PolyUrbanWaters
Concept for Kratié

May 2020

Polycentric approaches to the management of urban water resources in South-East Asia

Pilot Cities

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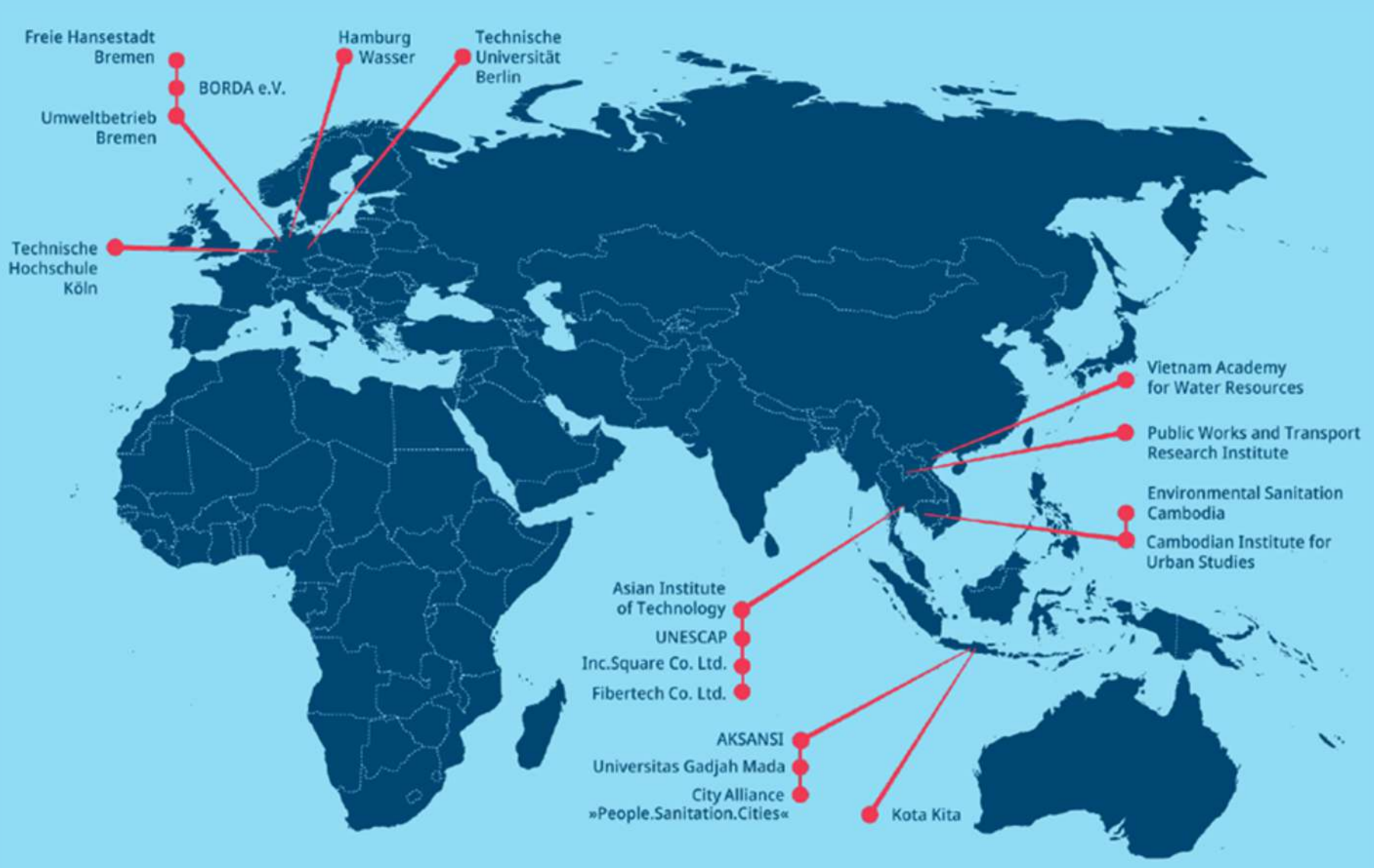
Project Partners



