysing and supporting a sustainable urban transformation in Phnom Penh*

- The entry points for Build4People’s research are the building and neighbourhood planning sectors.
- Sustainable urban transformation will be encountered by a systemic and cross-cutting approach.
- Supporting the shift from technocratic top-down decision-making based on designing urban master plans to a planning culture which is more integrated, people-led and rather understood as a process and dialogue.
- Transdisciplinary integration is achieved by embedding the different scientific disciplines and stakeholders from the spheres of state, economy and civil society into joint formats and joint tangible products.
- Build4People’s overall normative aim is to improve people’s subjectively perceived urban quality of life while matching objective urban sustainability criteria
- To maximize impacts, Build4People’s approach will be actively communicated, disseminated and made visible.

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



**FONA**  
Research for sustainability

## GENERAL APPROACHES OF THE BUILD4PEOPLE PROJECT DURING RD PHASE

### Interim Conclusion

#### *Analysing and supporting a sustainable urban transformation in Phnom Penh*

- The entry points for Build4People's research are the building and neighbourhood planning sectors.
- Sustainable urban transformation will be encountered by a systemic and cross-cutting approach.
- Supporting the shift from technocratic top-down decision-making based on designing urban master plans to a planning culture which is more integrated, people-led and rather understood as a process and dialogue.
- Transdisciplinary integration is achieved by embedding the different scientific disciplines and stakeholders from the spheres of state, economy and civil society into joint formats and joint tangible products.
- Build4People's overall normative aim is to improve people's subjectively perceived urban quality of life while matching objective urban sustainability criteria
- To maximize impacts, Build4People's approach will be actively communicated, disseminated and made visible.
- **Successful multi- and transdisciplinary research is a matter of intensive time-consumptive exchange and of personal dedication of all parties involved!**



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

#### 14:00-14:30: Greeting Words

- ✓ *Dr Heike Bauer, DLR, representative of German funding agency*



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

#### 14:00-14:30: Greeting Words

- ✓ *Mr. Christian Berger, Ambassador of the Federal Republic of Germany in the Royal Kingdom of Cambodia*



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

14:00-14:30: Greeting Words

- ✓ HE Nuon Pharat, Vice Governor of Phnom Penh Capital Administration



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

14:30-14:35: Group Photo



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

14:35-14:40: Video Clip of Build4People Ecocity Transition Lab with PPCA in March 2020

Ecocity Transition Lab  
01-06 March 2020, Phnom Penh

**BLUE GREEN CITY**  
*Let the nature flow*

Land Use Plan  
Phnom Penh - Chbar Ampov

EBT MISSENTHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

Urban Business  
City Scale + Functional (pink)  
Residential + Social  
Green Public Space (park, garden)  
Water Corridor (canal, river)  
Waterfront City  
Waterfront (canal, river)

Build4People Project: Ecocity Transition Lab at Phnom Penh City Hall, March 2020

2,963 views · Apr 10, 2020

16 0 SHARE SAVE ...



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

#### 14:40-14:55: Envisaged activities of the Build4People–PPCA cooperation

- ✓ *Rolf Messerschmidt, CEO of Eble Messerschmidt Partner / Leader of Build4People WP#3 “Sustainable Neighbourhoods”*
- ✓ *Dr Tep Makathy, General Director of Cambodian Institute of Urban Studies (CIUS) / Project Management Partner of Build4People WP#7 “Coordination, Communication and Dissemination” / as Dean of School of Architecture and Urban Planning at Paññāsāstra University of Cambodia also Research Partner of WP#3 “Sustainable Neighbourhoods”*

#### 14:55-15:05: Q&A



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021  
R&D 2021-2025  
IMP 2025-2027

SPONSORED BY THE  
Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

CIUS  
CAMBODIAN INSTITUTE FOR URBAN STUDIES



DGNB  
Deutsche Gesellschaft für Nachhaltiges Bauen  
German Sustainable Building Council



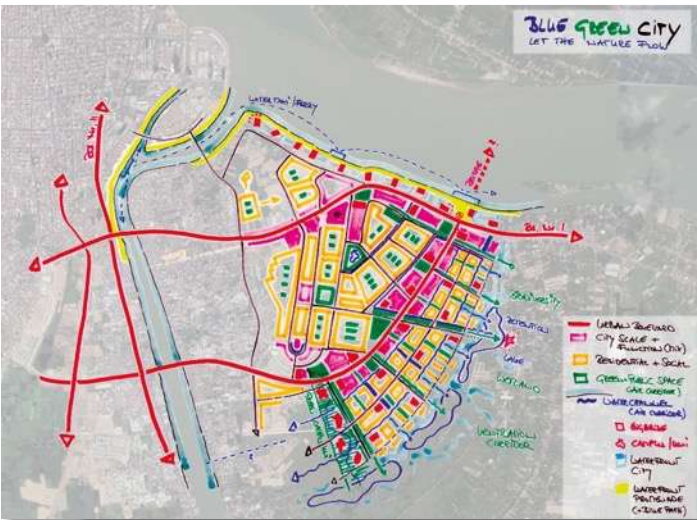
VON ZADOW  
INTERNATIONAL

## Envisaged Activities of the Build4People–PPCA Cooperation

Rolf Messerschmidt, CEO of Eble Messerschmidt Partner /  
Leader of Build4People WP#3 “Sustainable Neighbourhoods”

Dr Tep Makathy, Cambodian Institute of Urban Studies (CIUS)

## WP3: Sustainable Neighbourhoods សហគមន៍ដែលមានចីរភាព



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

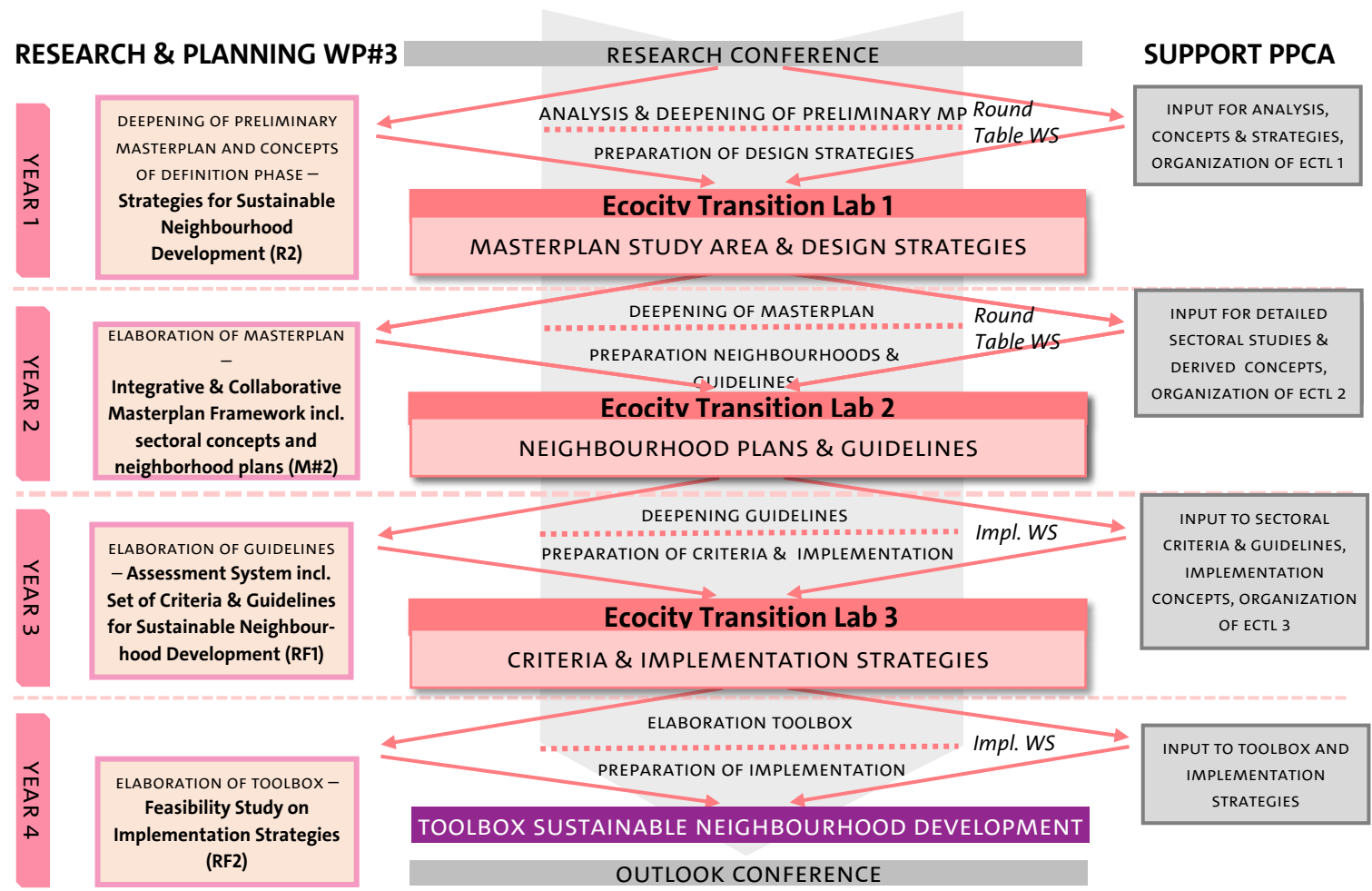
DEF 2019-2021  
R&D 2021-2025  
IMP 2025-2027

SPONSORED BY THE  
Federal Ministry  
of Education  
and Research  
FONA  
Research for sustainability

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH



## Envisaged Activities of the Build4People–PPCA Cooperation



### Main WP3 Activities and Outcomes:

- “B4P Ecocity Transition Labs” as a transdisciplinary planning and participation methodology
- “Integrative & Collaborative Masterplan Framework” for the Chbar Ampov District
- “Toolbox Sustainable Neighbourhood Development” incl. strategies, guidelines and criteria, as well as implementation strategies
- Further conceptualization of an **assessment system for sustainable neighborhoods** incl. criteria and indicators for early project stages

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

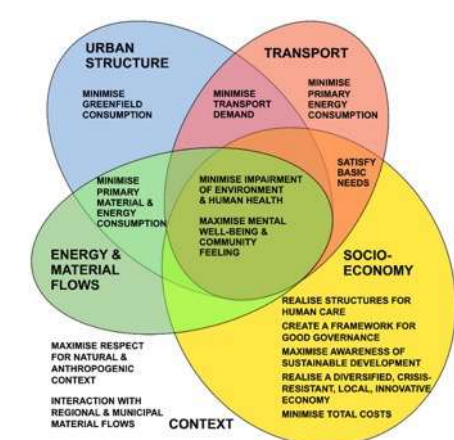
SPONSORED BY THE


 Federal Ministry  
of Education  
and Research

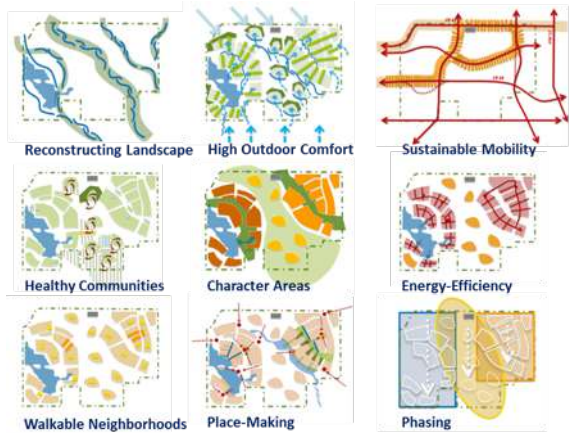

 FONA  
Research for sustainability

## Research Methodology of WP3 on “Sustainable Neighbourhoods”

- Introduction of **integrative, collaborative and participatory masterplanning strategies** to support Phnom Penh’s sustainable planning and development efforts, taking Chbar Ampov as a case study for the Eco-City Transition lab, to foster the sustainability performance of neighbourhoods.
- Application of **multi-layered neighborhood development** based on involved WPs of the transdisciplinary B4P-project approach
- Transfer and adaptation of **assessment criteria for sustainable urban districts** from the international rating system of the DGNB



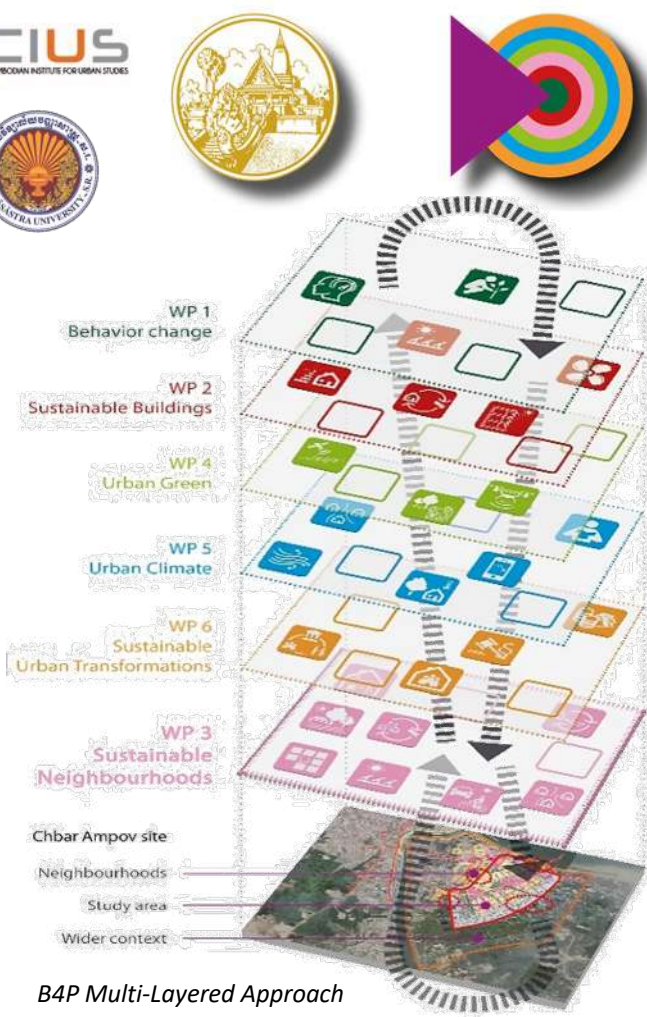
Source: EU Project Ecocity



Source: Integration Plan-UMore Park Minneapolis, EMP

Environmental Quality	Economic Quality	Sociocultural and Functional Quality	Technical Quality	Process Quality
<ul style="list-style-type: none"> <li>• (LCA) Life Cycle Assessment</li> <li>• Urban Climate</li> <li>• Environmental Risks</li> <li>• Water Cycle</li> <li>• Land Use</li> <li>• Biodiversity</li> </ul>	<ul style="list-style-type: none"> <li>• (LCC) Life Cycle Costs</li> <li>• Resilience and Adaptability</li> <li>• Land Use Efficiency</li> <li>• Value Stability</li> </ul>	<ul style="list-style-type: none"> <li>• Micro Climate- Thermal Comfort in Open Spaces</li> <li>• Open Space</li> <li>• Emissions/ Immissions</li> <li>• Accessibility</li> <li>• Urban Design</li> <li>• Social and Functional Mix</li> <li>• Social and Commercial Infrastructure</li> </ul>	<ul style="list-style-type: none"> <li>• Energy Infrastructure</li> <li>• Resource Management</li> <li>• Smart Infrastructure</li> <li>• Mobility Infrastructure - Motorised Transportation</li> <li>• Mobility Infrastructure - Pedestrians and Cyclists</li> </ul>	<ul style="list-style-type: none"> <li>• Integral Planning</li> <li>• Participation</li> <li>• Project Management</li> <li>• Governance</li> <li>• Construction Process</li> <li>• Monitoring</li> </ul>

