Smart City Policies

Morgenstadt Smart Cities Global – Expertise Building Webinar 02

Friday, 26th of March 2021, Moderation: Sophie Mok, Fraunhofer IAO

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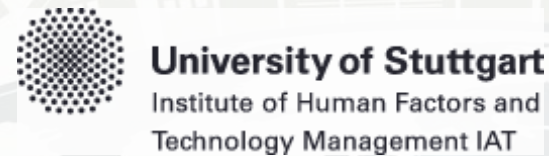*This session is being recorded. By attending you are consenting to be recorded.*

ABOUT MGI

Funding

On behalf of

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

INTERNATIONAL CLIMATE INITIATIVE (IKI)

of the Federal Republic of Germany

Coordination

in cooperation with

University of Stuttgart
Institute of Human Factors and Technology Management IAT

Fraunhofer
IAO

Implementation

Fraunhofer

Frankfurt School of Finance & Management
German Excellence. Global Relevance.

PIURA
MUNICIPALIDAD PROVINCIAL

NIUA
National Institute of Urban Affairs

Tecnológico de Monterrey

IMPLAN
INSTITUTO MUNICIPAL DE PLANEACIÓN SALTILLO

UNIVERSIDAD DE PIURA

MORGENSTADT SMART CITIES GLOBAL INITIATIVE

Mission

🌿 Mitigation of and adaptation to climate change impacts

🌿 Low-emission, environmentally conscious and innovative urban development
(Sustainable Development Goals (SDG 11))

🌿 Replicable and affordable solutions for the resilient and livable city of tomorrow

www.mgi-iki.com

Saltillo

Piura

Kochi
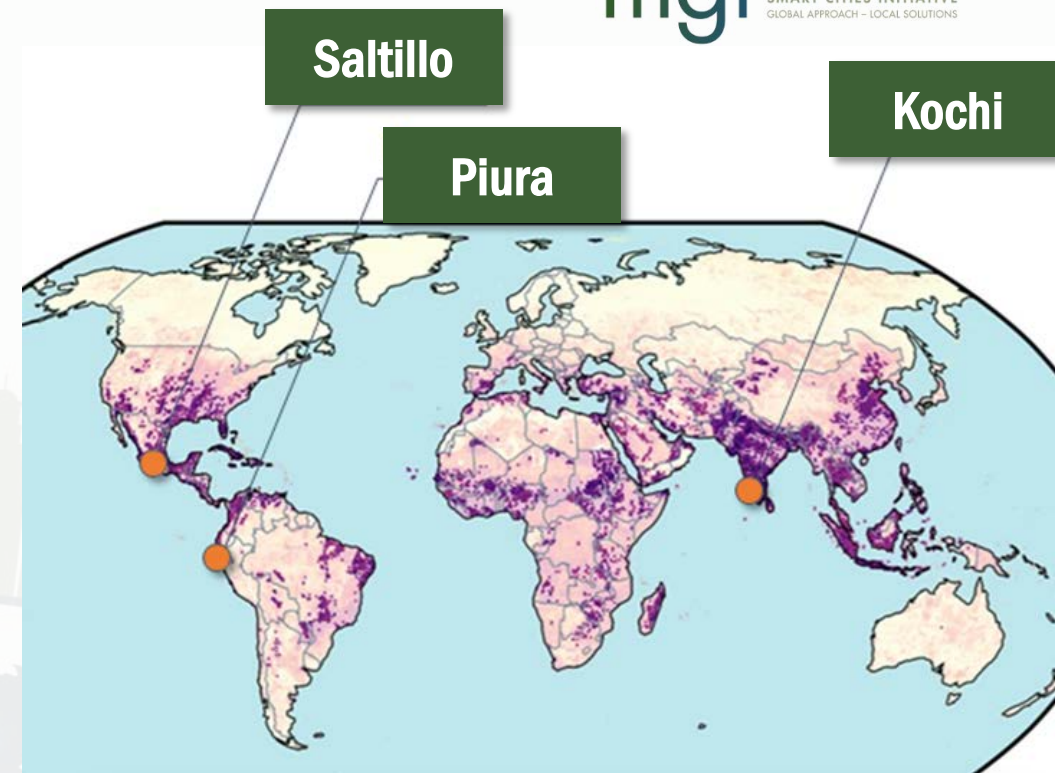
MGI Capacity Building Webinars – Smart City Policies

- How to issue locally adapted regulations and incentives targeted at dealing with innovative technologies and their impact on urban development

- How to use (smart city) innovations that help reducing the environmental footprint of cities whilst also increasing their resilience

- How multilevel governance and organisational issues help in adressing policy and decision making

I LIKE CARROTS!

I PREFER STICKS!

seppo.net

Agenda

- **Smart City Policies – What for?**

  Josep Canals Molina, Policy Advisor

- **The Climate Smart Cities Assessment Framework and it's link to policy making**

  Dr. Umamaheshwaran Rajasekar, Chair Urban Resilience at the National Institute of Urban Affairs (NIUA)

Joint Brainstorming Break

- **SMARTilience - Integrated monitoring model for the climate-resilient smart city**

  Rebecca Nell, Researcher Urban Governance Innovation, Fraunhofer IAO

- **The Leipzig Smart City Unit – Institutionalizing the smart city topic in the city organisation**

  Nadja Riedel, Senior Project Officer Digital City Unit at the City of Leipzig

Board Review and Open Discussion

WHAT IS A SMART CITY?

The one that is the more efficient in giving the best possible service to its inhabitants with the resources available.

SMART CITIES POLICIES. WHAT FOR?

Smart city v. Clever city

SMART CITIES POLICIES. WHAT FOR?