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Sep ’19 – Jan ’20
Initial research activities, including team visit

Jan – Mar ’20
Site analysis

Feb ‘20
Launching at World Urban Forum 10

Mar ‘20 - ongoing
Development of PUW Strategies for Kratié

2021-2025
Research & Development Phase




PolyUrbanWaters

1. Results of assessment process of development challenges in Kratié

2. Water-sensitive urban Kratié: a development opportunity for the city

3. How the project PolyUrbanWaters can support the development of a water-sensitive Kratié

4. Polycentric approaches to the management of urban waters in Kratié

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Results from the project team visits to Kratié:

- Introduction of the project team and vision to local government of Kratié
- Understanding of local planning priorities and practices
- Identification of key challenges related to urban water management in Kratié

What is happening now:

- Analysis of needs and challenges of urban waters management in Kratié
- Definition of the approach for Kratié - how can Kratié benefit from the PolyUrbanWaters project?
- Specification of the outputs and activities

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Development in Kratié

Current urban development challenges

- Enhance ability to safeguard against climate change impacts on urban waters, primarily increased flooding
- Balance urban growth
- Improve ability to manage pressures that stem from population increase
- Increase tourism potential
- Strengthen ability to capitalise on economic opportunities as a regional economic hub and location within in the Greater Mekong Sub-region Development Program

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Development in Kratié

Water related development challenges

- Regular and more frequent flooding in various parts of the city
  - Reduced mobility, reduced access to education, work and commerce
  - Damages to public infrastructure (roads, bridges, dikes)
  - Public health threat
  - Floods as a limiting factor for economic growth
- Increasing demand for quality provision of water related public services (effective wastewater and waste management systems)
- Loss of water relevant ecosystems

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Water Sensitive Kratié - Living With Water

- Kratié can reduce its vulnerability to the dynamics of the larger water bodies around it.
- Kratié can further develop its capacity to effectively handle and manage its various water processes, thus having desirable impacts across sectors and ultimately *enhancing the city's functionality and livability*.

Water-sensitive Kratié: a Development Opportunity for the City

1. Strengthening **resilience to climate change** impacts with a focus on **flood resilience**
2. Improving **water security**
3. Protecting **water bodies** and **public health**
4. Creating an enabling environment for **private and public investment** and **access to potential funding lines**
5. Being involved in an **international network of practitioners** that support the localization of SDGs and the New Urban Agenda

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Key Project Outcomes and Associated Outputs of PolyUrbanWaters

A **Kratié has instruments to initiate water-sensitive development**	**Tools & methods for "Polycentric Approaches for Water-Sensitive Kratié"** are co-developed, elaborated and tested in selected locations
B **Kratié has the capacities for water-sensitive planning and development**	**Capacities for water-sensitive planning and development in Kratié:** • strategic planning and informed decision making by the local government • strengthened co-production schemes in selected locations with communities, local government, civil society, water operators and private sector
C **Results of Kratié process are disseminated on national and SEA level**	**Tools & methods for "Polycentric Approaches for Water-Sensitive Kratié"** • are reflected in strategic papers of public entities of Kratié and Cambodia • contribute to an economic/political/academic discourse in Cambodia and SEA

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Outcome A: Proposed Outputs

... that build on and strengthen existing processes, practices and technical resources

OUTPUT 1	**Baseline Analysis *"Water in Kratié 2021"***
OUTPUT 2	**Visions for *"Kratié in 2030 and 2045"***
OUTPUT 3	**Strategic Pilot Model No. 1: for integrated water management in urban expansion areas**
OUTPUT 4	**Strategic Pilot Model No. 2: for stormwater management and wastewater management by utilizing ecosystem approaches**