Source: German Sustainable Building Council DGNB



B4P Multi-Layered Approach



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

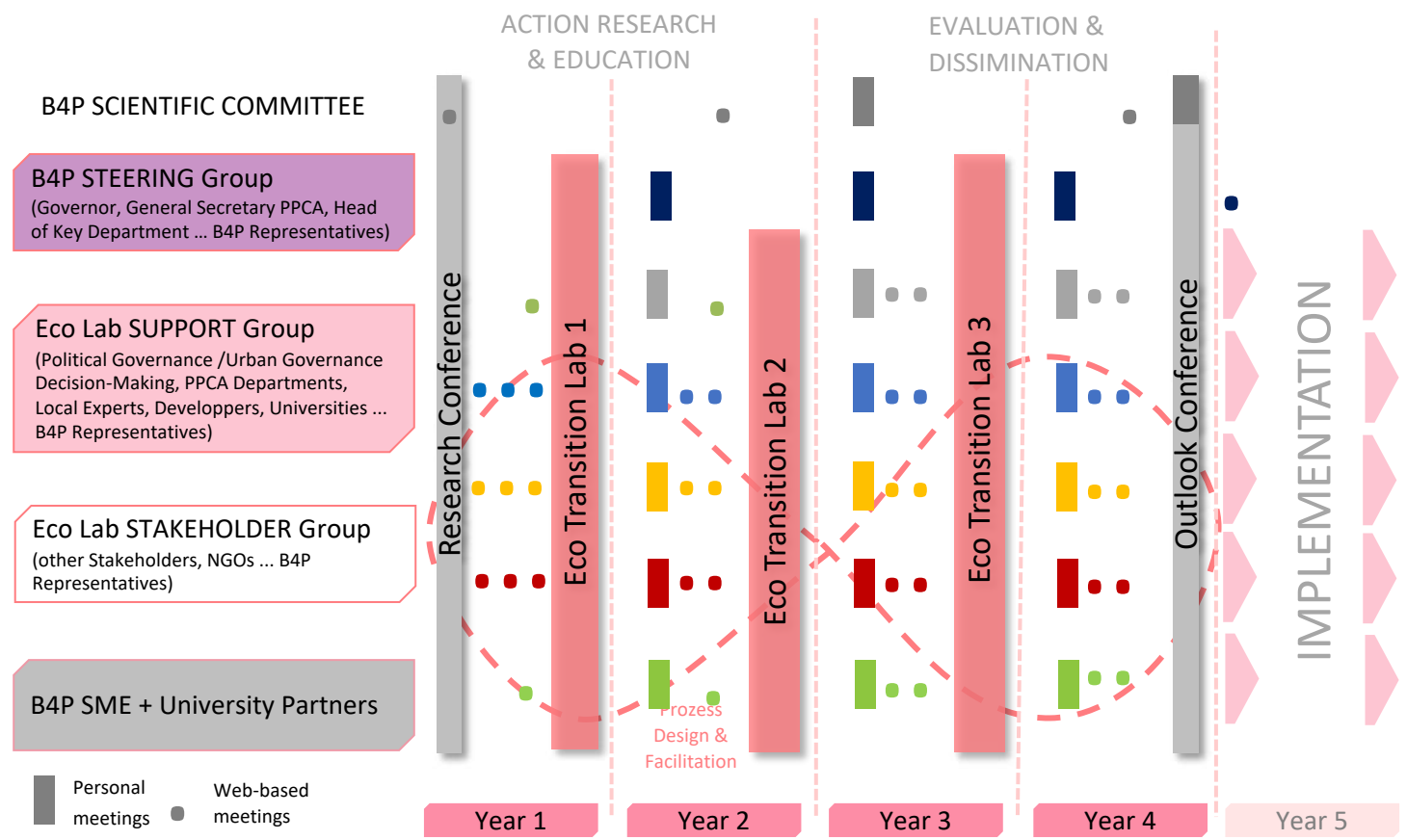
DEF 2019-2021  
R&D 2021-2025  
IMP 2025-2027

SPONSORED BY THE  
Federal Ministry  
of Education  
and Research  
FONA  
Research for sustainability

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH



## Activity 1: Organization of “Ecocity Transition Labs” as Trans-disciplinary Planning and Participation Methodology



### B4P Ecocity Transition Lab Series

- Objective is bringing together **key city departments and decision makers** of PPCA, the leading **private sector** developers, **professors and students** from Cambodia with **research and university partners** from Germany in order to **exchange concepts** and develop a **Sustainable Neighbourhood Strategy** on the CHBAR AMPOV case study area.
- **Preparation Process** with a three-fold focus: generate **inputs on the content**, establish **connection with contributors and participants**, develop **workshop-process-design**

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Activity 2: Integrative & Collaborative Masterplan Framework for Case Study Area in Khan Chbar Ampov



CIUS  
CAMBODIAN INSTITUTE FOR URBAN STUDIES



PANJAB UNIVERSITY







### Masterplan Development:

- **Deepening of Preliminary Masterplan** for exemplar eco-town development as a transdisciplinary planning product
- **Further Analysis of Study Area** and urban context
- **Further elaboration of Concepts from Ecocity Transition Lab** in Definition Phase on land-use, mobility, urban structure, landscape/urban green, water, energy, behavior change, urban transformation
- **CAD-Plan of preliminary Land-Use Plan**
- **CAD-3D-Model for preliminary Building Structure** (relevant to transdisciplinary work with WP5)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

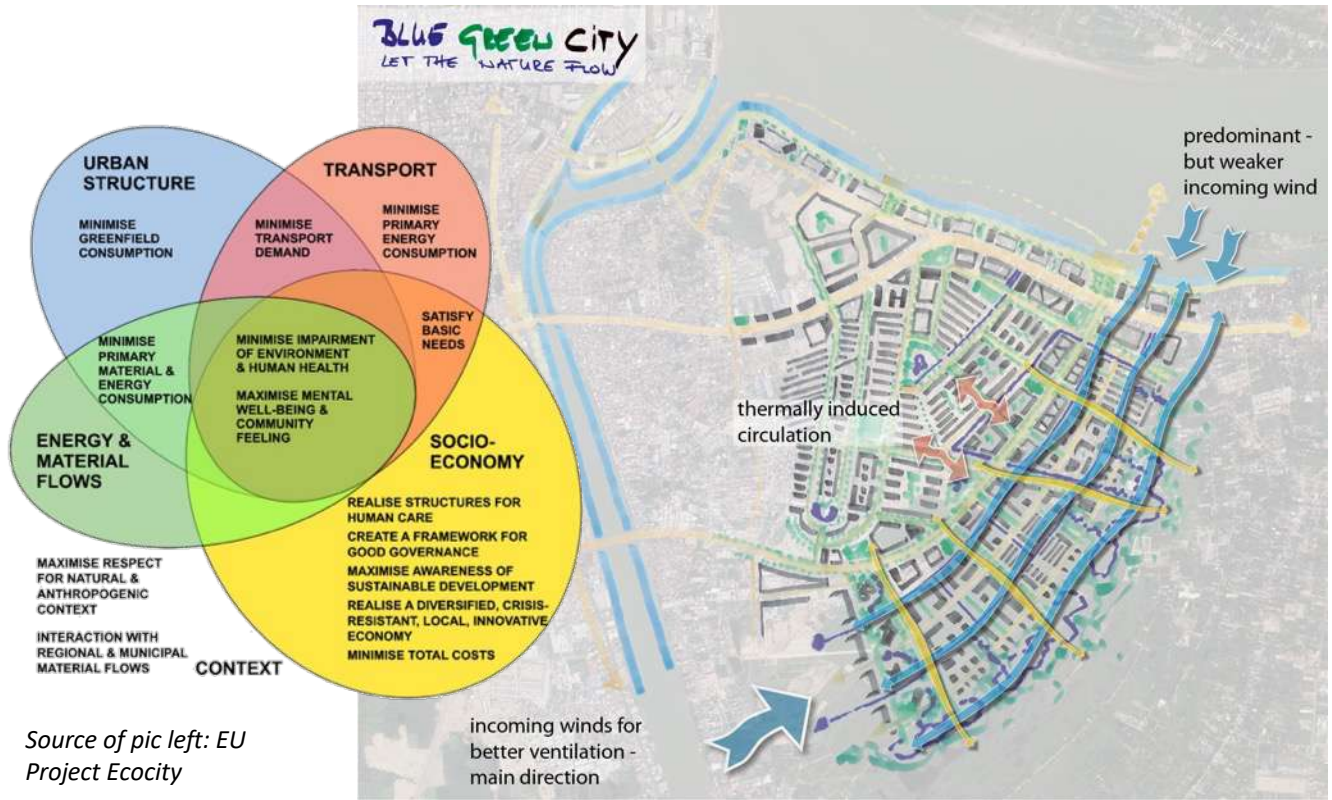
## Activity 3: Developing of Design Strategies for Sustainable Neighbourhood Development

  
CAMBODIAN INSTITUTE FOR URBAN STUDIES









### Design Strategies as a Contribution to the B4P Toolbox:

- Basis are **outcomes of Definition phase**, as well as contemporary **Scientific Approaches for Southeast Asia** and **European Research Projects** (such as the EU-funded Ecocity Project) and the adaptation to Cambodia
- Strategies and guidelines shall promote **Integrated and Improved Planning Processes for Sustainable Neighbourhoods**
- Elaboration along the development of the **Integrative Masterplan Framework** and discussion in **B4P Ecocity Transition Lab 1**, both referring to the study area in Chbar Ampov

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Next steps of the Build4People WP3-PPCA Cooperation

- **Preparation & organization of B4P Ecocity Transition Lab 1** with PPCA in monthly Web Meetings  
(in cooperation with CIUS, von Zadow International and WP7)
- **Setting-up of a Eco Lab Support Group and organization of monthly web meetings for Stakeholder Management** (PPCA, Khan administration, developers, experts, etc.)
- **Elaboration of Strategies for Sustainable Neighbourhood** for discussion and further development in the Ecocity Transition Lab 1 (with input from PPCA's experts / School of Architecture and Urban Planning/SAUP of PUC, and CIUS)



### RESEARCH & PLANNING WP#3

Year 1

Deepening of preliminary Masterplan and Concepts of Definition Phase – Strategies for Sustainable Neighbourhood Development (R2)



### SUPPORT PPCA

Input for analysis, concepts & strategies, Organisation of ECTL 1

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Next steps of the Build4People WP3-PPCA Cooperation

- **Collection of data and documents as a basis for the Masterplan Development** from PPCA on Phnom Penh city and the case study area Chbar Ampov (maps, studies, background information, ongoing projects, etc.)
- **Deepening of Preliminary Masterplan, further analysis of study area and further elaboration of Concepts from Ecocity Transition Lab** in Definition Phase (architecture students from SAUP and other universities shall be actively engaged in the planning process including supporting B4P international team to obtain and analyze data, as well as to learn from international experience in sustainable planning)



### RESEARCH & PLANNING WP#3

Year 1

Deepening of preliminary Masterplan and Concepts of Definition Phase – Strategies for Sustainable Neighbourhood Development (R2)

### Research Conference

Analysis & Deepening of preliminary MP  
Preparation of Design Strategies

### SUPPORT PPCA

Input for analysis, concepts & strategies, Organisation of ECTL 1

**Ecocity Transition Lab 1**  
Masterplan Study Area & Design Strategies

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

SPONSORED BY THE

 Federal Ministry  
of Education  
and Research

 FONA  
Research for sustainability

## Next steps of the Build4People WP3-PPCA Cooperation



# Q&A



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

15:05-15:20: Next steps of the Build4People-PPCA cooperation

- ✓ Vannak Seng, Chief of Administration of PPCA
- ✓ Martin Saram, PPCA Liaison to Build4People Project

15:20-15:30: Q&A



# Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

**គម្រោងសាងសង់សម្រាប់ប្រជាជន**  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

IMP 2025-2027

**Federal Ministry  
of Education  
and Research**

**FONA**  
Research for sustainability

## Part I: Kick-off Event with Phnom Penh Capital Administration



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part I: Kick-off Event with Phnom Penh Capital Administration

15:30-15:45: Coffee / Teak Break



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

#### 15:45-16:00: Build4People’s Approach towards Urban Quality of Life

- ✓ *Dr Michael Waibel, Build4People project consortium representative*
- ✓ *Dr Anke Blöbaum, Leader of Build4People WP#1 “Behaviour Change*



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life



- Urban quality of life as multiple-dimensional concept that brings together “physical, psychological, social and ecological aspects and takes into account both *subjectively* perceived well-being and *objective* conditions” (WBGU, 2016: 86).
- During Build4People’s research, we will jointly *conceptualize, measure* and *model* urban quality of life
- It serves as the *integrating link* for all of our scientific, conceptional, analytical and normative dimensions.

WBGU  
German Advisory Council on Global Change



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

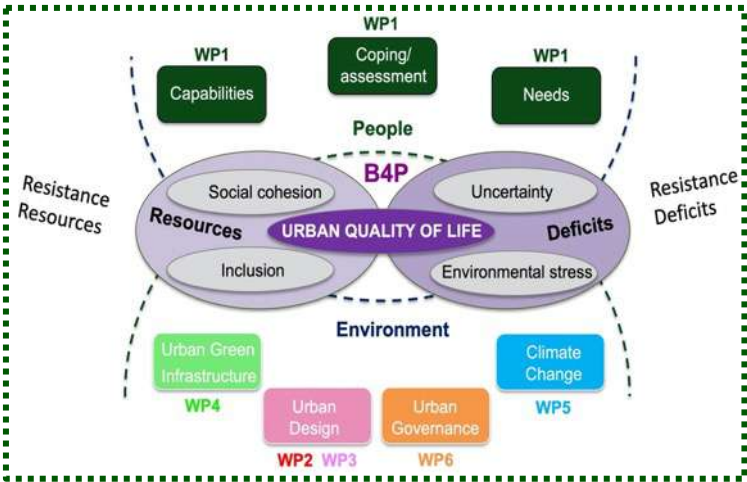
IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life



First conceptual framework of UQoL

- Urban quality of life as multiple-dimensional concept that brings together “physical, psychological, social and ecological aspects and takes into account both *subjectively* perceived well-being and *objective* conditions” (WBGU, 2016: 86).
- During Build4People’s research, we will jointly *conceptualize*, *measure* and *model* urban quality of life
- It serves as the *integrating link* for all of our scientific, conceptional, analytical and normative dimensions.
- Also, its often-ambiguous relationship to sustainability will be considered (Newton, 2012; Gough, 2015; Swilling et al., 2016)
- Raising awareness of the need to merge sustainable lifestyles and urban quality of life
- **Urban quality of life is considered to be the general foundation for Build4People’s people-driven approach**

WBGU  
German Advisory Council on Global Change

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People Urban Quality of Life Conceptualization Workshop

BUILD4PEOPLE PROJECT

CONSORTIUM LEADER

PROJECT MANAGEMENT PARTNER

INSPIRED BY

SPONSORED BY THE



Build4People

Urban Quality of Life Conceptualisation Workshop



WP#1



- On 26th of November 2020, the different work packages of the Build4People project team took part in a workshop to gain a deeper shared understanding of the concept of Urban Quality of Life (UQoL).
- The workshop was hosted by the Otto-von-Guericke University Magdeburg, WP1 “Behaviour Change” and prepared with support from WP4 “Urban Green” and WP7 “Coordination, Communication & Dissemination”.
- In summary, the workshop successfully brought together the previous research of the work packages and thus contributed to an initial conceptualization.
- Another Build4People UQoL Workshop is planned during the fourth quarter of 2021.

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

In accordance with the holistic approach of the Build4People project, it makes sense to approach Urban Quality of Life (UQoL) in two ways:

**Analytic, research approach**  
that asks for the relative  
impact of different factors on  
Urban Quality of Life



**Normative approach,**  
that understands  
sustainable transformation  
as an essential prerequisite for  
Urban Quality of Life.



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

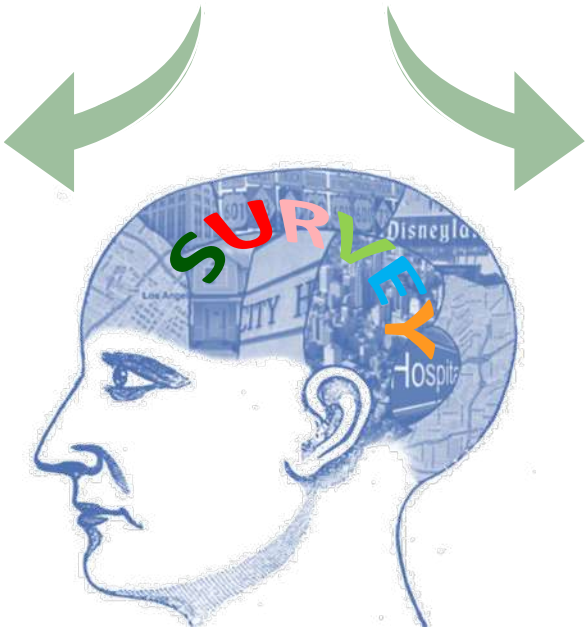
Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

In accordance with the holistic approach of the Build4People project, it makes sense to approach Urban Quality of Life (UQoL) in two ways:

**Analytic, research approach**  
that asks for the relative  
impact of different factors on  
Urban Quality of Life



**Normative approach,**  
that understands  
sustainable transformation  
as an essential prerequisite for  
Urban Quality of Life.