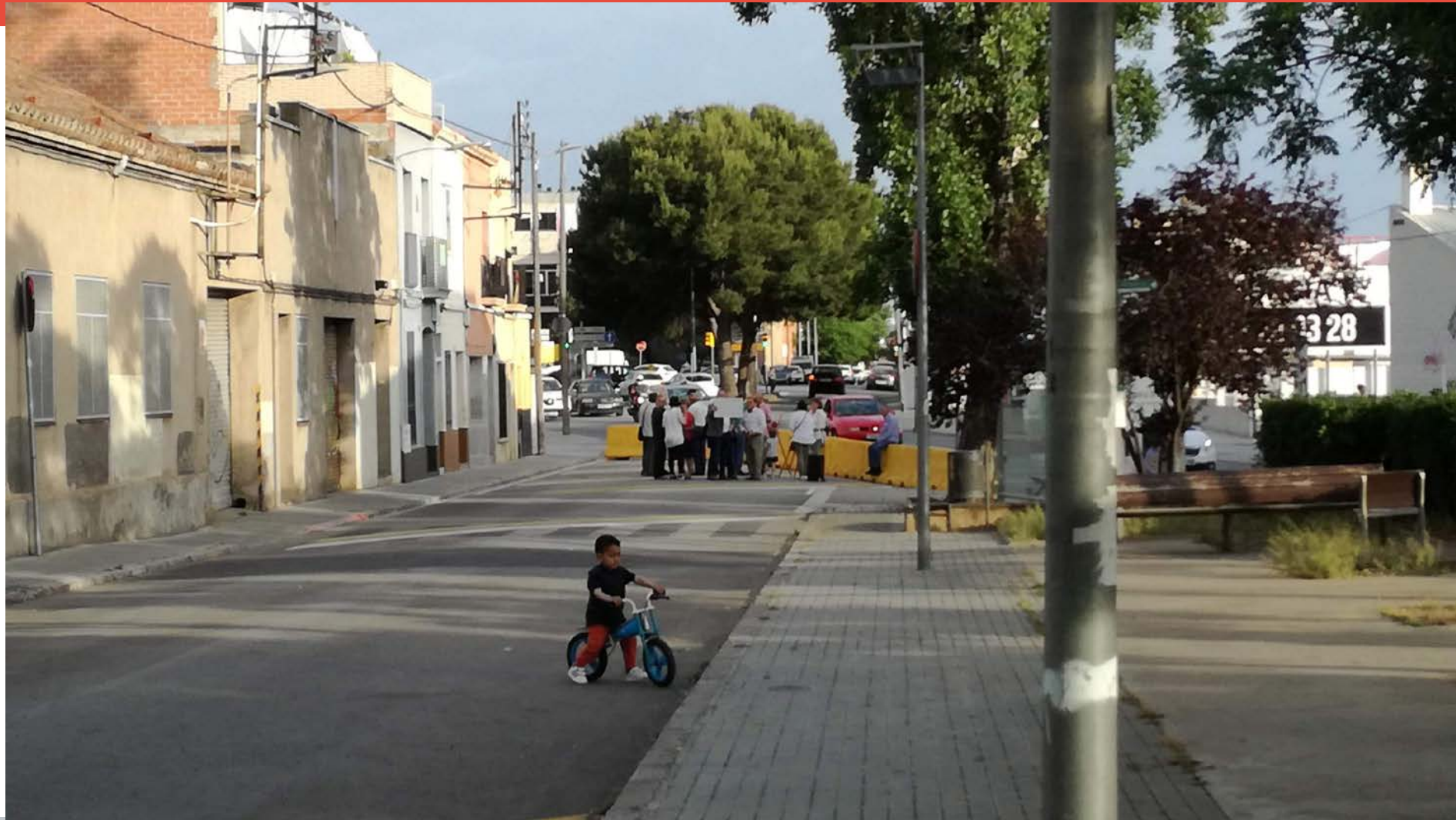Smart is not about technology (only)

Is about Innovation

SMART CITIES POLICIES. WHAT FOR?

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SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

If you don't have money, use your imagination.
That is really smart.

SMART CITIES POLICIES. WHAT FOR?

© STEPVIAL

SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

Technology must be at the service of the people

SMART CITIES POLICIES. WHAT FOR?

Street View - ago. 2012

SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

Technocracy vs. Democracy

SMART CITIES POLICIES. WHAT FOR?

- ✓ Mobility for the majority
- ✓ Democratization of public space
- ✓ Efficient in the use of energy and water
- ✓ Nature Based Solutions
- ✓ Co-created
- ✓ Wise in Waste
- ✓ Taxation to encourage correct behaviours

SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

SMART CITIES POLICIES. WHAT FOR?

Even a very good idea or solution can be bad if it is not done with them:

Children's perspective.
Women's perspective.
Disabled people persective.
Intercultural perspective.

SMART CITIES POLICIES. WHAT FOR?

Co-created
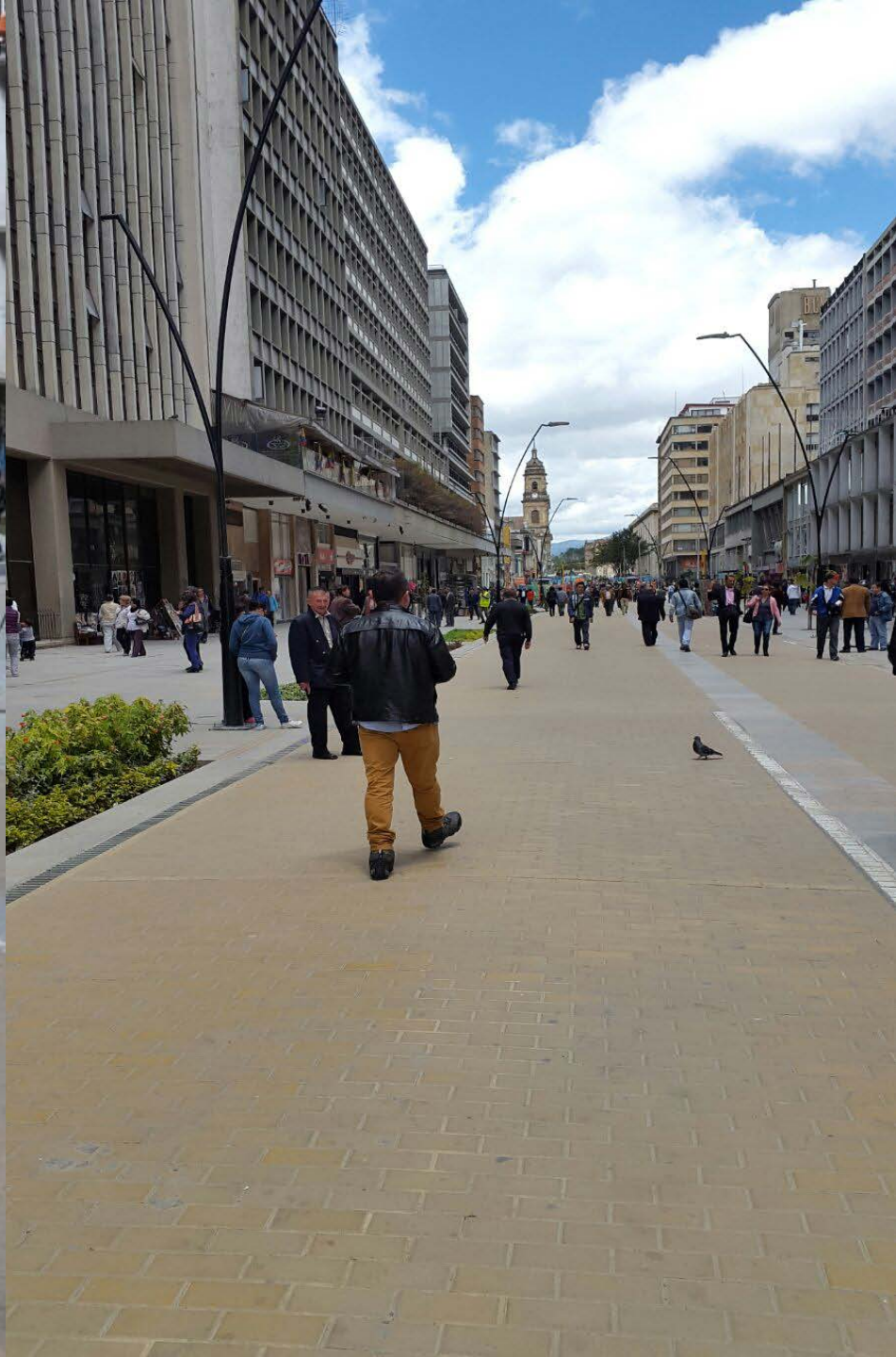
SMART CITIES POLICIES. WHAT FOR?