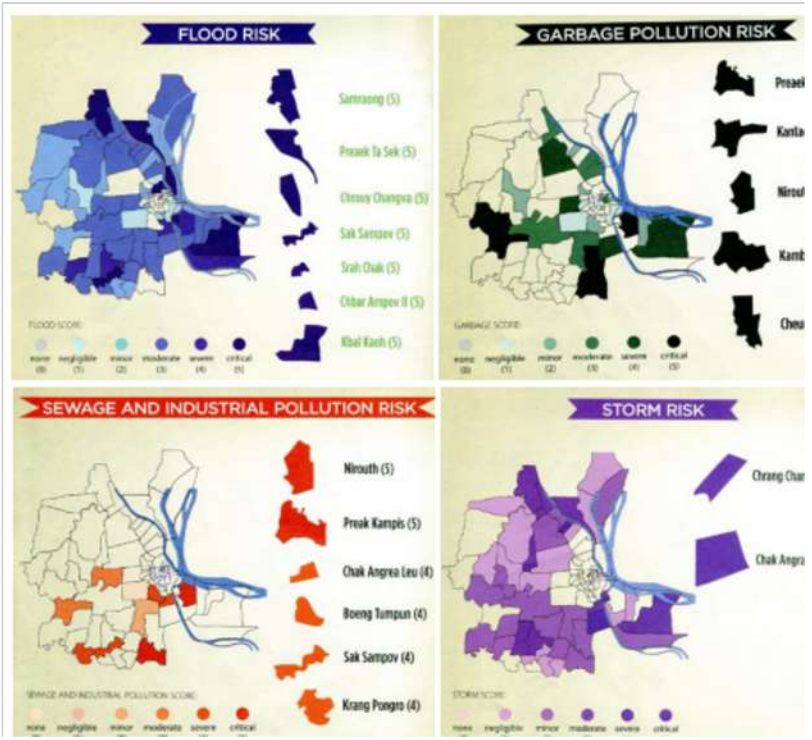
How are we going to achieve these outputs?

Output 1: Water in Kratié 2021 (Baseline)

Understand the current situation, emerging risks and opportunities

Assessment of existing:

- Water resources (availability, demand, quality)
- Risks (mapping of flood, health, economic, ecologic risks)
- Benefits from nature
- Urban planning approaches (instruments and methods)
- Challenges and opportunities for the city