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

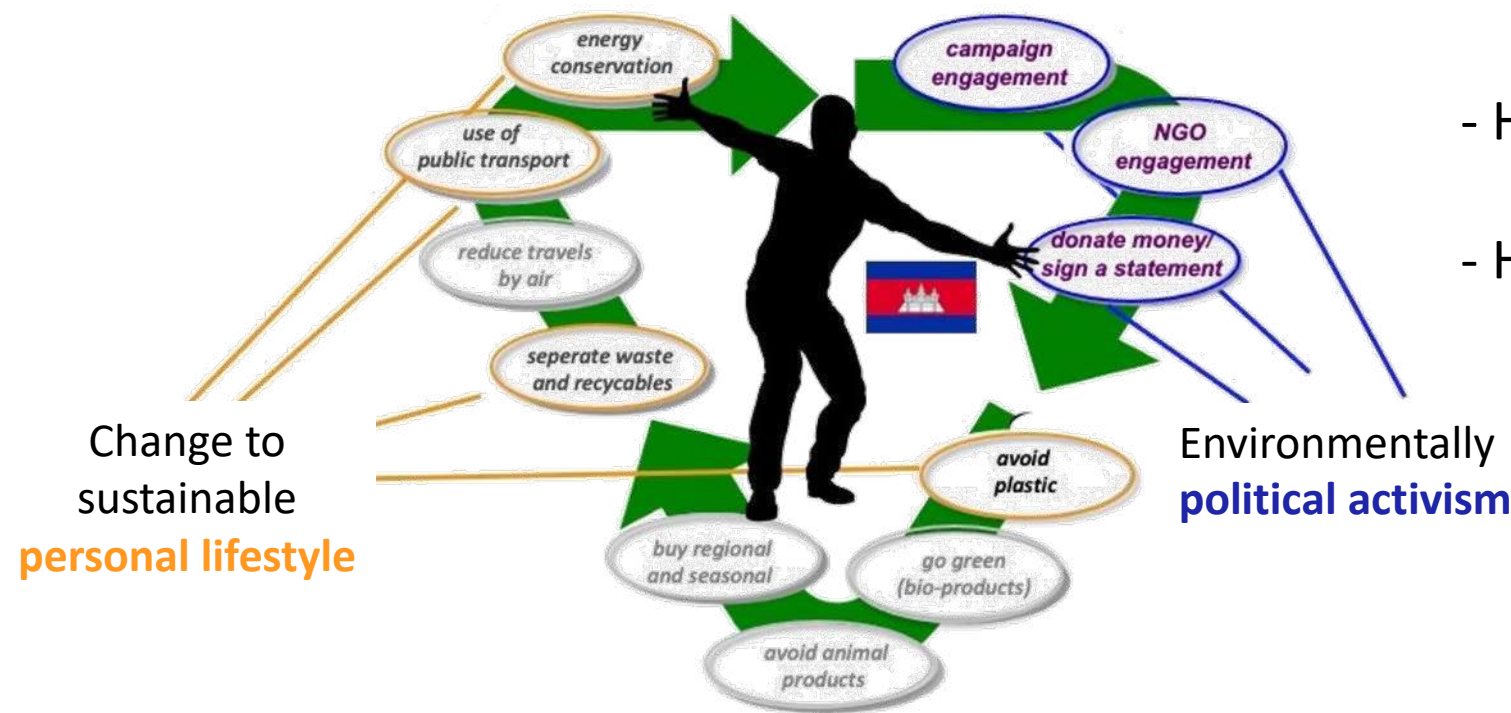
FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Normative approach

Items asking for pro-environmental norms, values, beliefs, and behaviours.

### Various facets of intended sustainable behaviour



- How to explain sustainable behaviours?
- How to trigger behaviour change?

Value Belief Norm Theory

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Value Belief Norm Theory

Explaining sustainable behaviour(s)



Source: Stern et al. (1999)



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

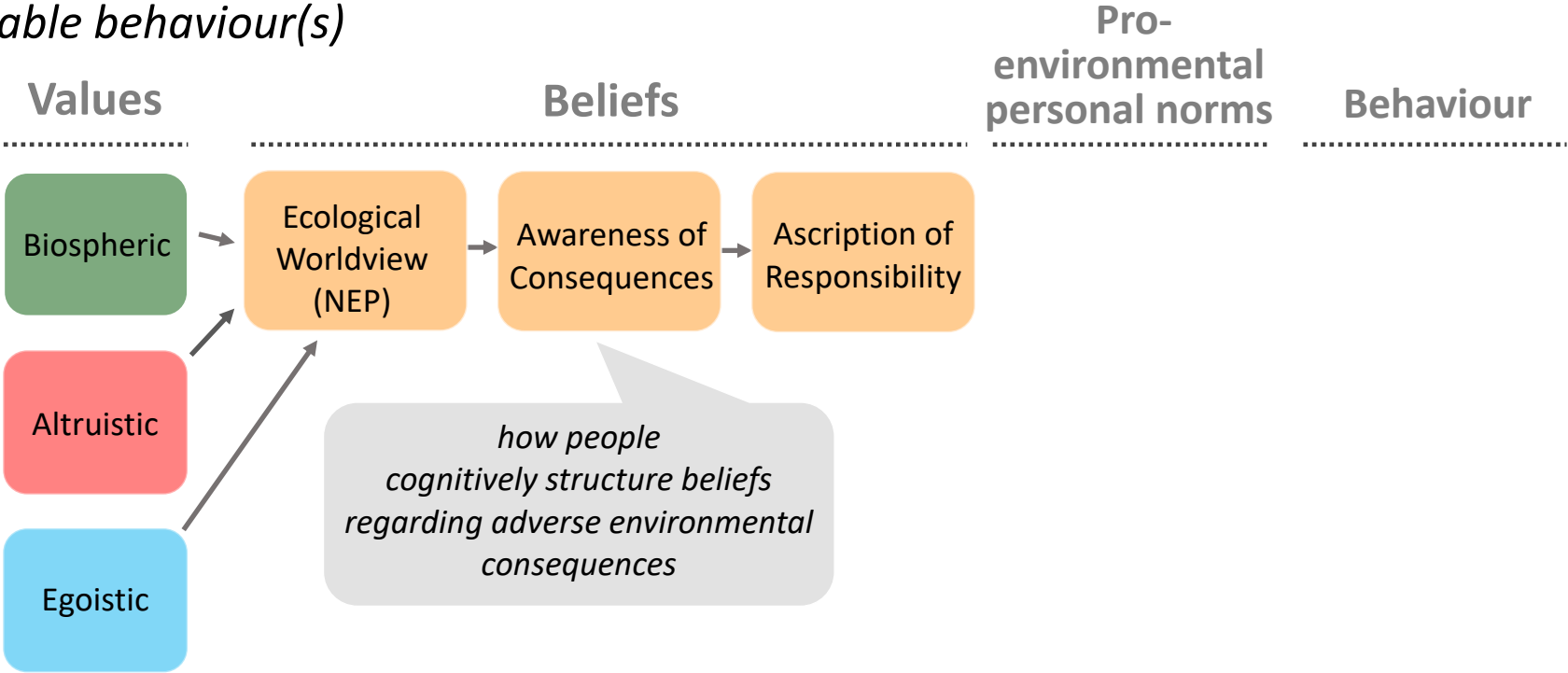
Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Value Belief Norm Theory

Explaining sustainable behaviour(s)



Source: Stern et al. (1999)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

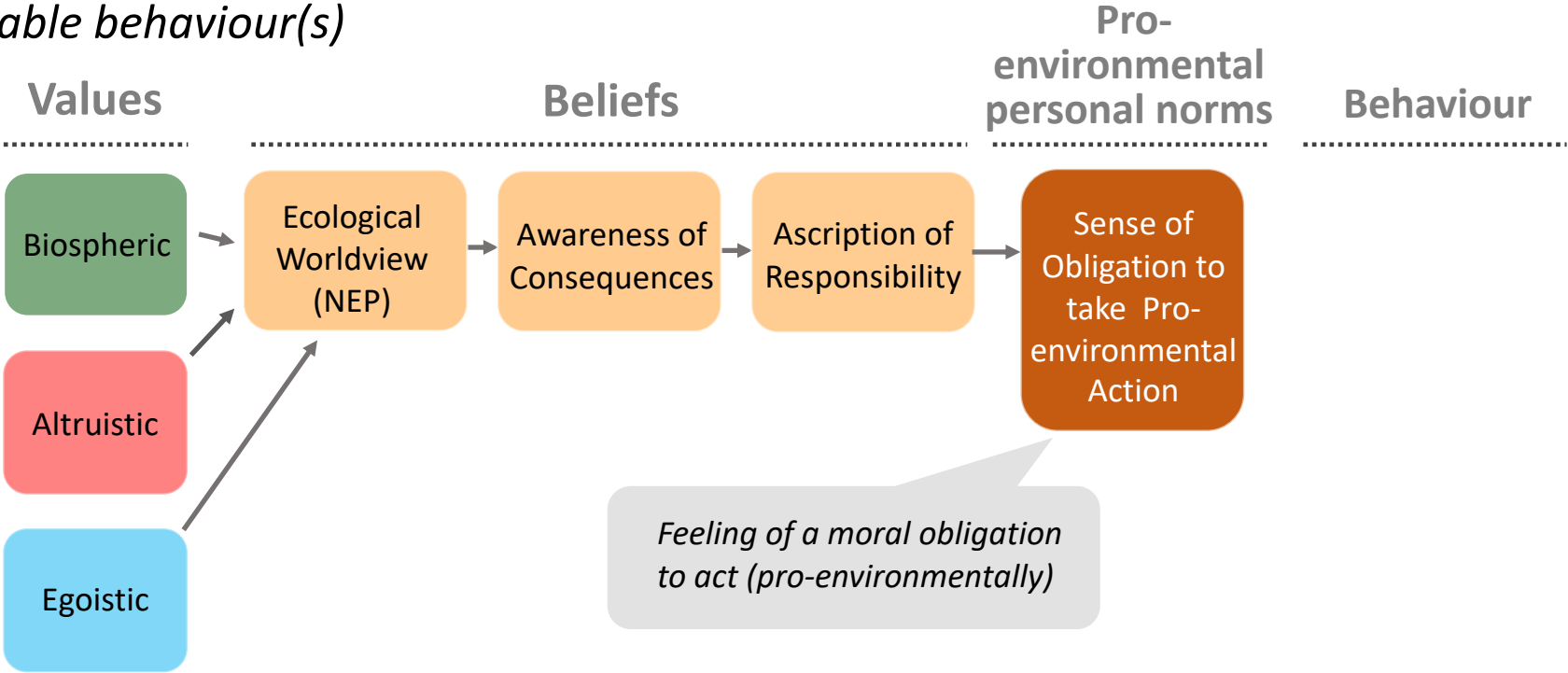
Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Value Belief Norm Theory

Explaining sustainable behaviour(s)



Source: Stern et al. (1999)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

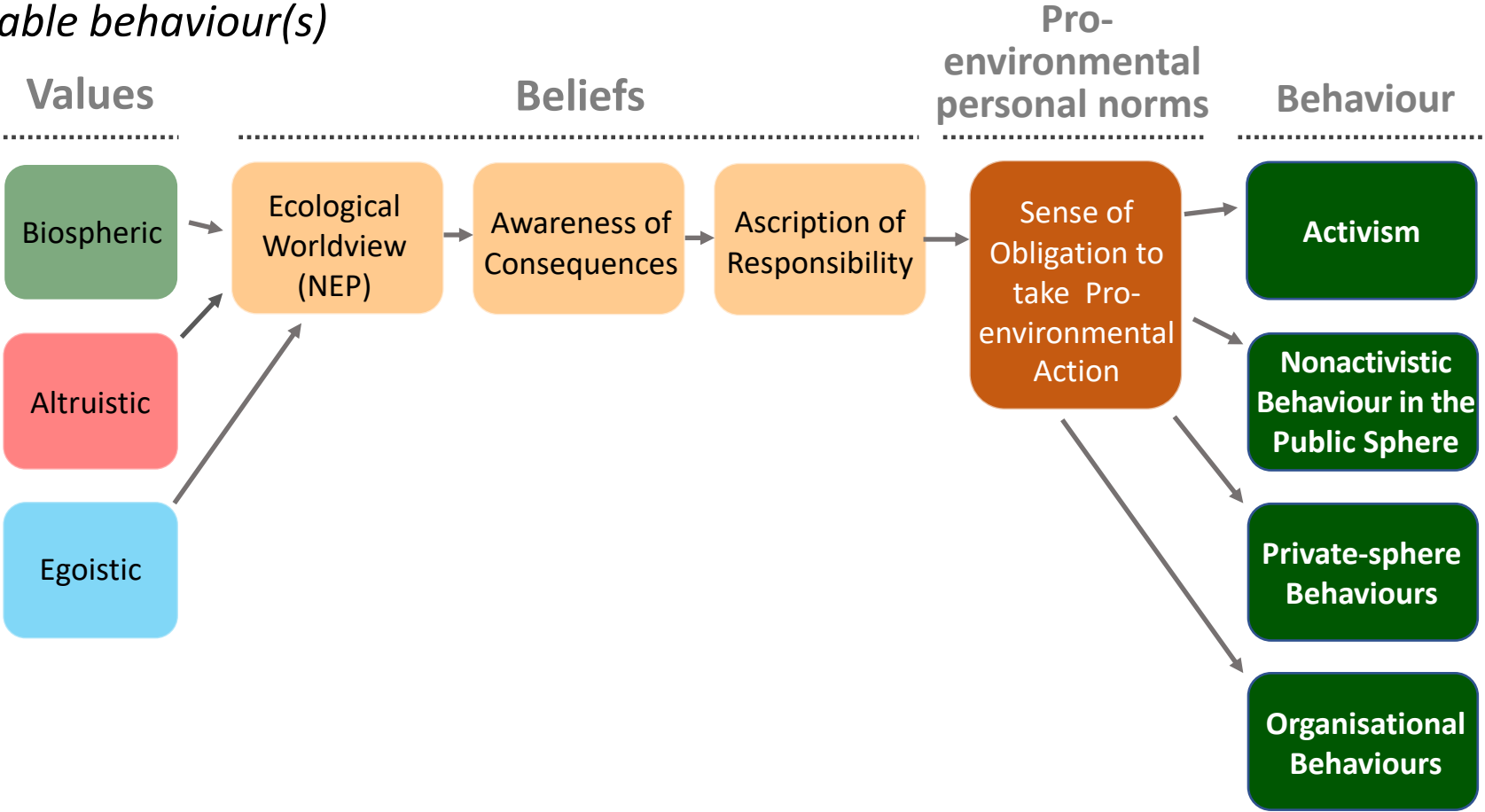
Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Value Belief Norm Theory

Explaining sustainable behaviour(s)



Source: Stern et al. (1999)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

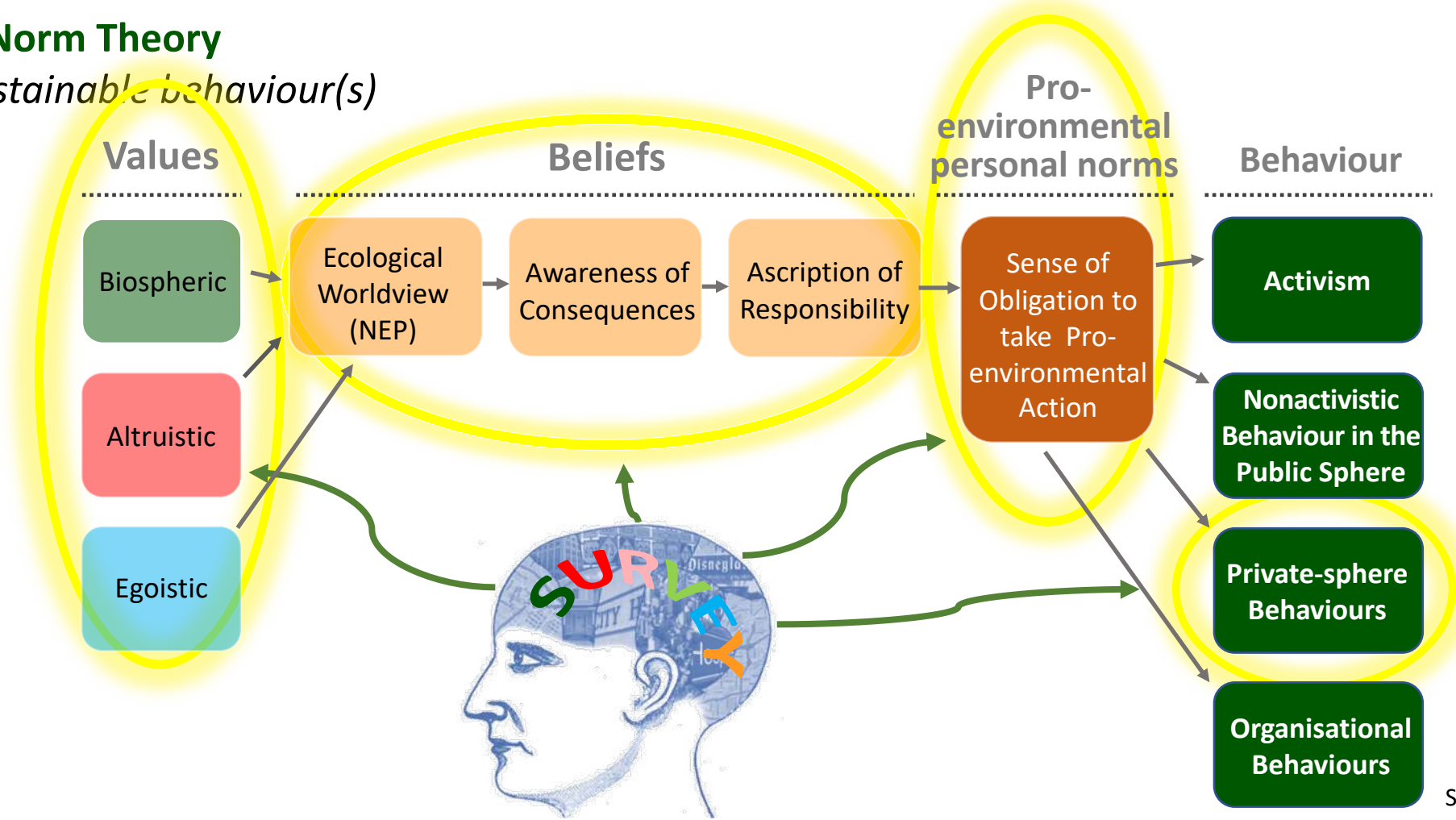
Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Value Belief Norm Theory