SMART CITIE... ...OR?

El repte de superar aquesta imatge:

Desde agosto de 2014 hasta enero de 2015

Complementación, actualización, ajustes, estudios, diseños y construcción de la primera etapa de la peatonalización de la carrera 7.

INICIO DE LA FASE DE CONSTRUCCIÓN DE LA PEATONALIZACIÓN DE LA CARRERA SÉPTIMA

Estado actual

Estado al terminar la obra

Con este proyecto mejora la calidad de un espacio de integración socio-cultural, medioambiental y comercial para la recuperación de un escenario con valor patrimonial e histórico, mejora el entorno y la calidad de vida de los habitantes del sector.

La construcción de esta obra mejora la movilidad peatonal y conectividad con el centro de la ciudad, facilita la accesibilidad al comercio y genera empleo en la localidad durante la etapa constructiva.

Contrato IDU - 2172 de 2013
CONSORCIO PV AVENIDA JIMÉNEZ
Visita nuestro Punto CREA

Centros de Reunión, Encuentro y Atención en Obra
Callejón Santo Domingo (Calle 12 A entre carrera 7 y carrera 8)
Tel: 314 298 68 73

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• atnciudadano@idu.gov.co

Síganos en:

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La 7a!
Cada paso
una historia

ALCALDÍA MAYOR
DE BOGOTÁ D.C.

BOGOTÁ HUMANA

CONCRETE IS NOT EVOLUTION

GREEN IS EVOLUTION

THANK YOU!
GRÀCIES!
¡GRACIAS!

Hazard Exposure: Smart & AMRUT Cities

Natural Hazards	Very High Disaster Risk Zone		High Disaster Risk Zone		Moderate Disaster Risk Zone		Low Disaster Risk Zone	
	Smart Cities	Amrut Cities	Smart Cities	Amrut Cities	Smart Cities	Amrut Cities	Smart Cities	Amrut Cities
Cyclone	13	92	36	218	43	155	6	32
Earthquake	10	17	20	99	32	227	36	154
Floods			18	124			80	376
Landslide	1	1	8	16	18	60	71	423
Total	**24**	**110**	**82**	**457**	**93**	**442**	**193**	**985**

According to World Bank disasters are likely to cause **2% to 6%** loss to city GDP.

C-Cube: Vision

One Alliance to drive India's response towards sustainable development goals, NDCs and Sendai Framework of Action in cities

Strengthening capacities through shared knowledge, good practices, tools & trainings

Fostering partnerships to pooling of resources to amplify action

Scaling up climate actions to 7000+ Urban Local Bodies

Focus Areas

01 Contributing to India's narrative on urban climate action

02 Create a marketplace for data, knowledge products for all stakeholders

03 Enable peer to peer learning between cities in India & abroad

04 Matchmaking of alliance partners & cities for cohesive action

05 Bring access to cutting edge technology & innovation

06 Building local capacity to implement climate actions

ClimateSmart Cities Assessment Framework 2.0

5 Sectors and 28 indicators

- Urban Planning, Green Cover & Bio diversity
- Energy and Green Buildings
- Mobility & Air Quality
- Water Management
- Waste Management

Climatesmart City Assessment Framework

MOBILITY & AIR QUALITY
- Clean Technologies Shared Vehicles
- Availability of Public Transport
- Percentage of coverage of Non-Motorized Transport network (pedestrian and bicycle) in the city
- Level of Air Pollution
- Clean Air Action Plan (Planning and Implementation)

WASTE MANAGEMENT
- Landfill / dumpsite Scientific Remediation
- Scientific Landfill availability & operations
- Extent of Wet Waste Processed
- Construction & Demolition (C&D) waste management
- Extent of dry waste recovered & recycled
- Waste minimization initiatives undertaken by the City

WATER MANAGEMENT
- Energy-efficient wastewater management system
- Energy-efficient water supply system
- Flood/ water stagnation risk management
- Wastewater Recycle and Reuse
- Extent of Non-Revenue Water
- Water Resources Management

URBAN PLANNING, GREEN COVER & BIODIVERSITY
- Rejuvenation & Conservation of Water Bodies & Open Areas
- Proportion of Green Cover
- Urban Biodiversity
- Disaster Resilience
- City Climate Action Plan

ENERGY & GREEN BUILDINGS
- Total electricity consumption in the city
- Total electrical energy in the city derived from renewable sources
- Fossil fuel consumption in the city
- Energy efficient street lighting in the city
- Promotion of green buildings
- Green building adoption

Urban Planning, Green Cover and Biodiversity

1. Rejuvenation and conservation of water bodies and open areas

2. Proportion of green cover

3. Urban biodiversity

4. Disaster resilience

5. City climate action plan

Energy and Green Building

1. Total electricity consumption in the city
2. Total electrical energy in the city derived from renewable sources
3. Fossil fuel consumption in the city
4. Energy efficient street lighting in the city
5. Promotion of green buildings
6. Green building adoption