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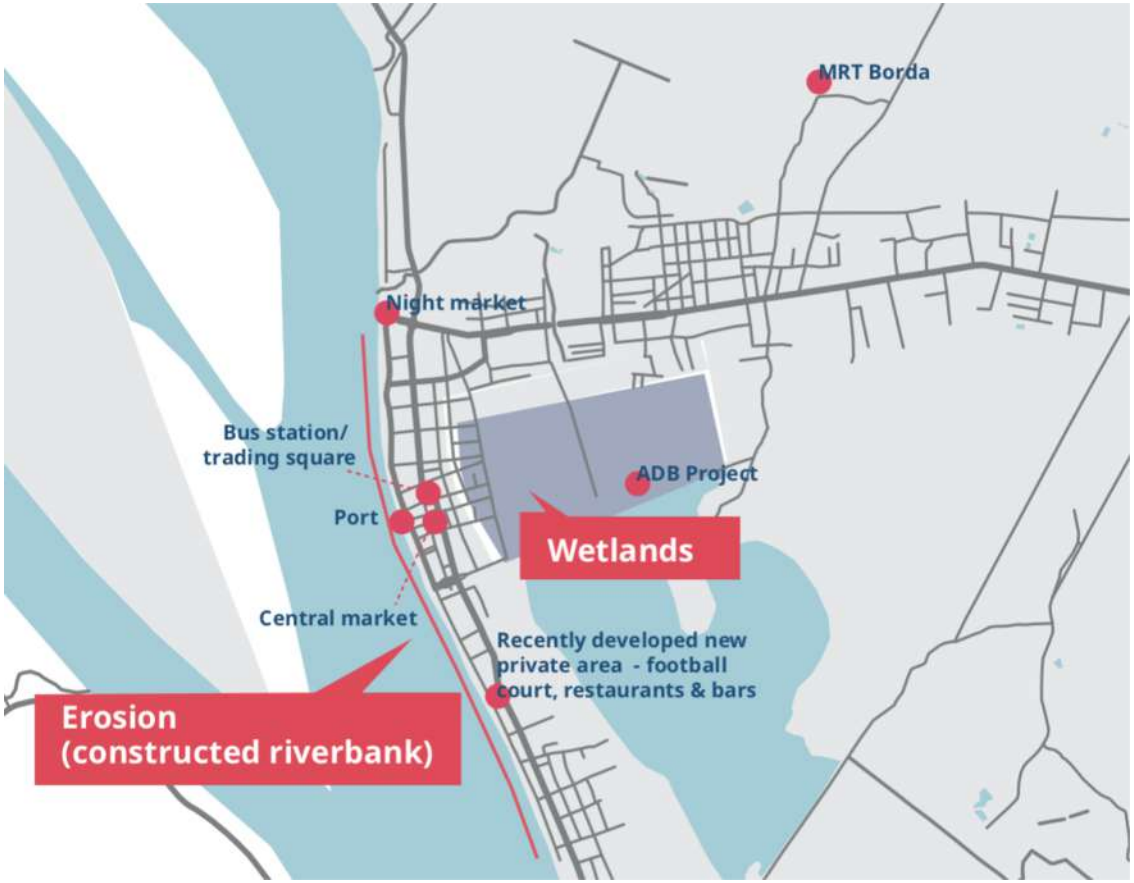
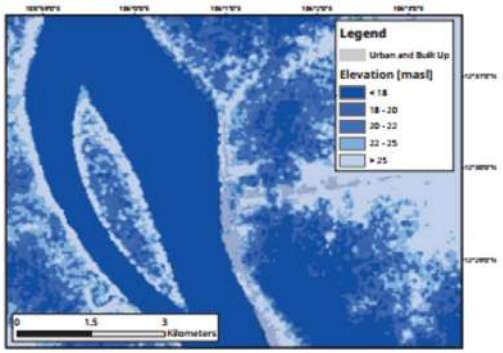
Output 1: Water in Kratié 2021 (Baseline)

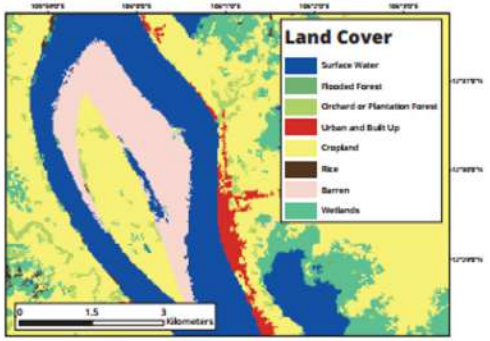
Understand the current situation, emerging risks and opportunities



Topography



Land Cover (2018)