Explaining sustainable behaviour(s)



Source: Stern et al. (1999)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

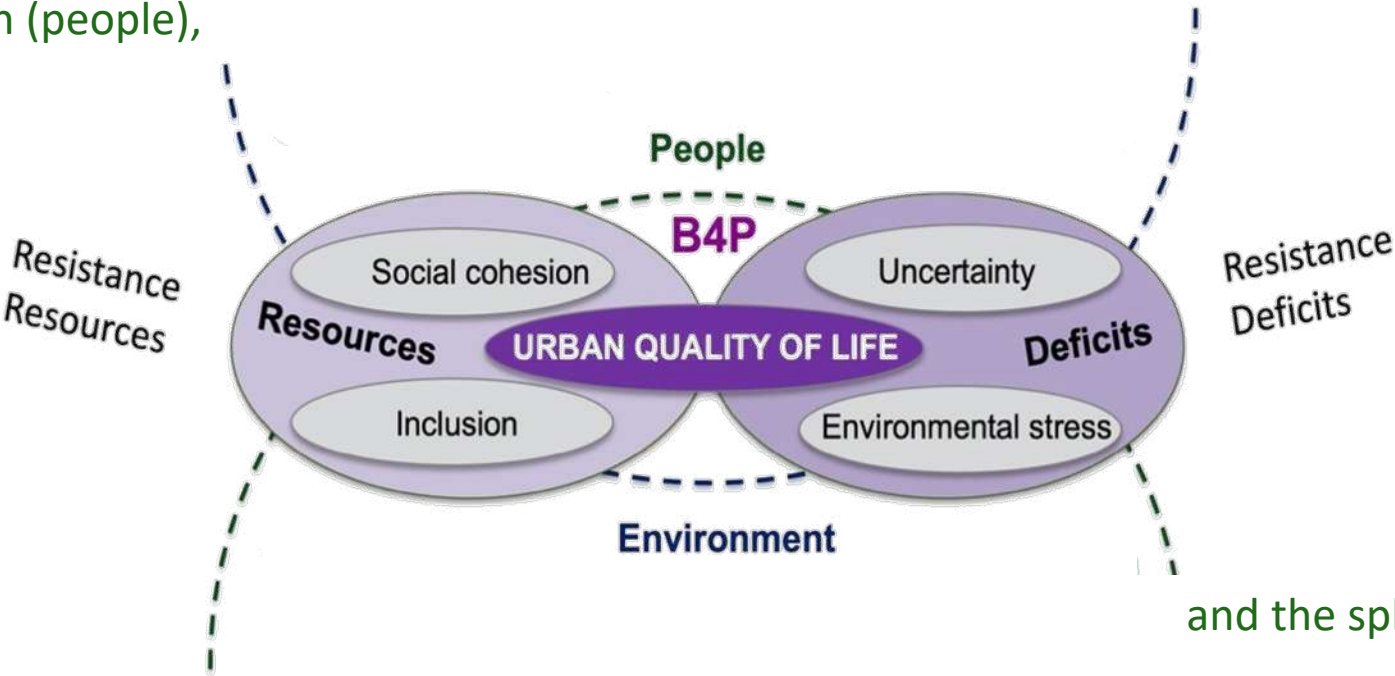
SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

**Analytic research approach**  
*Explaining Urban Quality of Life*  
**Two spheres of the context of UQoL:**  
the sphere of the human (people),



and the sphere of the environment that surrounds him/her.

Source: modified after Jaeger-Erben & Matthies (2014)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

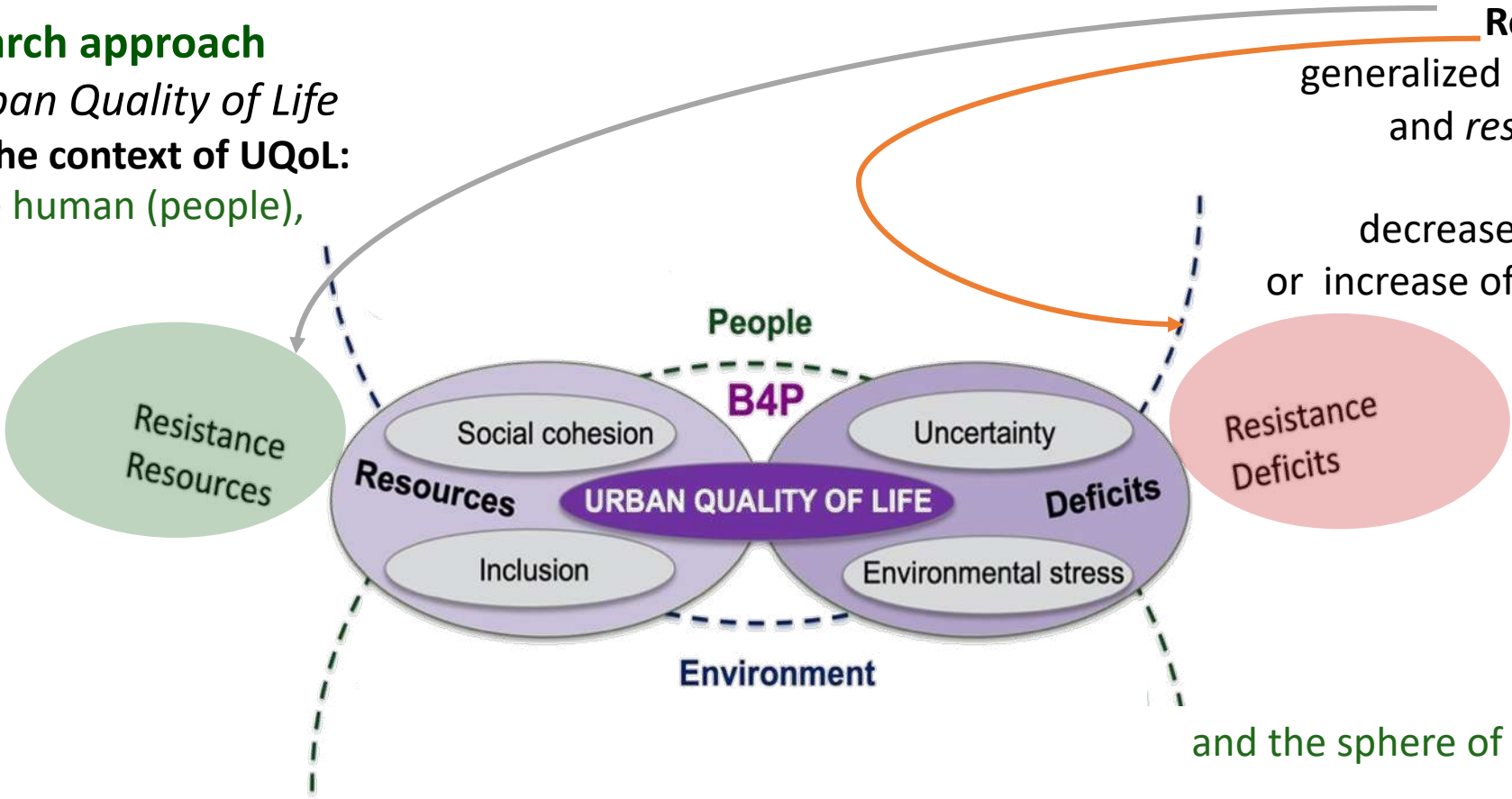
IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

**Analytic research approach**  
*Explaining Urban Quality of Life*  
**Two spheres of the context of UQoL:**  
the sphere of the human (people),



**Relation of**  
generalized *resistance resources*  
and *resistance deficits*  
decrease, neutral impact,  
or increase of **Urban Quality of Life.**

and the sphere of the environment that  
surrounds him/her.

Source: modified after Jaeger-Erben & Matthies (2014)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

Analytic research approach  
Explaining Urban Quality of Life

Two spheres of the context of UQoL:  
the sphere of the human (people),

includes human traits like  
capabilities, needs and coping strategies.



includes the designed urban environment, urban green,  
urban governance structures, and climate.

Relation of  
generalized resistance resources  
and resistance deficits

decrease, neutral impact,  
or increase of Urban Quality of Life.

and the sphere of the environment that  
surrounds him/her.

Source: modified after Jaeger-Erben & Matthies (2014)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

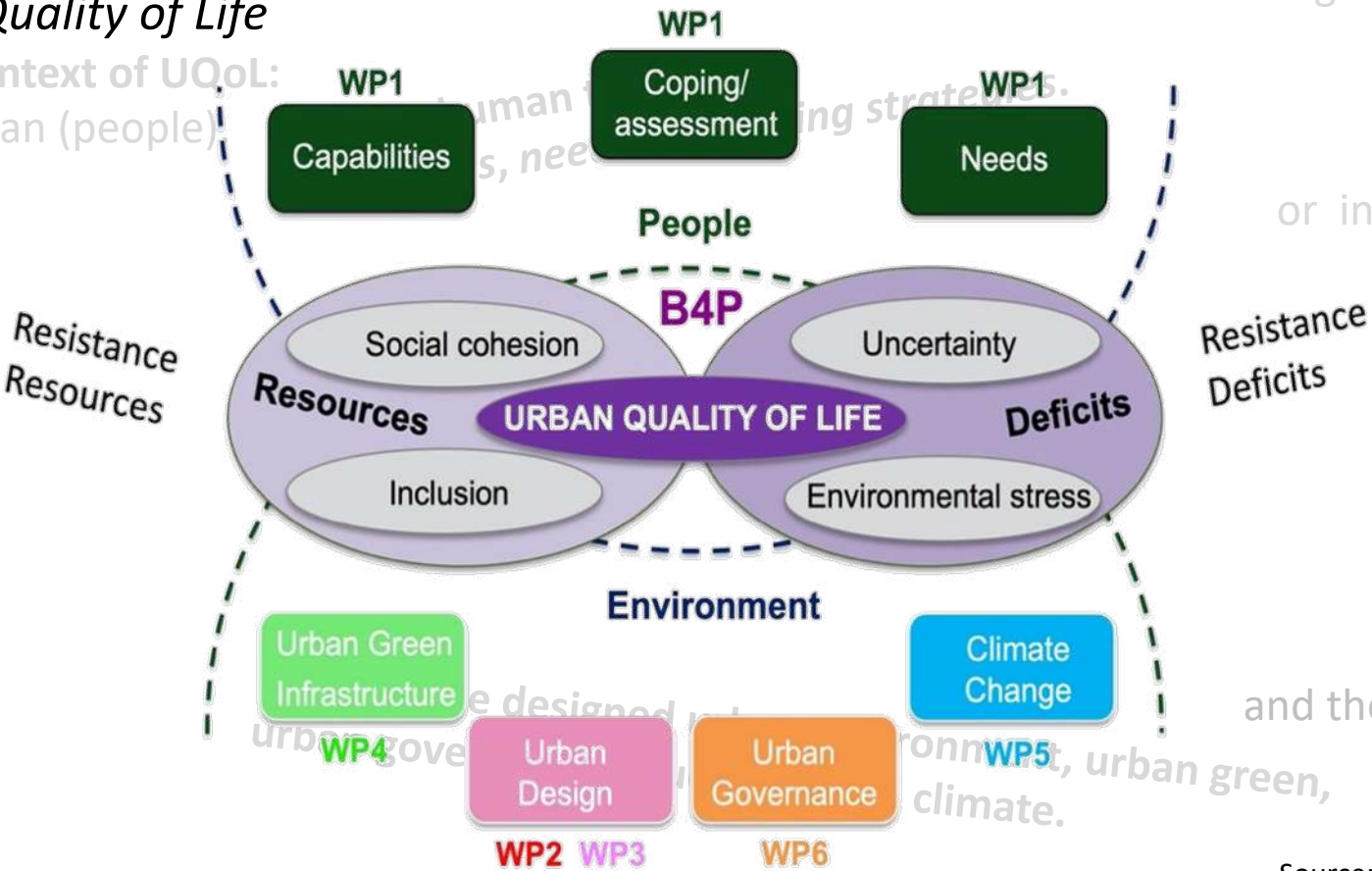
SPONSORED BY THE

FONAR  
Research for sustainability

## Build4People's Approach towards Urban Quality of Life

Analytic research approach  
Explaining Urban Quality of Life

Two spheres of the context of UQoL:  
the sphere of the human (people)



Relation of  
generalized *resistance resources*  
and *resistance deficits*  
↓  
decrease, neutral impact,  
or increase of **Urban Quality of Life**.

and the sphere of the environment that  
surrounds him/her.

Source: modified after Jaeger-Erben & Matthies (2014)

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

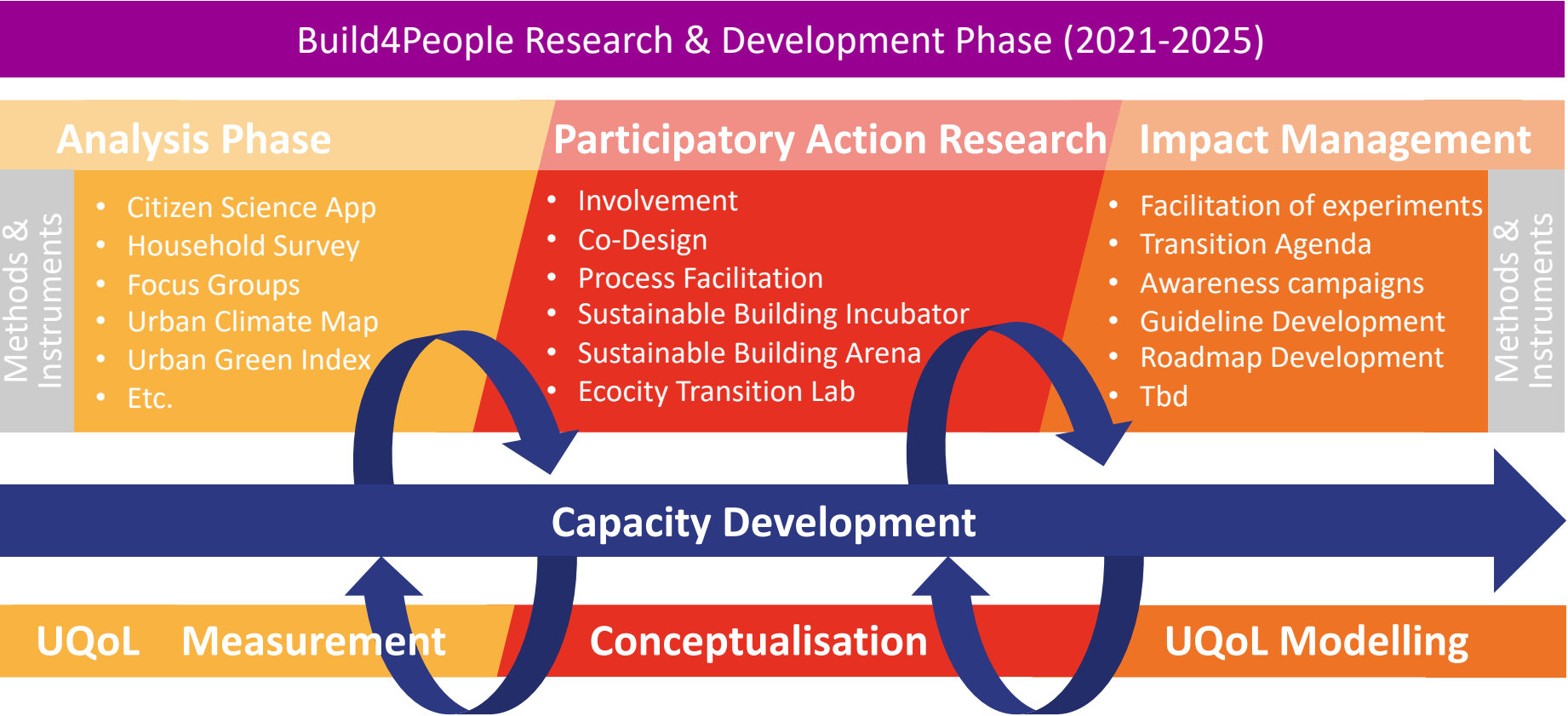
IMP 2025-2027

SPONSORED BY THE

FONAR  
Research for sustainability

## Build4People’s Approach towards Urban Quality of Life

### Build4People Way(s) towards Enhancement of Urban Quality of Life



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



**FONA**  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

**16:00-16:30: Break-out Sessions: “Discussion of Methodological Approaches of the B4P Project”**

**Session #1: How to implement citizen science approaches within Build4People Project?**

✓ *led by WP#1 “Behaviour Change and WP#4 “Urban Green Infrastructures”*

**Session #2: How to combine urban climate planning with thermal comfort of building users?**

✓ *led by WP#2 “Sustainable Building” and WP#5 “Urban Climate”*

**Session #3: How to promote sustainable neighbourhood development in the context of sustainable urban transformation?**

✓ *led by WP#3 “Sustainable Neighbourhoods” and WP#6 “Sustainable Urban Transformation”*