Mobility and Air Quality

1. Clean technologies shared vehicle

2. Availability of public transport

3. Percentage of coverage of non-motorized transport network (pedestrian and bicycle) in the city

4. Level of air pollution

5. City air action plan (planning and implementation)

Water Management

1. Water resource management

2. Extent of non-revenue water

3. Wastewater recycle and reuse

4. Flood/water stagnation risk management

5. Energy efficient water supply system

6. Energy efficient wastewater management system
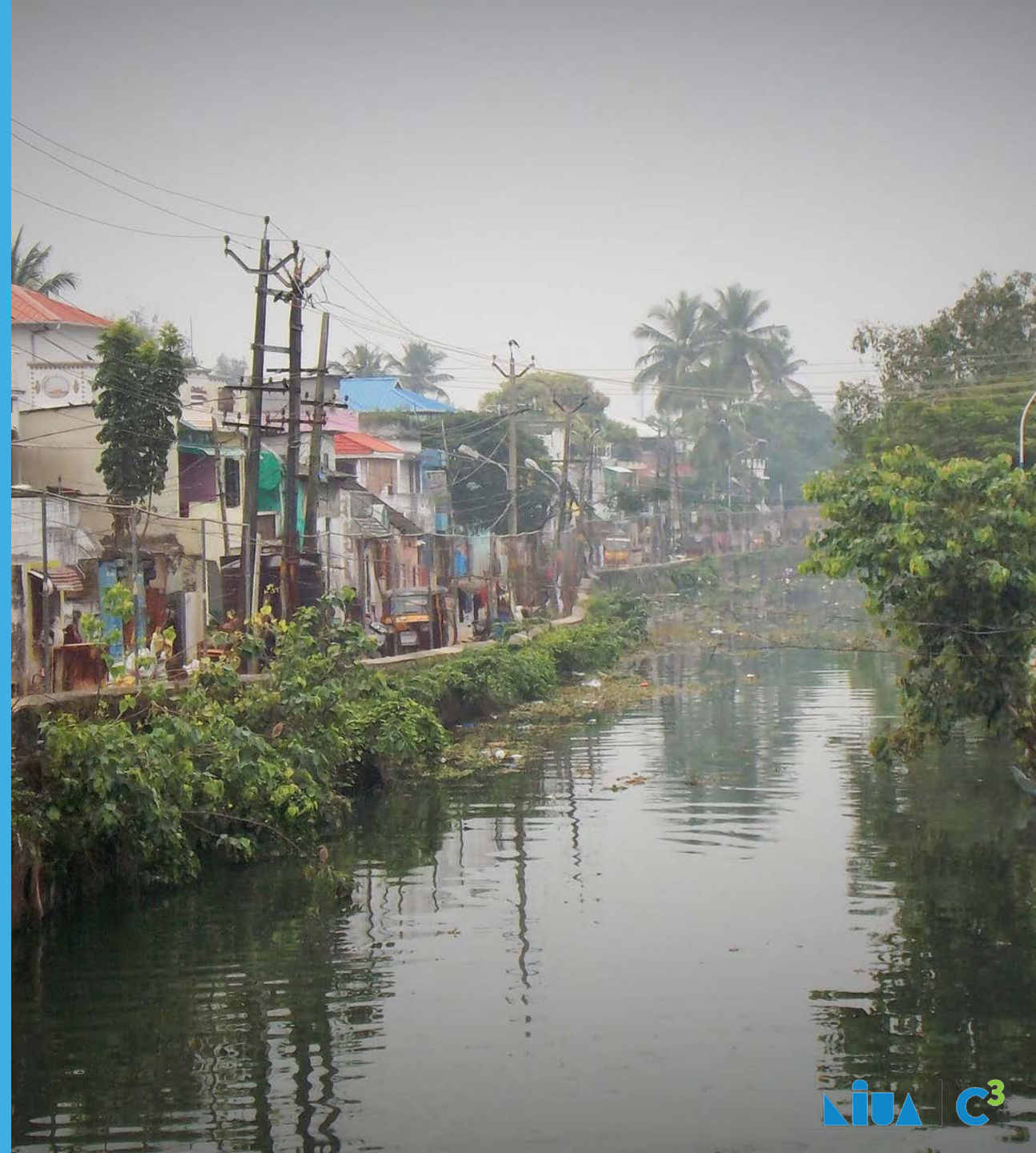
Waste Management

1. Waste minimization initiatives taken by the city

2. Extent of dry waste recovered & recycled

3. Construction & Demolition (C&D) waste management

4. Extent of wet waste processed

5. Scientific landfill availability and operations

6. Landfill/scientific remediation

ClimateSmart Cities

Instituted by MoHUA to mobilise collaborative effort at all levels of government and among all stakeholders to implement climate action in cities

1 To bring synergies, develop cohesive and collaborative initiatives

2 Bring together diverse skills, strengths and resources of various partner agencies

3 Help in implementing projects, share knowledge & good practices

4 Scale up transformative actions

Key Stakeholders

ClimateSmart Cities Alliance

- Develop strategic partnerships with diverse skills
- Resources for implementing cutting edge technologies
- Share good practices
- Scaling up transformative actions

50+ Partners onboarded

120+ Cities supported

96+ Data Points for Climate Action

Leveraging partnerships for mainstreaming climate resilience in India's urban discourse

ClimateSmart Cities Alliance Secretariat
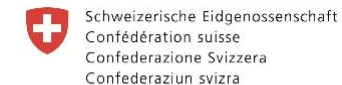
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@C3_NIUA

@C3_NIUA

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Smart City Policies

Break

MORGENSTADT GLOBAL
SMART CITIES INITIATIVE
GLOBAL APPROACH – LOCAL SOLUTIONS

University of Stuttgart
Institute for Human Factors and
Technology Management IAT

Fraunhofer

Supported by:

Federal Ministry
for the Environment, Nature Conservation
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based on a decision of the German Bundestag

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SMARTilience

integrated monitoring model for the climate-resilient smart city

WHAT YOU WILL GET

SMARTilience

➢ Insight into the topic of climate and resilience

➢ Contribute a tool that promotes climate-friendly work in cities (SMARTilience)

➢ Insights into transforming research

➢ Possibility to become a member of our Peer-to-Peer process

GEFÖRDERT VOM

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CLIMATE ADAPTATION
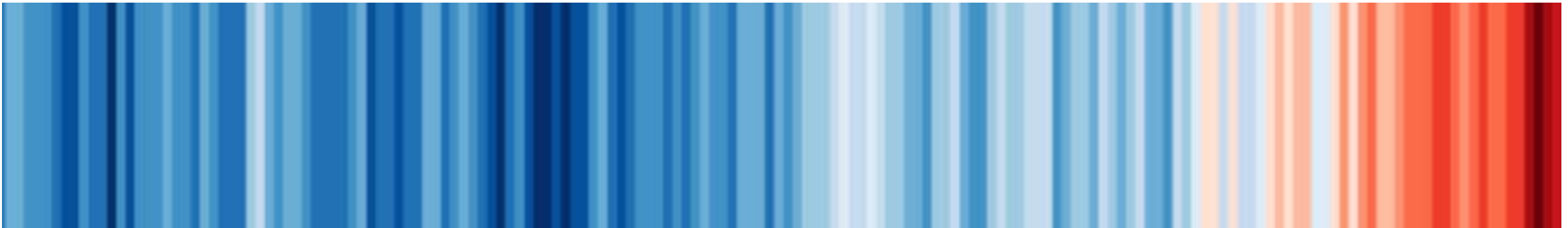
Source: https://www.morgenstadt.de/de/projekte/aktuelle-projekte/innovationsprogramm_klimaneutrale_staedte.html

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GOVERNANCE AND RESILIENCE

- "wide" definition of the governance term (see Mayntz 2004; Benz et al 2007 and Zürn 2008)

- "While the concept of control explicitly targets the control actions of political actors, the governance perspective deals with the institutional structure and its effects on the actions of the addresses (Trute et al 2008: 177)" (Stoy 2015: 34).

- Preparedness: dealing with possible climate impacts
- Recovery: probability to recover again

WHAT IS THE SMARTILIENCE PROJECT ABOUT?