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Session #1: How to implement Citizen Science Approaches within Build4People

led by WP#1 & WP#4



Learn more about the  
purpose and aims of  
**Citizen Science Approaches**



Gain deeper insights into the  
**application of data collection**  
via the Citizen Science Input APP



Discuss with us the **APP**  
**implementation** and the  
**recruitment** of participants  
in Phnom Penh



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

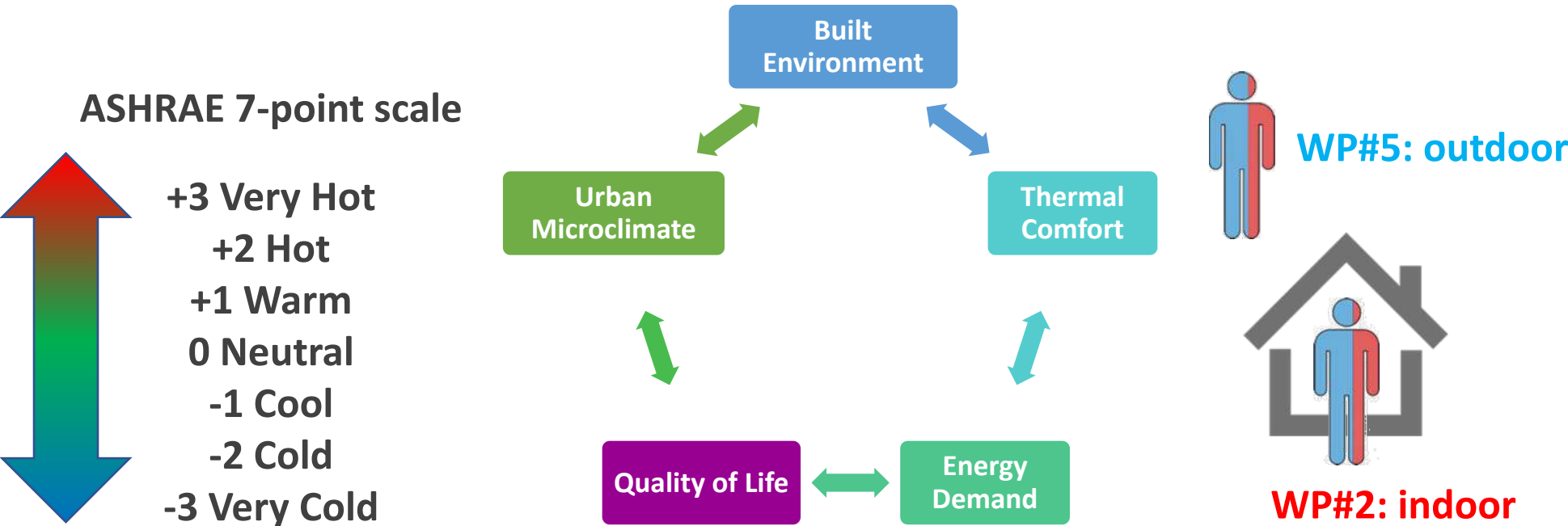
### Session #2: How to combine urban climate planning with thermal comfort of building users?

led by WP#2 & WP#5

University of Stuttgart  
Germany



INKEK  
institute for  
climate and  
energy strategies



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

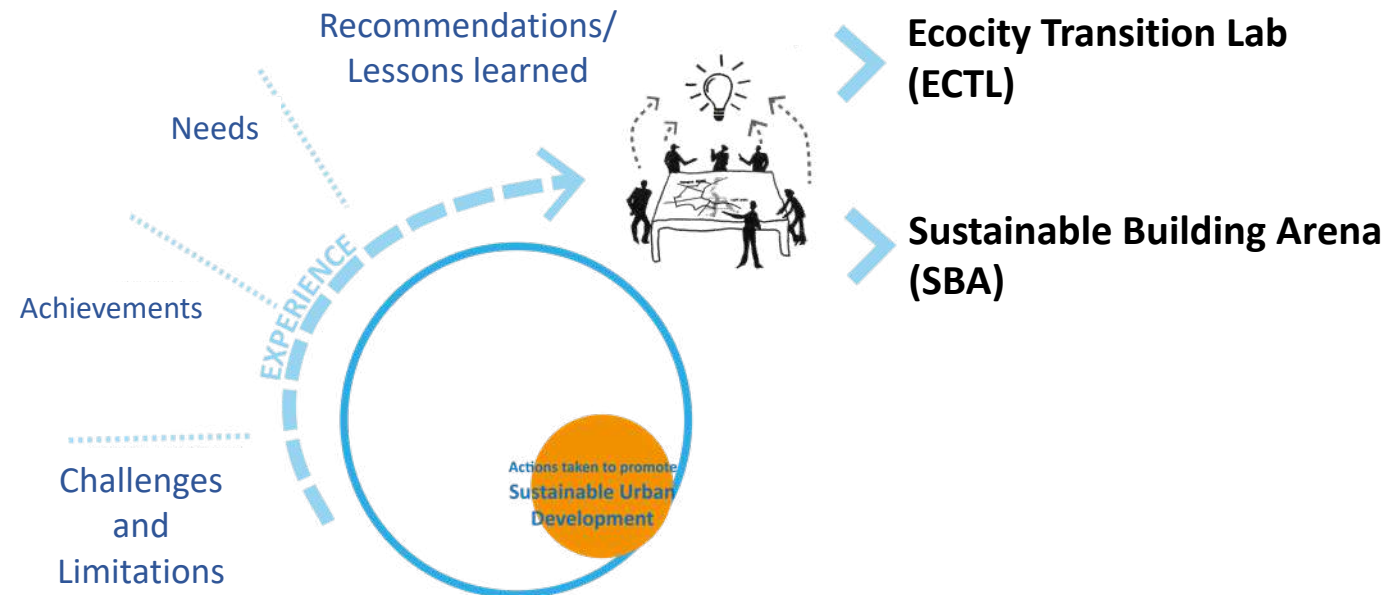
## Agenda Build4People Research Conference, 28 September 2021

### Session #3: How to promote sustainable neighbourhood development in the context of sustainable urban transformation?

led by WP#3 & WP#6

#### Aims:

- ✓ To gain deeper understanding of multi-stakeholder projects or actions aimed at urban sustainability
- ✓ To learn from their challenges, limitation and achievements
- ✓ To incorporate the experiences into the ECTL & SB
- **Bring together policy-making, planning theory, urban design & planning practice**



EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

U+H  
Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Session #1: How to implement Citizen Science Approaches within Build4People

led by WP#1 & WP#4



Eberswalde University  
for Sustainable  
Development



Learn more about the  
purpose and aims of  
**Citizen Science Approaches**



Gain deeper insights into the  
**application of data collection**  
via the Citizen Science Input APP



Discuss with us the **APP**  
**implementation** and the  
**recruitment** of participants  
in Phnom Penh



# Work package # 1: Behaviour Change Research Conference 2021

Breakout session #01

**28 September 2021**

**Annalena Becker<sup>1</sup>, Anke Blöbaum<sup>1</sup>, Ellen Matthies<sup>1</sup>, Op Vanna<sup>2</sup>, & Sok Serey<sup>2</sup>**

*<sup>1</sup> Otto von Guericke University Magdeburg*

*<sup>2</sup> Royal University of Phnom Penh*

# Citizen Science and Climate Change

- Citizen Science methodology integrates **public outreach** and **scientific data collection** (Brossard et al., 2005)
  - collection and analysis of data often relating to the natural world by members of the general public, typically as part of a collaborative project with professional scientists
  - Increasing number of citizen science projects within the last 20 years aiming at **nature conservation** (Bonney et al., 2016)
- brings the public and science closer together (“scientific citizenship”)
- involves the public more deeply in dialogue and decision-making around **issues related to risk and environmental threat**

# Citizen Science and Urban Quality of Life

- when aiming at enhancing the quality of life of citizens in Phnom Penh through sustainable urban planning
  - an essential mean to **actively involve citizens in activities and projects** within their city
- encourage citizens to play their role in the urban environment (Chamhuri et al., 2015)
- **Participation, social interaction** and **sense of belonging** positively related to urban quality of life (Biagi et al., 2018; WBGU, 2016)
- opportunities for social actions within the urban environment might be facilitated by citizen science projects (Maund et al., 2020)
- attachment to a place can have an impact on the restorative effect of it (Liu et al., 2020) and can show a positive influence on **civic activity** and **civic involvement** (Lewicka, 2005; Shaykh-Baygloo, 2020)

# Citizen Science and Behaviour Change

- Long-term effects on motivation for pro-environmental behaviour through participation in citizen science projects (Meschini et al., 2021)
- **Environmental Citizenship:**
  - perception of the individual as an integral part of the environment and the willingness to act to make it viable (Avriel-Avni, & Gan, 2019)
- participants show an **intrinsic value** for their environment and are motivated to support research efforts (Maund et al., 2020)
- **Protection motivation theory** and pro-environmental behaviour:
  - raising **awareness** for the **urban ecosystem** and the consequences of individual behaviour (Kothe et al., 2019)
- **Environmental education** and **knowledge transfer** with the help of everyday technology; multimedia effect of learning, (Mayer, 2002, 2005)

# Work Package # 4: Urban Green Infrastructure

## Research Conference 2021

Breakout session # 01

28 September 2021

**Gulam Mohiuddin<sup>1</sup>, Sanara Hor<sup>2</sup> & Jan-Peter Mund<sup>1</sup>**

*<sup>1</sup>Eberswalde University for Sustainable Development*

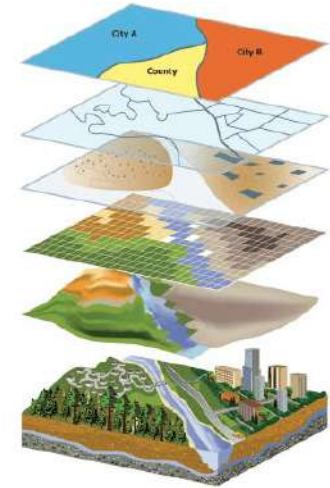
*<sup>2</sup>Royal University of Agriculture, Phnom Penh*

## Context of Input App

Household survey



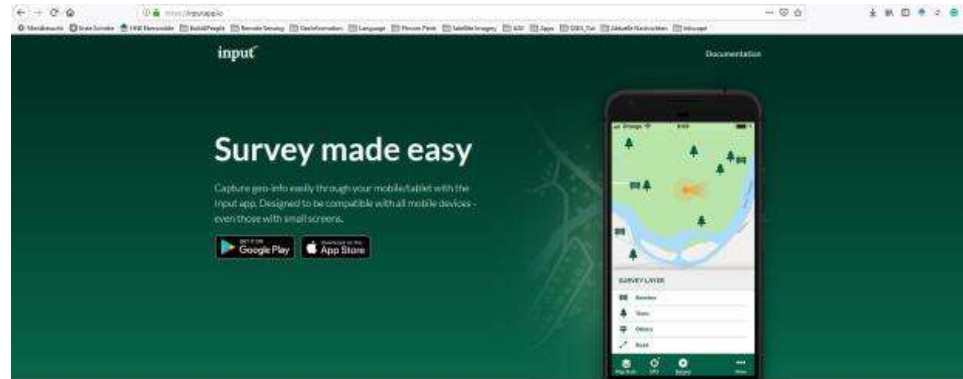
Adding location through Input App



<https://learn.arcgis.com/en/arcgis-book/images/ch5/05-fig-5-4-v2.png>

- ✓ Through the Input App we are connecting a spatial location to the data being collected by the WP#1 and WP#4.
- ✓ This offers the scope of spatial statistical analysis that will enhance analysis of conventional tabular data or traditional graphs and charts.
- ✓ That will allow later more objective spatial interpretation of the UQoL broken down to particular neighborhoods and suburbs in Phnom Penh.

# About the Input App



Available for both android and iPhones



Principal software platform

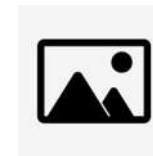


Data format flexibility

Points



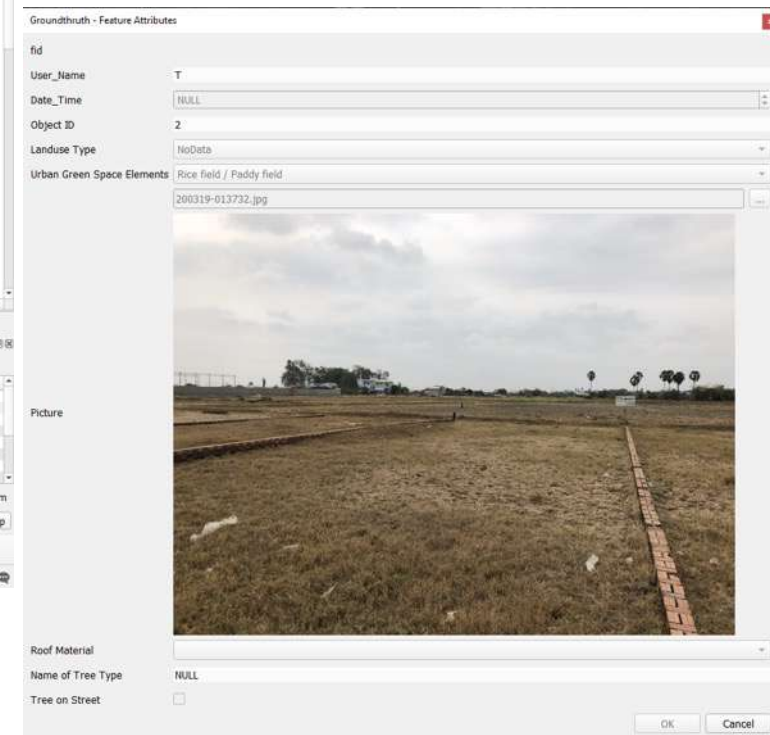
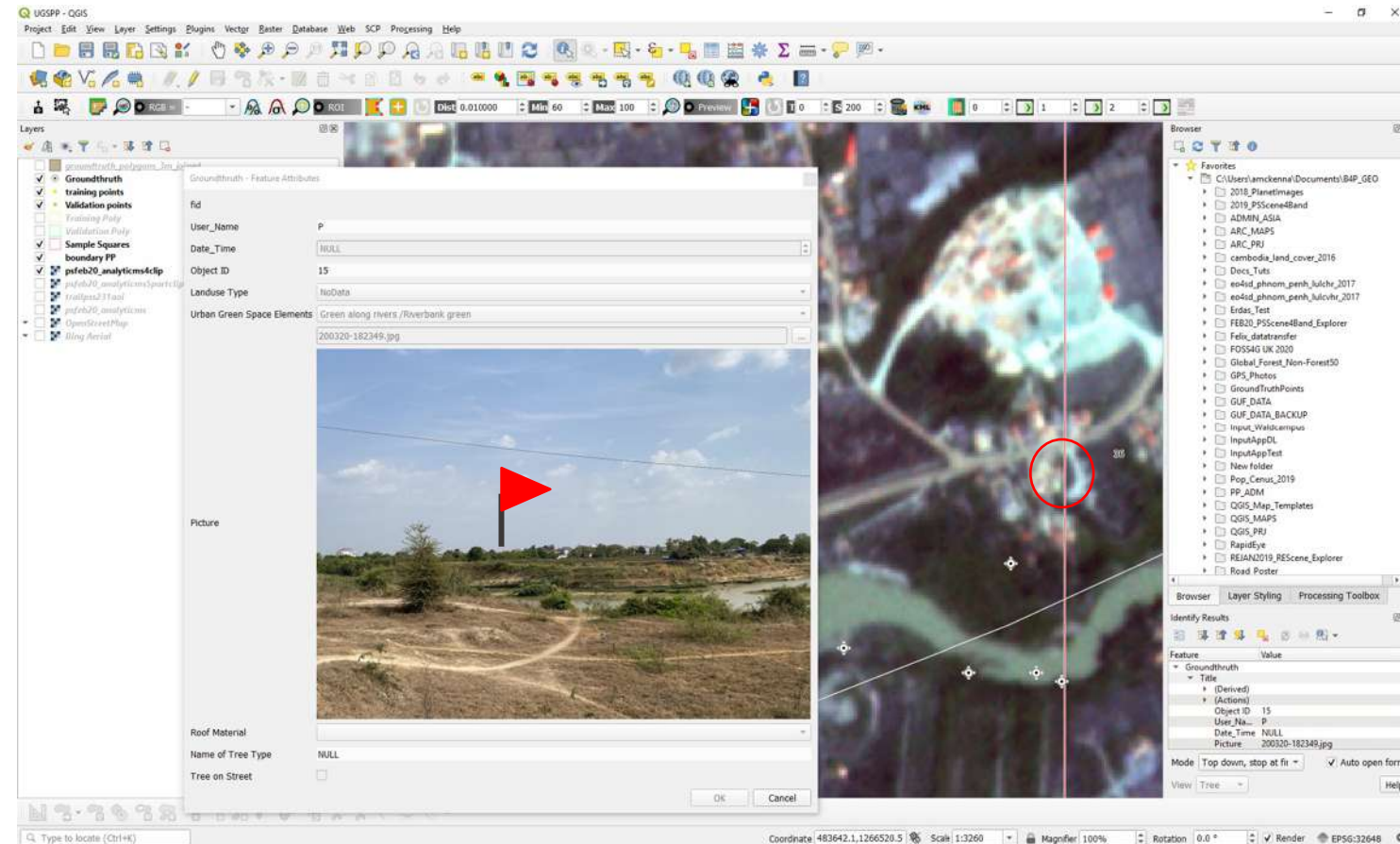
Scope of spatial data



Scope of non-spatial data

- ✓ We are considering to add cascading (or drill-down) forms: this will help with a complex questionnaire, and using icons and graphics in the forms for data collection: to better engage with communities

# Example of using Input App



# Example from Phnom Penh: People Perception on Urban Green

- ✓ Land use and land cover change (LULCC) and its consequence has been discovered since 2020 by students' participation with WP4-Build4People
- ✓ 03 study topics have been designed and were conducted in Chbar Ampov District, Phnom Penh
- ✓ This study reveals housing areas and infrastructure (road and other) had increased and there is decline in agricultural and green areas
- ✓ Change in land use and land cover is affecting on rain water discharges within 2010 and 2019
- ✓ Local people reported urban green is needed but there should be clarification about the tree tenure and displacement
- ✓ The modelling related to urban land expansion and its impacts must set into account for further detail investigation to support Phnom Penh Green Development

## Discussion topics

### A) Shared Experience within our Breakout Session Group

- Do you have already participated in Citizen Science projects?
- Do you know similar projects regarding citizens' perspective on environments by using an app in Phnom Penh?
- Would you like to participate in such an app?