- Promotion by
  - Federal Ministry of Education and Research (BMBF)
  - Funding measure "Flagship Initiative Zukunftsstadt"
- Promoter
  - DLR German Aerospace Center e. V.
- Duration
  - 1-year definition phase (2017-2018)
  - 3-year research and development phase (2019-2022)
- Consortia: cities Halle and Mannheim, HafenCity University and University of Stuttgart, Drees&Sommer and Malik Management Gmbh

Mannheim © Quadratestadt Mannheim

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URBAN GOVERNANCE TOOLBOX
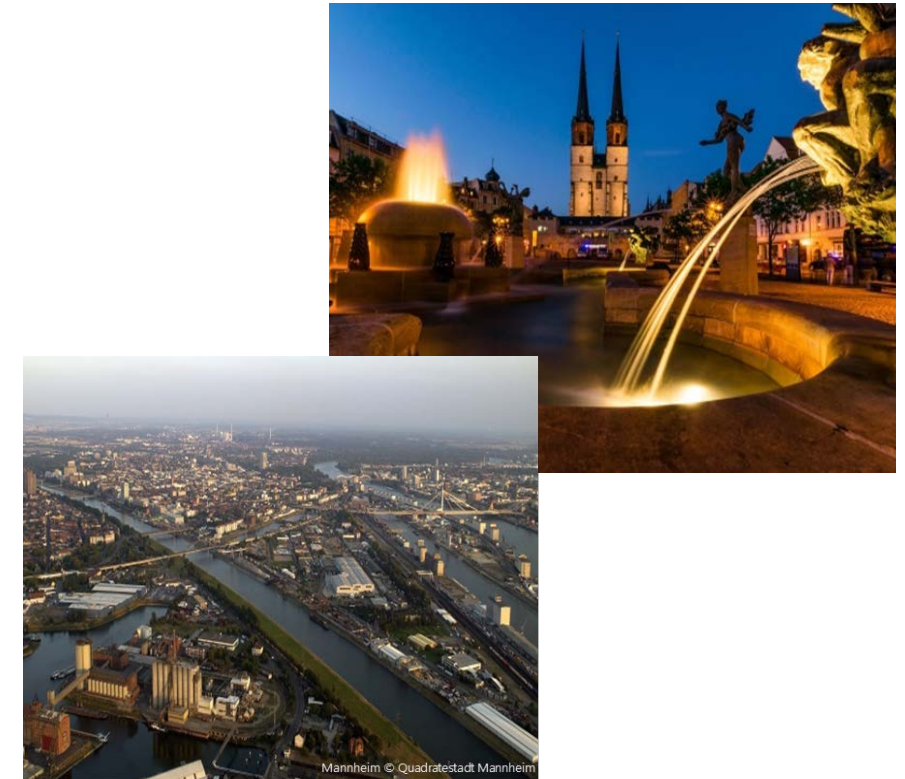
The operation

➢ Development of a socio-technical control model for climate-resilient urban development (urban governance toolbox)

➢ Testing of the control model in the Halle (Saale) and Mannheim real-life laboratories

The objective

to support municipal decision-makers and actors* in taking efficient climate action

SMART TOOLS AND WORK PACKAGES

➢ **Control, planning and implementation** of climate protection and climate adaptation measures are **data-based.**

➢ The project implements innovative methods and tools **for systematic knowledge exchange** and **co-creative strategy development** in cities.
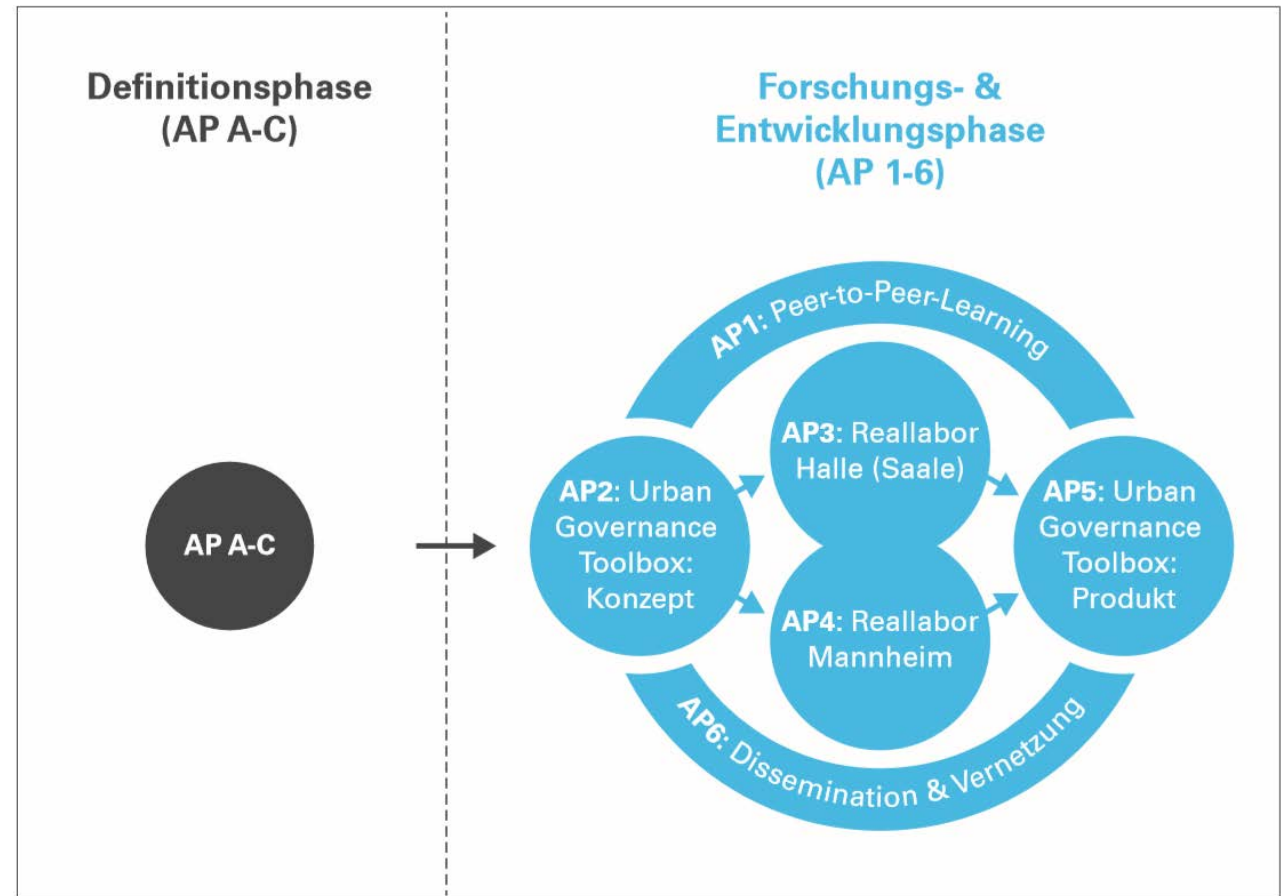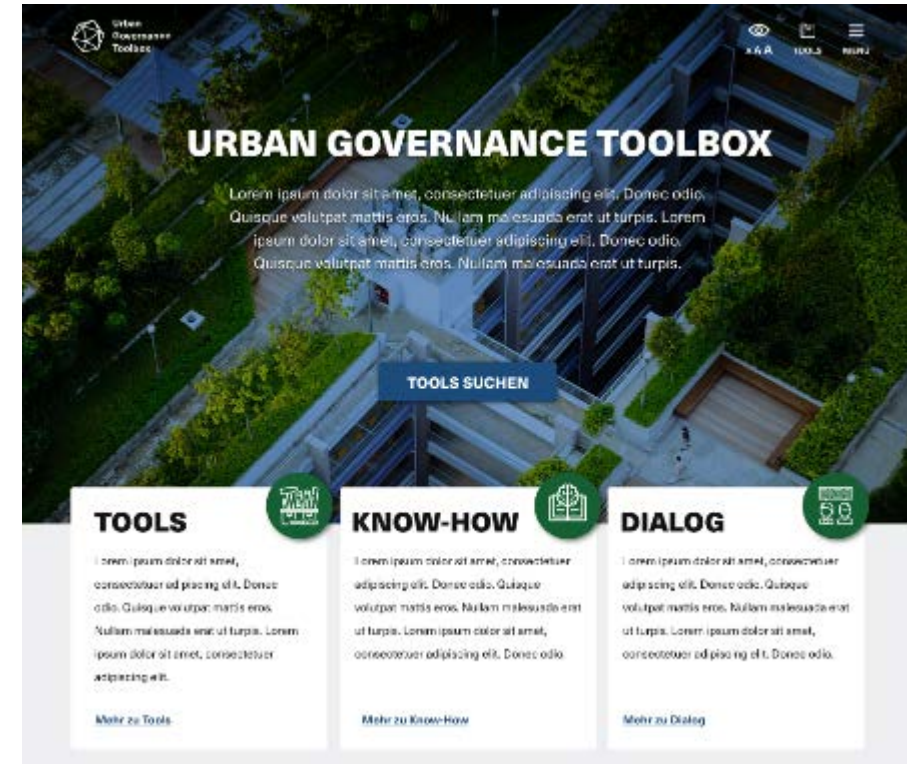
THE TOOLBOX FOR A CLIMATE-FRIENDLY CITY