### B) App-User-Interaction and Implementation of the App

- How will the app be used in daily life? Do you think it is common among people in Cambodia to interact with such APPs?
- What is interesting and motivating in using a Citizen Science App?
- How can we reach and recruit participants for this Citizen Science project (later at mainstreaming phase)?

### C) Content of the App - Determinants and Criteria for the Evaluation of the Urban Environment

- What spatial and physical characteristics of urban spaces do we need to consider?
- What do we need consider when addressing specific local areas?

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

**FONAR**  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Session #2: How to combine urban climate planning with thermal comfort of building users?

*led by WP#2 & WP#5*

University of Stuttgart  
Germany



INKEK institute for  
climate and  
energy strategies





Build4People Project

SPONSORED BY THE



Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability



University of Stuttgart  
Germany



# WP2 Sustainable Building អគារដែលមាននិរន្តរភាព

Responsible team: Dr Dirk Schwede, Christina Karagianni, Dr Han Virak, Dr Chan Sarin,  
Dr Kim Bunthern, Mr Ly Hav, Mr Hash Chanly

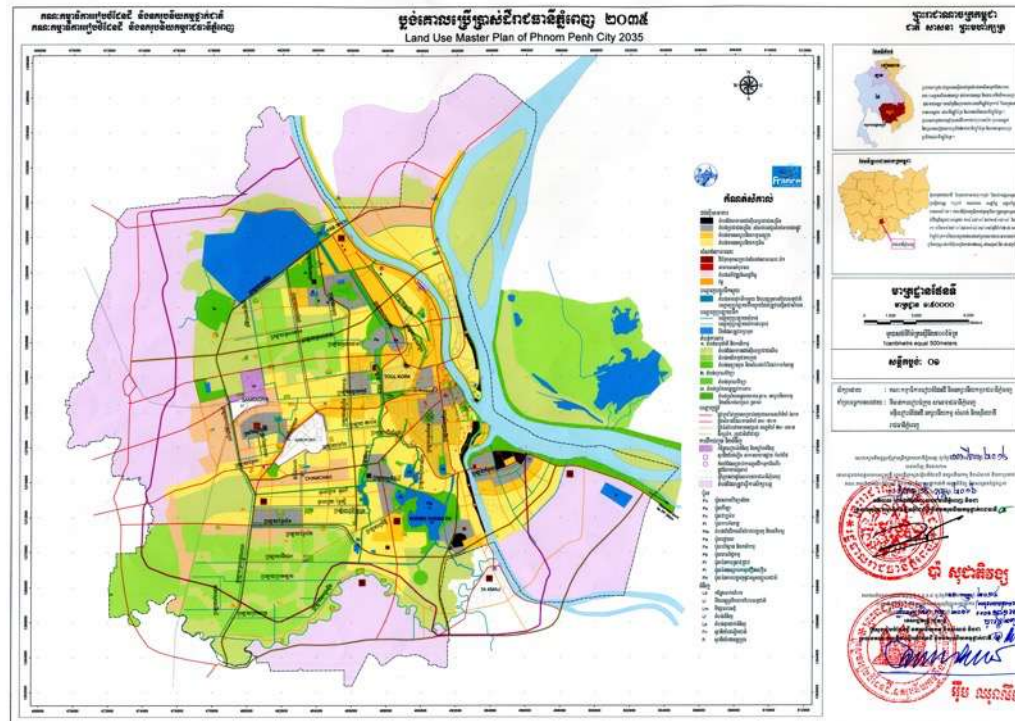
## Urban heat island effect: Impacts on indoor thermal comfort and cooling load in residential buildings

### Urban climate simulation :

- Impacts of land use change on the future climate of Phnom Penh

### Building simulation:

- Thermal comfort evaluation for typical urban house typologies
- Cooling load evaluation in typical urban house typologies

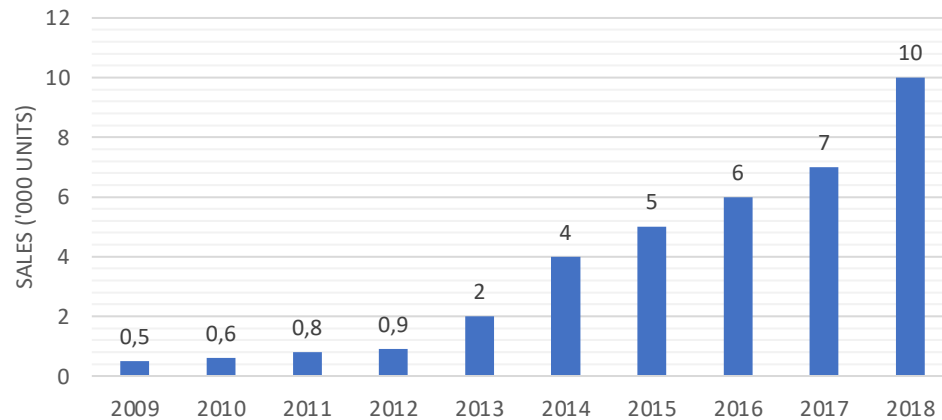


Land use master plan of Phnom Penh city 2035  
The map shows the land use master plan of Phnom Penh city in 2035 which was adopted by the Royal Government of Cambodia in accordance with Sub-decree No. 181 on 23 December 2015.



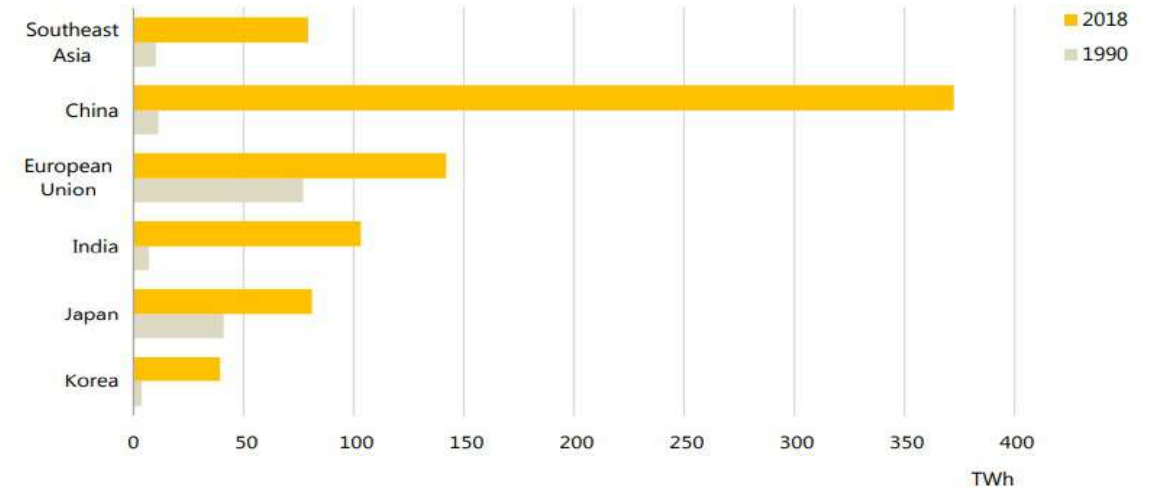
# Thermal Comfort: Space Heating, Cooling and Ventilation

## AC Sales in Cambodia



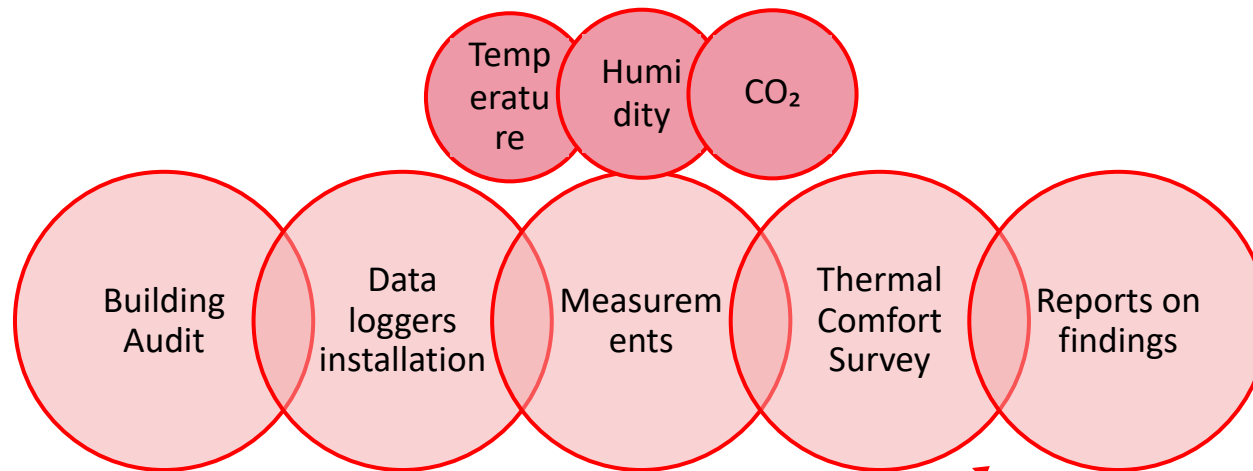
Regional Policy Roadmap for harmonization of AC standards in ASEAN economies & World Air Conditioner Demand by Region

## Electricity consumption of AC systems in residential and commercial buildings

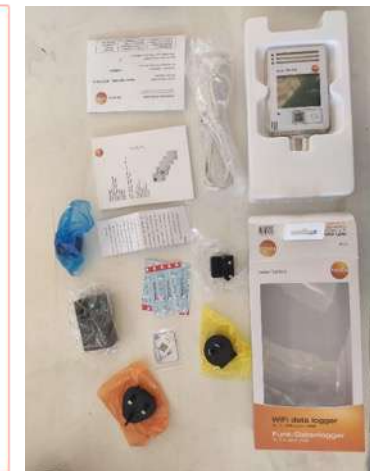


Southeast Asia Energy Outlook 2019, IEA

# Development of the building audit, measurement and survey plan within the Build4People R&D Phase



*Planned sequence of research actions*



## Thermal Environment Online Survey

Please answer the questions only when you are at home. Please stay at the usual location in living room or bedroom with installed testo data logger and keep sitting for 15 min before answering the questions. If your other family members are present now, please invite them to answer the questions after you. Thank you very much for your cooperation!

\*Required

Thermal Environment Online Survey

Skip to question ?

1. Basic information

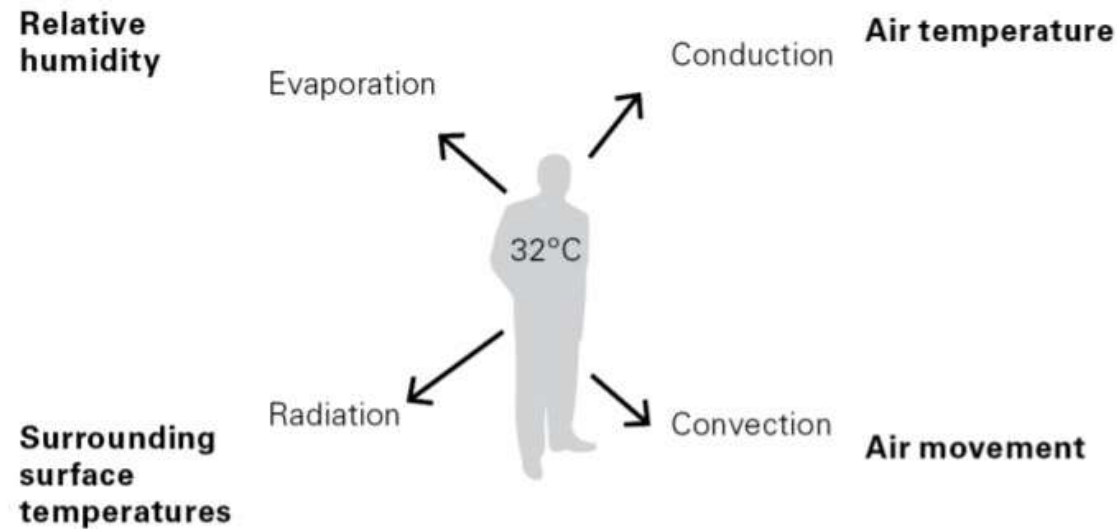
Your personal information will be kept strictly confidential

*Material and equipment needed for our research actions*

## Thermal comfort evaluation

**Definition 1:** *Conditions wherein the average person does not experience the feeling of discomfort (Olgay).*

**Definition 2:** *A condition of mind which expresses satisfaction with the thermal environment as assessed by subjective evaluation (ASHRAE 55 - 2004).*



ASHRAE seven-point scale:

-3=cold, -2=cool -1=slightly cool, 0=neutral, +1=slightly warm, +2 =warm, +3= hot

←—————→  
comfort range

➤ **The indoor thermal comfort will be evaluated by using the adaptive comfort model which is the suitable to be used in hot and humid climate.**