➤ Decision and action makers can specifically search for tools for

- Challenges like heavy rain

- Search for adaptation goals such as qualification of colleagues

➤ The individual tools refer to concrete use cases

THE TOOLBOX FOR A CLIMATE-FRIENDLY CITY

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THE TOOLBOX FOR A CLIMATE-FRIENDLY CITY

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    o Challenges like heavy rain

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TOOL REAL LABORATORY


Source: Fraunhofer IAO

Application

➢ 2020/21 in Halle (Saale) and Mannheim)

➢ Practical experience University of Stuttgart with a living lab for sustainable mobility culture

TOOL HEAT ACTION PLAN

Preparations: City climate analysis

➢ Plan is being developed within the framework of the Mannheim real laboratory 2020

➢ Target group vulnerable groups

o Interdepartmental working group within the administration
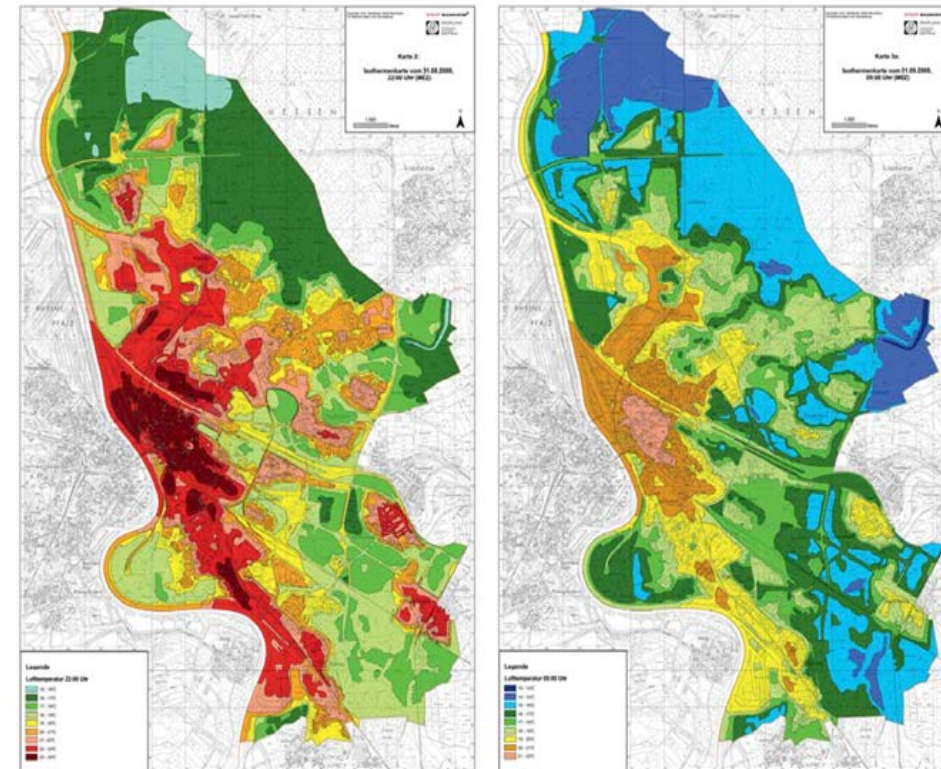
Source: Stadtklimanalyse Mannheim 2010

PEER-TO-PEER LEARNING

come together and be a part of the process

Source: © Rawpixel - Fotolia

- **Members**
  - municipalities/ cities
  - Science
  - Practice

- **Aims:**
  - recognize and analyze common challenges,
  - identify best practices
  - working solutions
  - learn from each other

Your contact at IAT

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The Leipzig Smart City Unit – Institutionalizing the smart city topic in the city organization

Nadja Riedel

Senior Project Manager

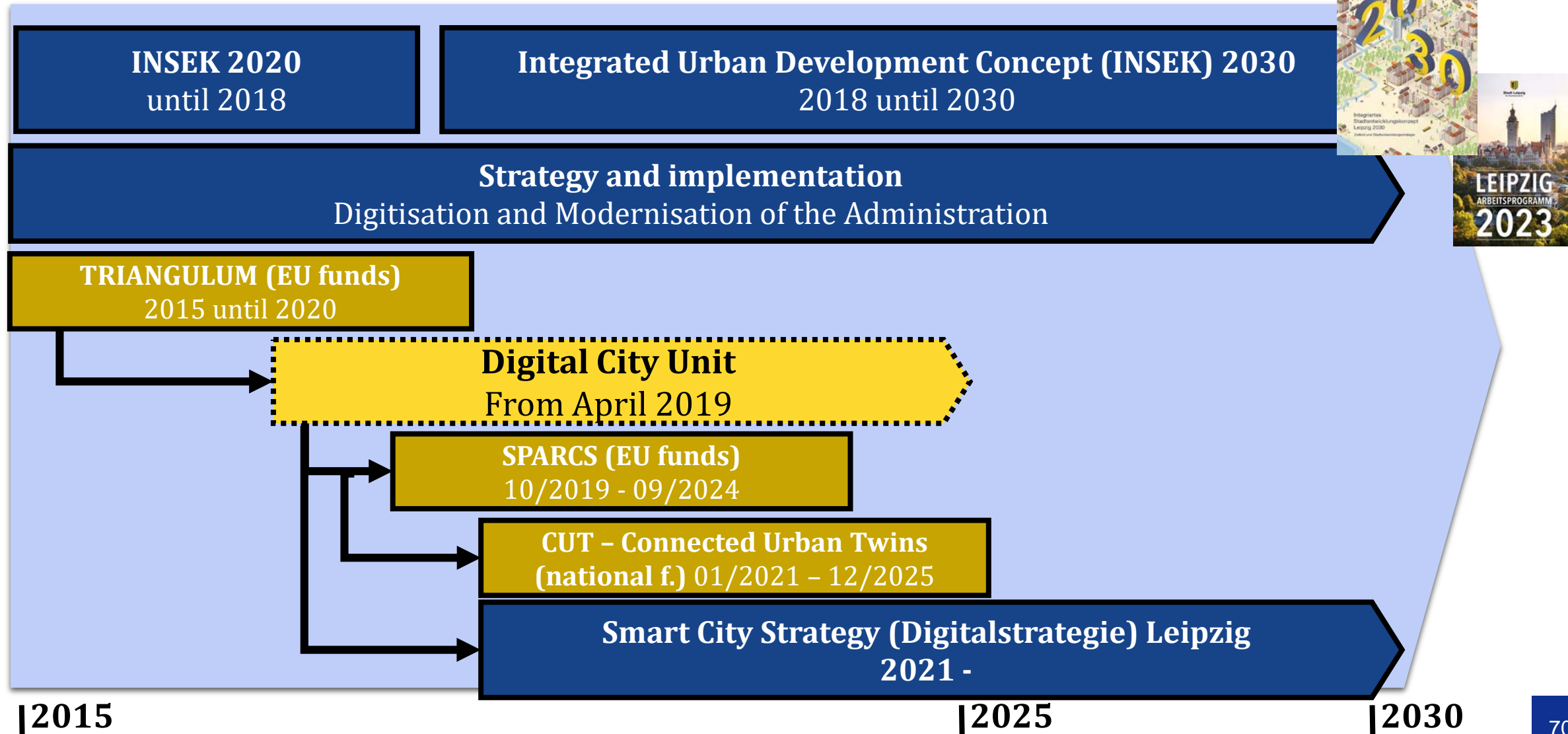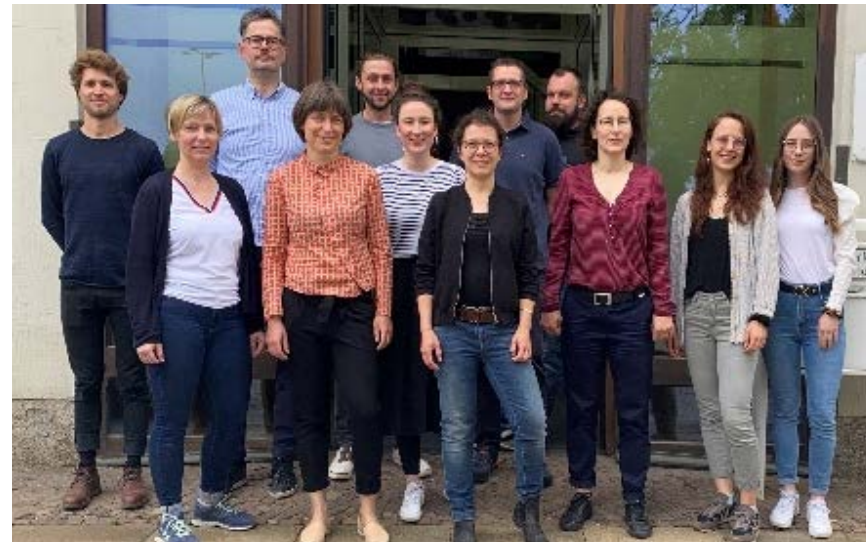Digital City Unit, City of Leipzig

Leipzig – a short intro

Urban Development and Smart City process in Leipzig

INSEK 2020
until 2018

Integrated Urban Development Concept (INSEK) 2030
2018 until 2030

Strategy and implementation
Digitisation and Modernisation of the Administration

TRIANGULUM (EU funds)
2015 until 2020

Digital City Unit
From April 2019

SPARCS (EU funds)
10/2019 - 09/2024

CUT – Connected Urban Twins
(national f.) 01/2021 – 12/2025

Smart City Strategy (Digitalstrategie) Leipzig
2021 -

| 2015

| 2025

| 2030

Digital City Unit

- It is a competence centre for digitization within and for the city administration as well as external actors such as enterprises, civil society and science. The unit has an interface function between the municipality and its subsidiaries (public utilities and other enterprises).

- Establishment of new participation formats

Topics and projects Digital City Unit 2021

Stadt Leipzig
Referat Digitale Stadt

Strategy

- Smart City Strategy (Digitalstrategie) – overall strategy

Data and Systems

- Urban Data Platform
- Funding project: Smart City pilot city: Connected Urban Twin with Hamburg & Munich
- LeipzigApp/ID Ideal

Networks and sensors

- Concept „carrier infrastructure"
- Concept for public wifi and local broadband
- EU-Project EfficienCE: energy-efficienct public transport infrastructure planing

Energy transition

- EU-Project Urbis: upscaling intelligent energy systems
- EU-Project SPARCS: Sustainable energy positive & zero carbon communities

Digital participation/ circular economy

- Hardware for Future

Innovation development

> Digital Campus
> > Campus Zentrum
> > Data competence center
> > Smart City Challenge Leipzig
> > Competence Center

Civil society

# SPARCS - Sustainable energy Positive & zero cARbon CommunitieS

- **EU funded project (Horizon 2020 – Smart Cities and Communities program)**

- **duration:** 10/2019 – 09/2024

- **Lighthouse cities**: Espoo (FI) und Leipzig

- **Fellow cities**: Kifissia (EL), Lemberg (UA), Kladno (CZ), Maia (PT) und Reykjavik (IS)

- partners from **science** (Fraunhofer Gesellschaft, VTT, …) and **industry** (u.a. Kone, Siemens)