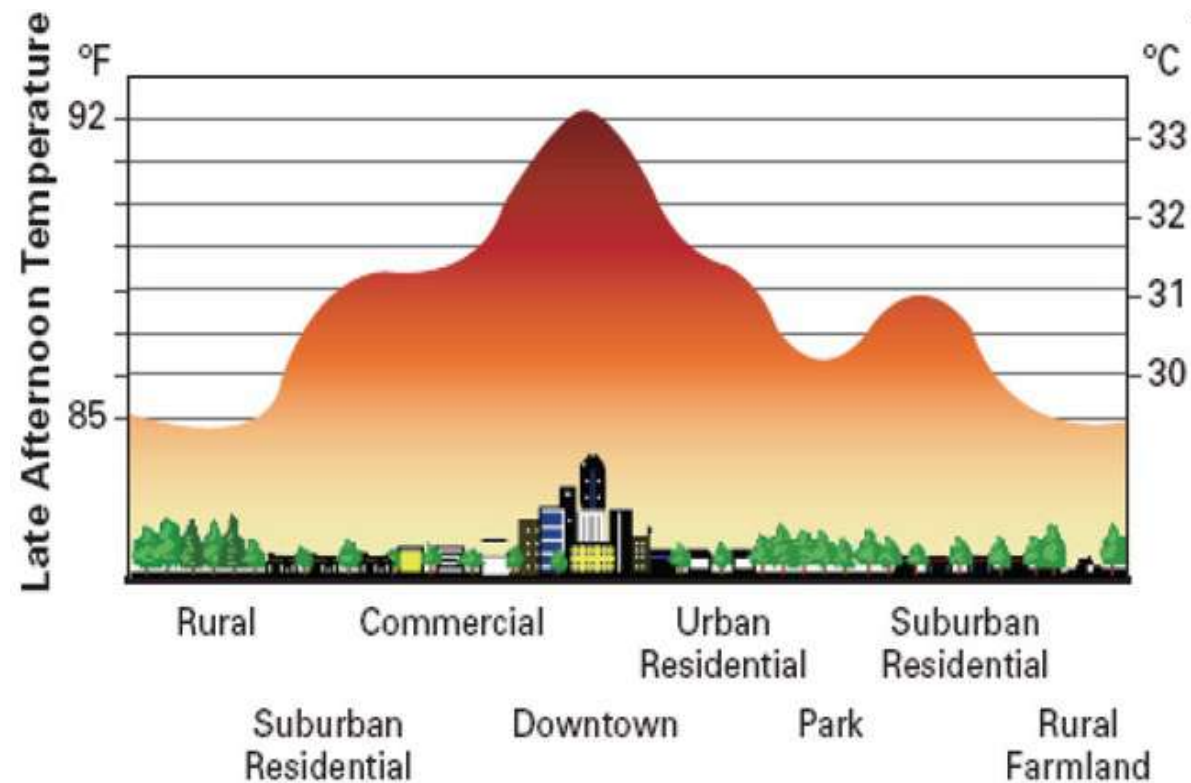


# WP5 Urban Climate អាកាសធាតុទីក្រុង

Responsible team: Prof. Dr. Lutz Katzschner, Sebastian Kupski, Janalisa Hahne

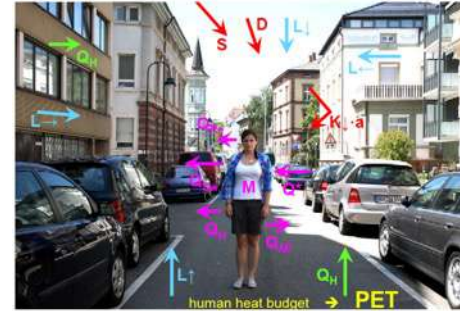
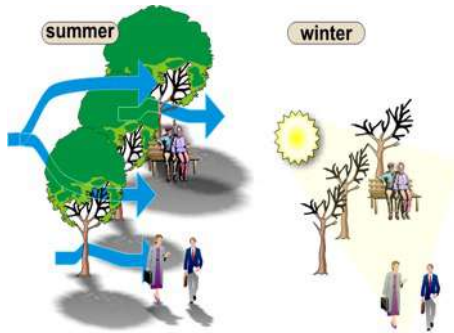
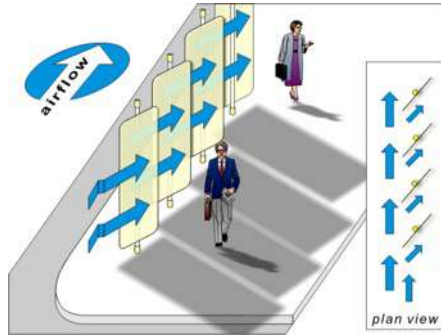
RUPP: Bunleng Se, Nyda Chhinh

## Urban Heat Island effect

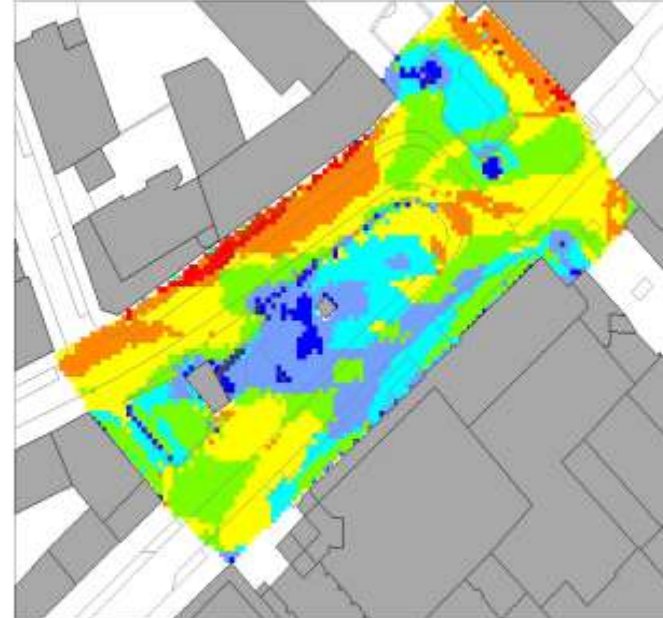




# Outdoor urban design and microclimate

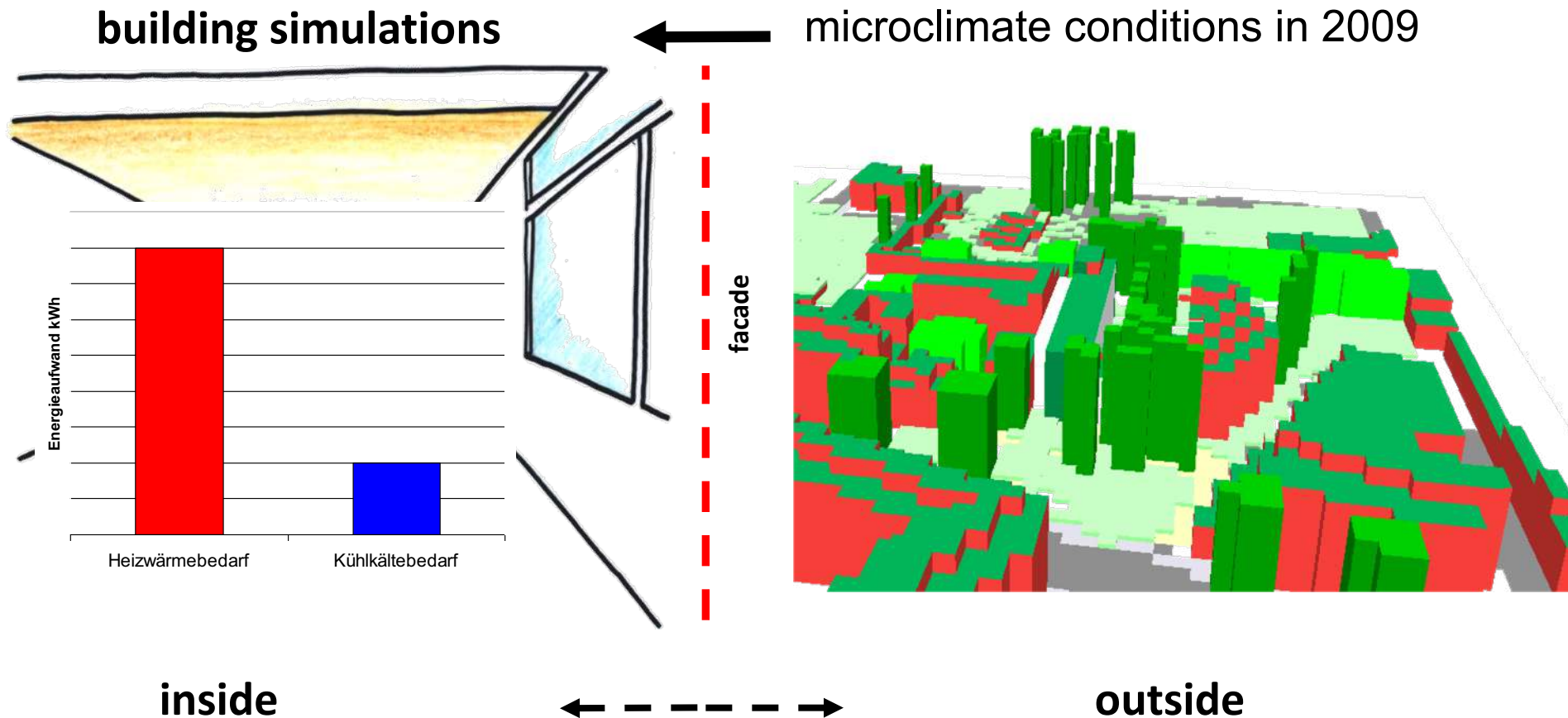


Schematic overview of both heat fluxes within an urban street canyon and human heat fluxes leading to the quantification of the human perception of heat by PET (M: metabolic rate,  $Q_{cl}$ : latent heat flux,  $Q_n$ : net radiation,  $Q_{sw}$ : heat flux due to sweat evaporation,  $Q_{tr}$ : heat flux due to respiration)



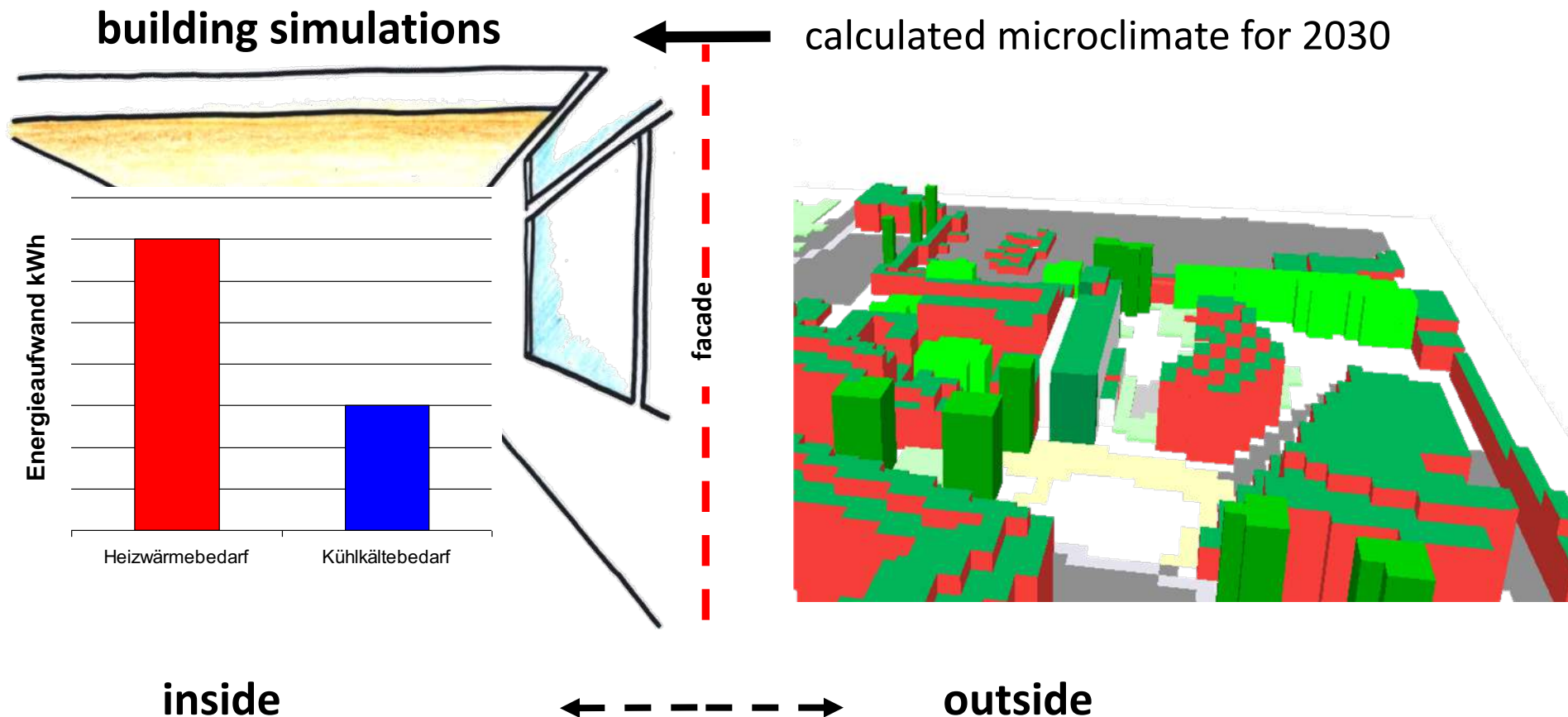


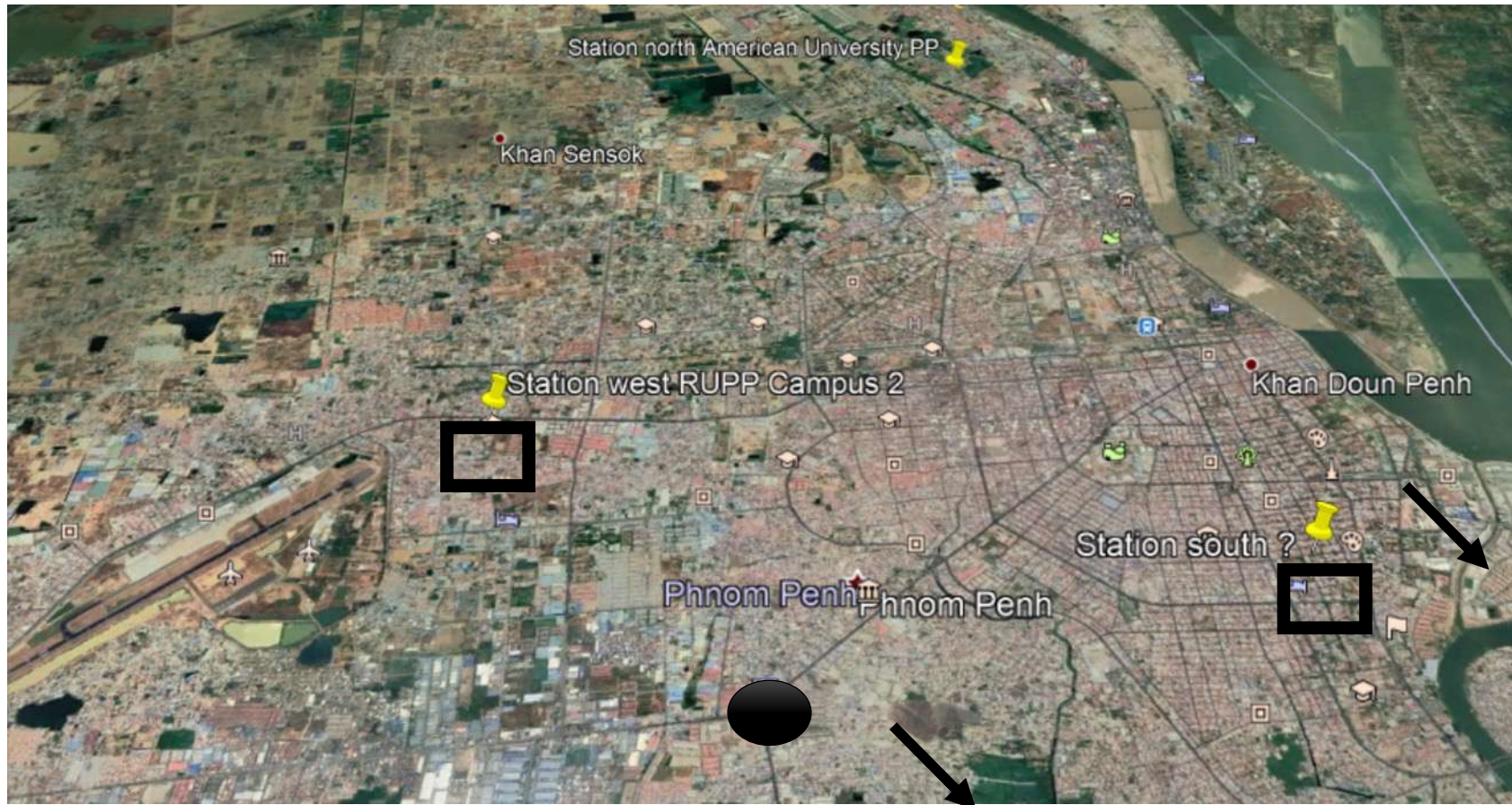
# Indoor and Outdoor Thermal Comfort





## Indoor and Outdoor Thermal Comfort





**weather stations**

**investigation areas**

**Inv. Building**

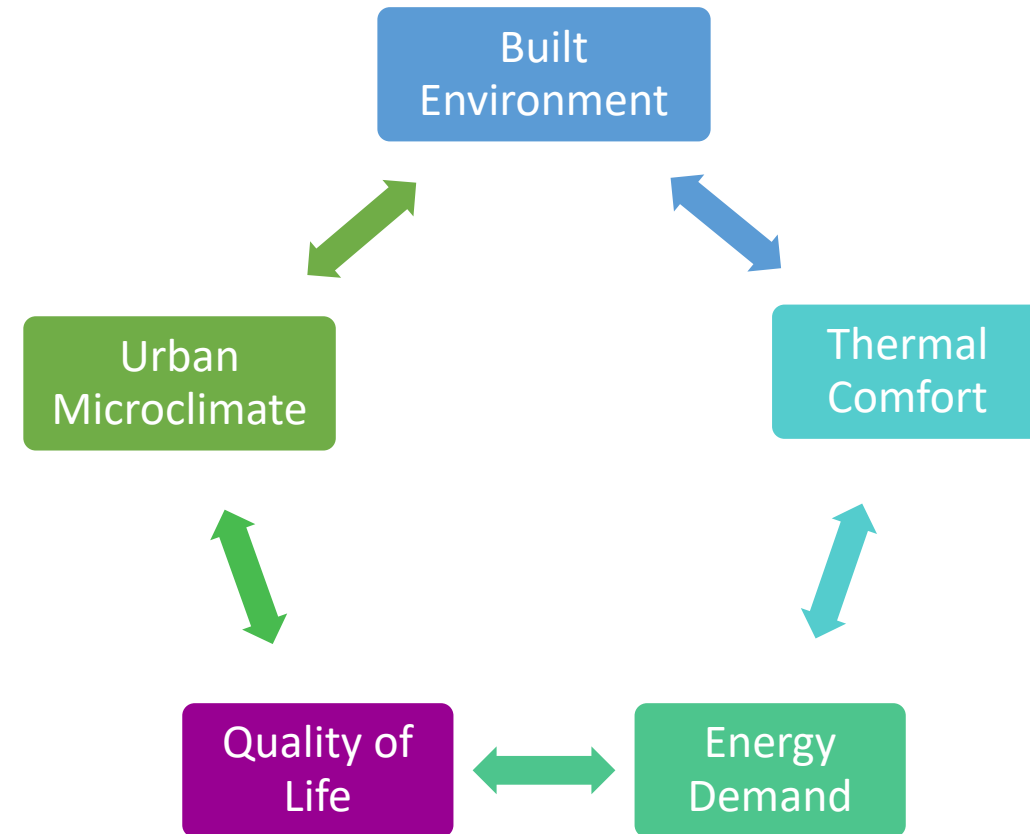


## Session #2: How to combine urban climate planning with thermal comfort of building users?

led by WP#2 & WP#5

### Open questions for discussion

1. *How can we combine urban climate planning with the thermal comfort of building users?*