- Project budget: 19,1 Mio. €

- Budget for Leipzig consortium: 7,1 Mio. €

www.sparcs.info

www.digitalesleipzig.de
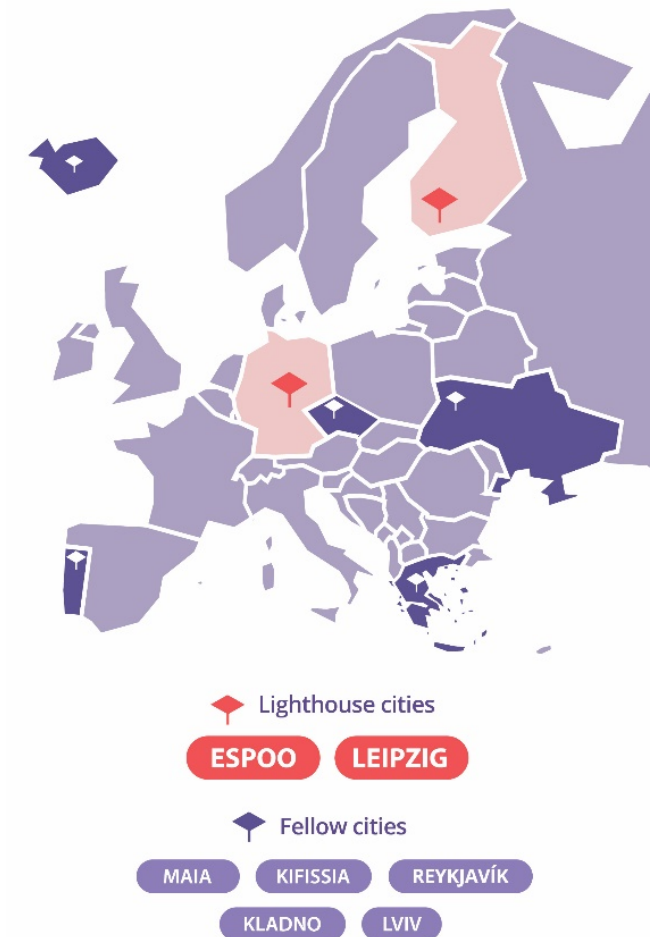
# Project goals: development and testing energy positive districts

- Development of innovative solutions and approaches for urban change towards citizen-centred CO_2-free ecosystems to improve the quality especially of life

- Development and verification of innovative solutions for the planning, deployment and dissemination of integrated energy systems

- **Central question: How can energy positive districts be planned, implemented and disseminated in a socially acceptable way?**

Starting points for the development of PEDS
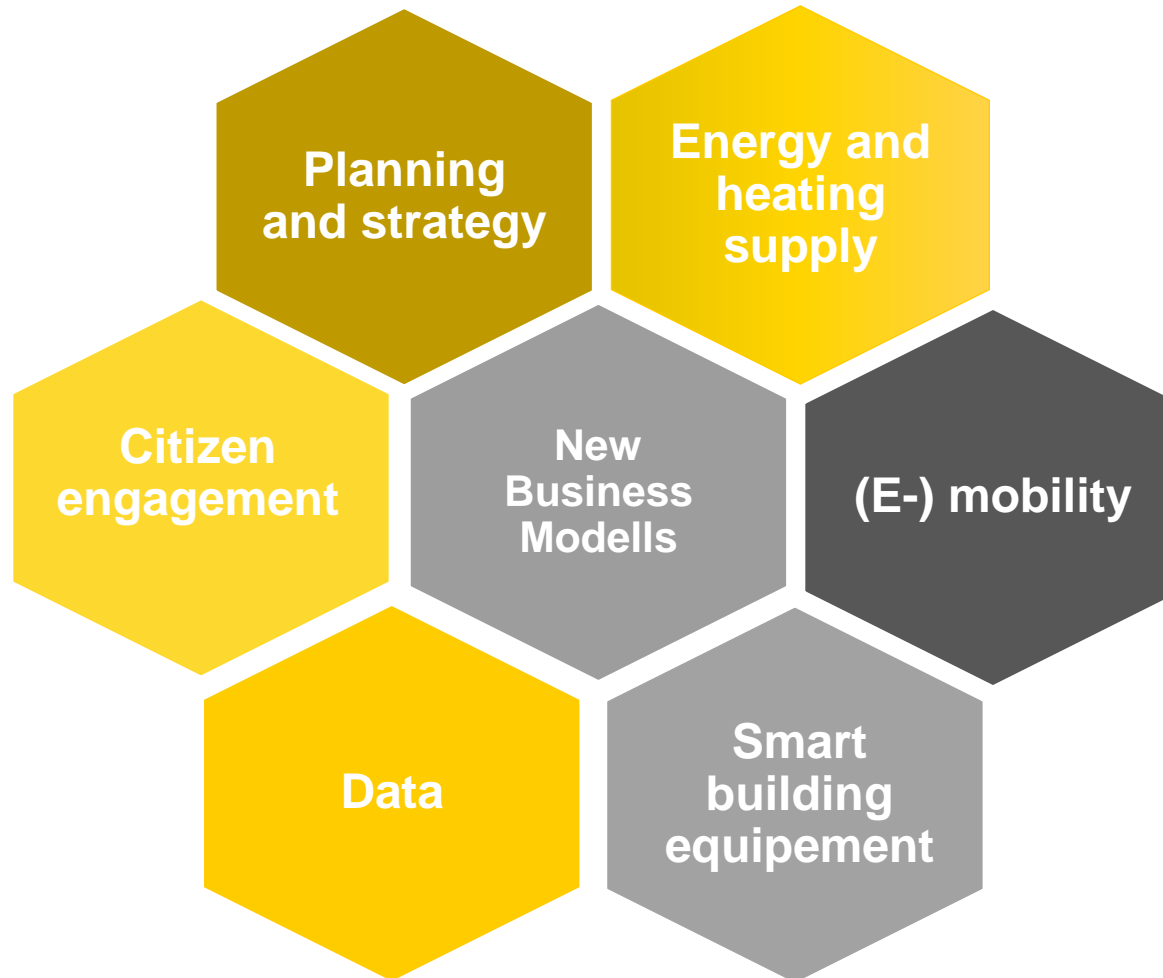
Thank you for your attention!

Stadt Leipzig
Referat Digitale Stadt

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www.digitalcampus.leipzig.de

The MGI Webinar Series (tentative schedule)

- Linking COVID-19 response to climate action (January 2021)

- **Smart city policies (March 2021)**

- Integrated planning for resilient cities – tools and approaches (May/June 2021)

- Adapting to climate change – urban water management (October 2021)

- Ecosystem services and nature-based solutions (December 2021)

- Climate mitigation in the mobility sector (February 2022)

- Smart city finance & procurement (April/May 2022)

Stay updated!

http://www.mgi-iki.com/

/morgenstadt-global-smart-cities-initiative

Contact: Sophie Mok (sophie.mok@iao.fraunhofer.de)

/morgenstadtglobalsmartcitiesinitiative