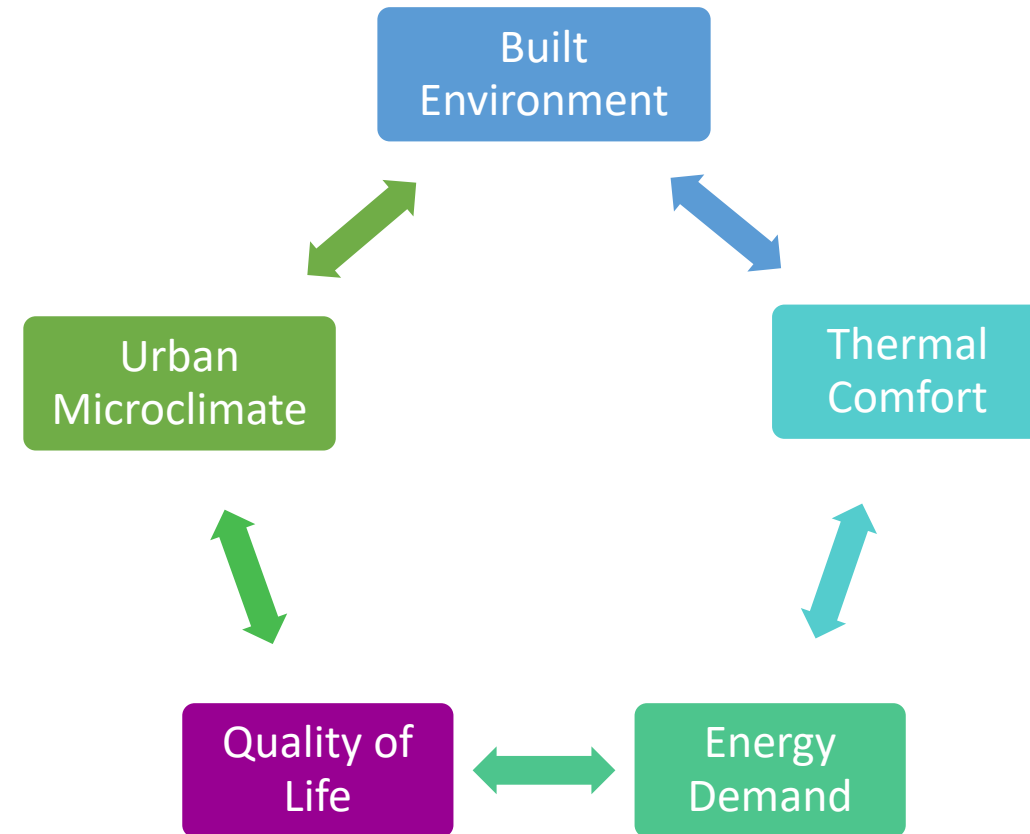


## Session #2: How to combine urban climate planning with thermal comfort of building users?

led by WP#2 & WP#5

### Open questions for discussion

1. *How can we combine urban climate planning with the thermal comfort of building users?*
2. *How do you see the link between indoor and outdoor climate?*
3. *How can we consider climate change in our designs?*





## 2. How do you see the link between indoor and outdoor climate?

Opening of the  
building (windows  
and doors),  
materials for  
cladding

Material used in  
the buildings, for  
heat storage and  
buffering

Buildings are  
build now more  
closed, since  
buildings are air  
conditioned

Example:  
design of ITC  
buildings is  
open for  
natural  
ventilation

Building blocks  
are getting  
bigger and  
bigger → light is  
not permitted in

At least 6  
months no  
conditioning is  
needed

We want natural  
ventilation, we need  
to understand also  
the mesoscale

Linkage should be  
made in the design  
- more natural light  
and ventilation

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បម្លែង ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

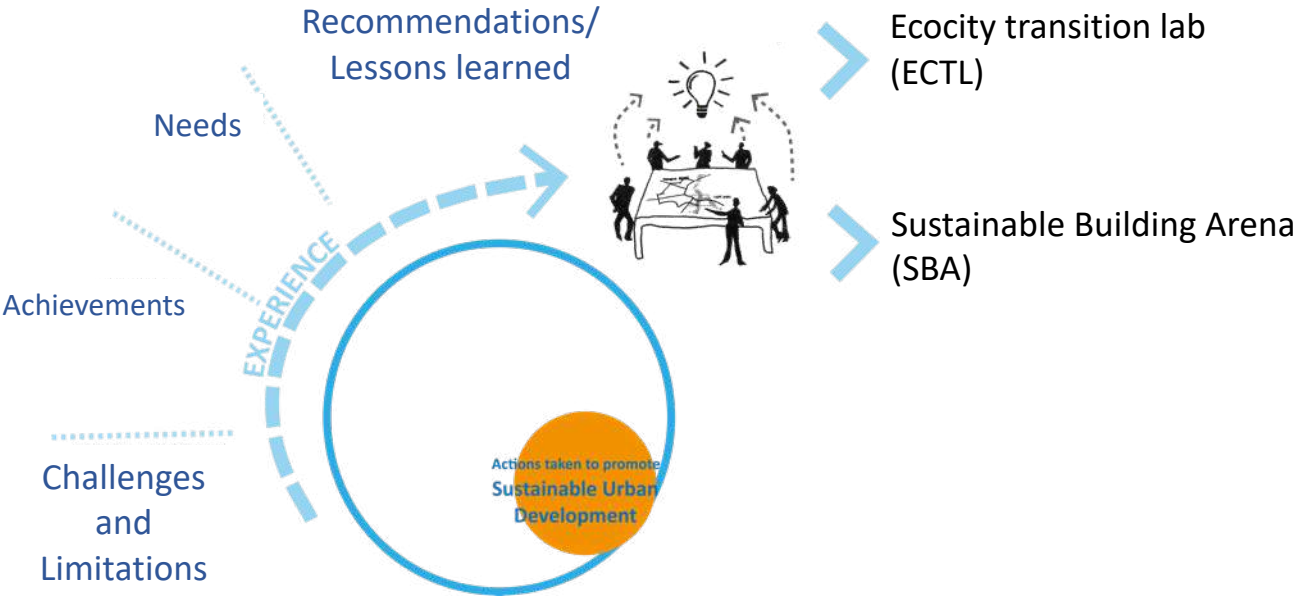
### Session #3: How to promote sustainable neighbourhood development in the context of sustainable urban transformation?

led by WP#3 & WP#6

**Aims:**

- To gain deeper understanding of multi-stakeholder projects or actions aimed at urban sustainability
- To learn from their challenges, limitation and achievements
- To incorporate the experiences into the ECTL and SBA

→ Bring together policy-making, planning theory, urban design & planning practice



EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

U+H  
Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG



# WP6 Sust. Urban Transformation ការផ្លាស់ប្តូរទីក្រុងដោយនិរន្តរភាព

Responsible team: Dr Michael Waibel, Ravi Jayaweera, Dr Seak Sophat, Dr Sothun Nop

DEF 2019-2021

R&D 2021-2025

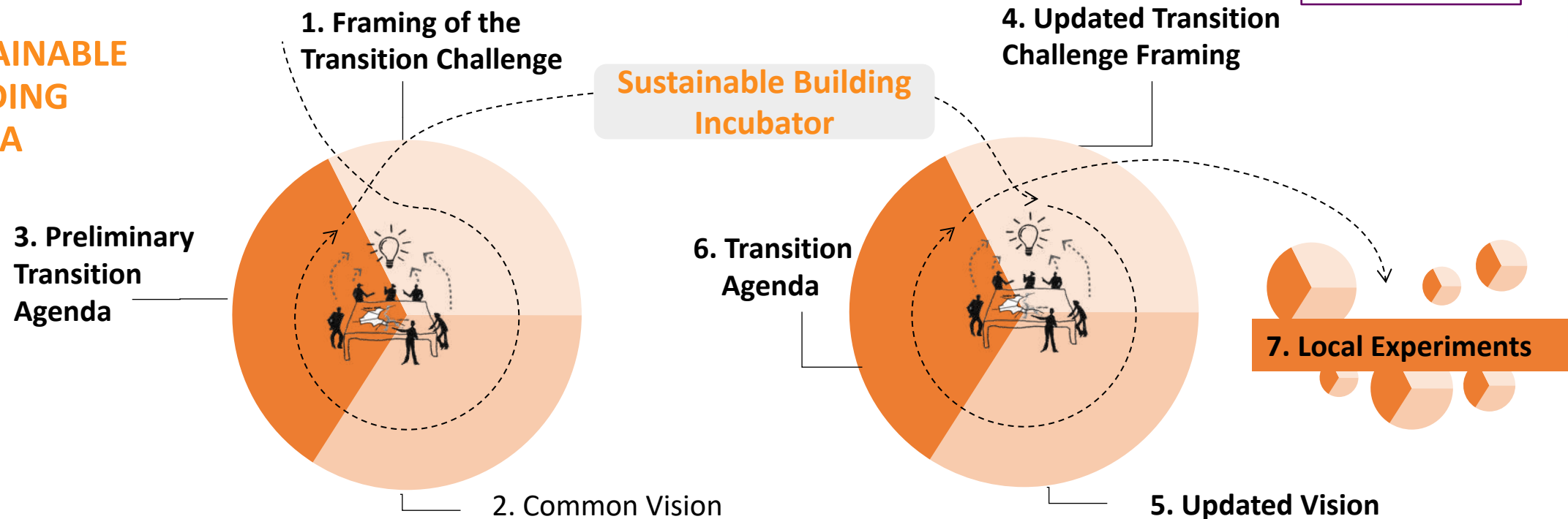
IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

**FONA**  
Research for sustainability

## SUSTAINABLE BUILDING ARENA



- *Multi-actor dialogue & co-creation platform (based on transition management, Noboa et al 2018, Loorbach 2010)*
- *Designed as a protected co-creative space*
- *Empowerment of frontrunners & change agents (sustainability-driven Individuals)*
- *Support of alternative discourses*
- *Creation of future-oriented networks*
- *Generation of system knowledge (problem framing), target knowledge (vision), transformation knowledge (strategies/ transition agenda)*



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE

Federal Ministry  
of Education  
and Research

FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Session #3: How to promote sustainable neighbourhood development in the context of sustainable urban transformation

led by WP#3 & WP#6

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH

U+H  
Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG



- ✓ Which multi-stakeholder projects or actions aimed at urban sustainability have you been part of?
- ✓ Which experiences did you have? What kind of challenges, limitations, achievements, needs did you encounter?
- ✓ How can we integrate your experiences into our methodological approaches?



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

16:45-17:00: Presentation of Results from Breakout Sessions

✓ Each 10 Min including Q&A

Session #1: How to implement citizen science approaches within Build4People Project?

✓ led by WP#1 “Behaviour Change and WP#4 “Urban Green Infrastructures”



# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

16:45-17:00: Presentation of Results from Breakout Sessions

✓ Each 10 Min including Q&A

### Session #2: How to combine urban climate planning with thermal comfort of building users?

✓ led by WP#2 “Sustainable Building” and WP#5 “Urban Climate”



University of Stuttgart  
Germany



INKEK institute for  
climate and  
energy strategies

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

16:45-17:00: Presentation of Results from Breakout Sessions

✓ Each 10 Min including Q&A

EBLE MESSERSCHMIDT PARTNER  
Architekten und Stadtplaner PartGmbH



Universität Hamburg  
DER FORSCHUNG | DER LEHRE | DER BILDUNG



### Session #3: How to promote sustainable neighbourhood development in the context of sustainable urban transformation?

✓ led by WP#3 “Sustainable Neighbourhoods” and WP#6 “Sustainable Urban Transformation”

# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021

R&D 2021-2025

IMP 2025-2027

SPONSORED BY THE



Federal Ministry  
of Education  
and Research



FONA  
Research for sustainability

## Agenda Build4People Research Conference, 28 September 2021

### Part II: Methodological Approaches of the Build4People Project

#### 17:00-17:15: Next Steps, Wrapping-up and Closing of the Build4People Research Conference

- ✓ *Dr Michael Waibel, Build4People project consortium representative*
- ✓ *HE Nuon Pharat, Vice Governor of Phnom Penh Capital Administration*



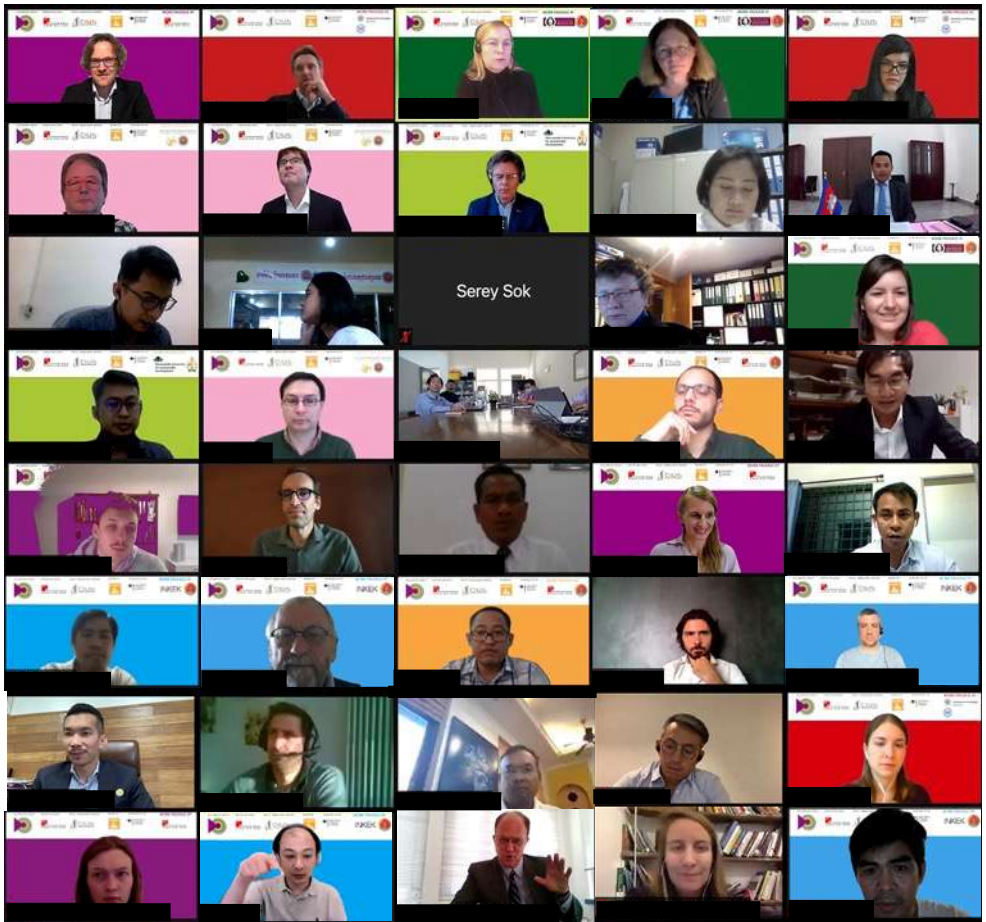
# Build4People Project

Enhancing Quality of Life through Sustainable Urban Transformation in Cambodia

គម្រោងសាងសង់សម្រាប់ប្រជាជន  
ការលើកកម្ពស់ គុណភាពជីវិត របស់  
អ្នកទីក្រុង ដោយ ការ បង្កើន ទៅជា  
ក្រុង មានចីរភាពនៅកម្ពុជា

DEF 2019-2021  
R&D 2021-2025  
IMP 2025-2027

SPONSORED BY THE  
Federal Ministry  
of Education  
and Research  
**FONA**  
Research for sustainability



Thanks so much  
for your  
attention!

More info: [build4people.org](http://build4people.org)

អរគុណសម្រាប់  
ការយកចិត្ត  
ទុកដាក់!

WORK IN PROGRESS!

Research Partners



Implementation Partners



Dissemination Partners