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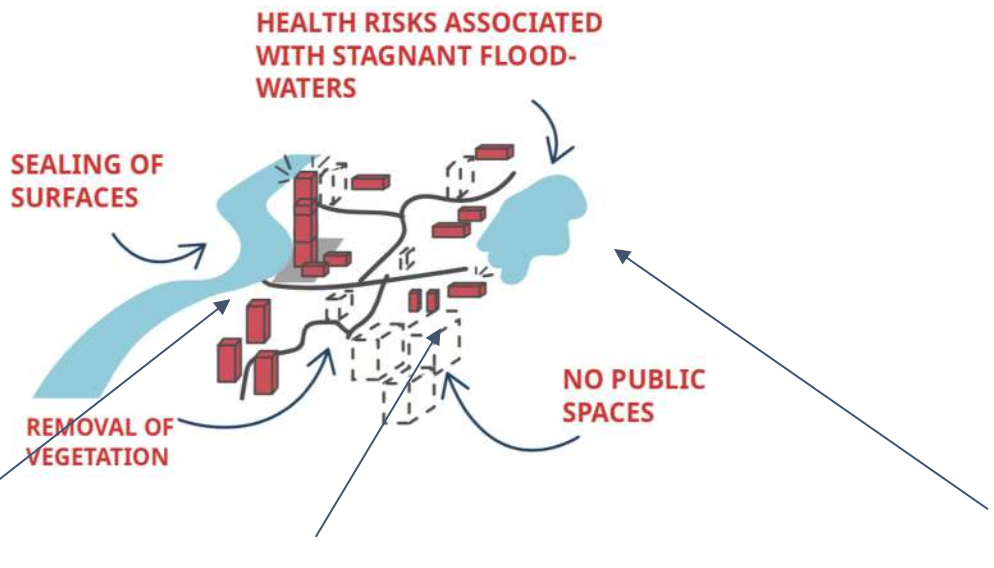
Output 2: Vision Building

How will the city look in 2030? In 2045?

Urban Planning scheme
"Business as usual"



High vulnerability of **public and private assets** to flooding events and climate change impacts

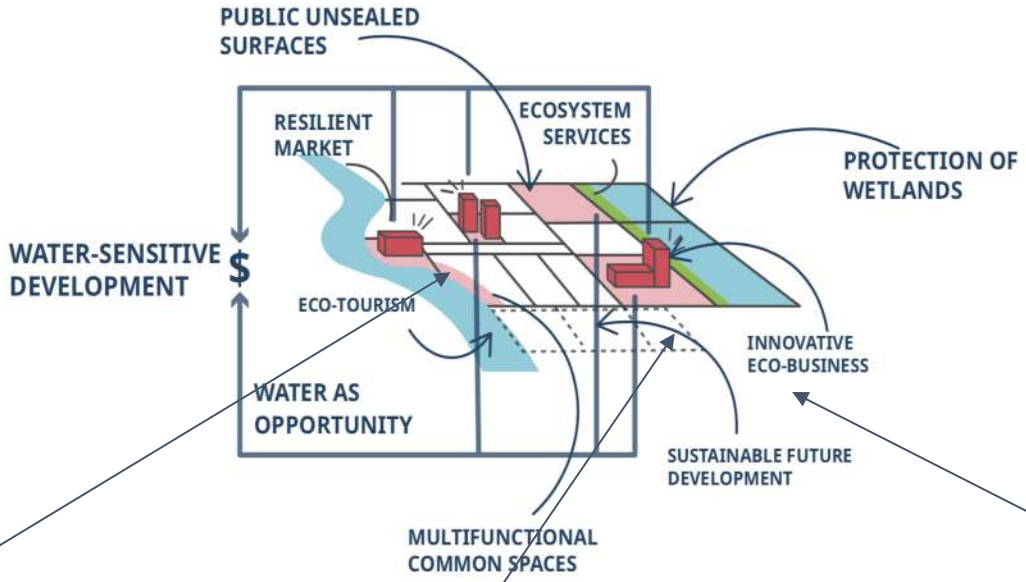
Decreasing **livability** of the city for its citizens

Decreasing attractiveness of the city for tourism because of deterioration of **ecosystems**

Output 2: Vision Building

How will the city look in 2030? In 2045?

PLANNED URBAN DEVELOPMENT
with a water-sensitive approach



Planned developments help **reduce demands, improve water storage, integrate stormwater systems**, etc.

Vegetation helps improve **water quality, flood resilience** and supplies ecosystem services

Planning for eco-tourism prioritizes **ecosystems** and supports business growth

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Output 3: Strategic Pilot Model 1 for integrated water management in urban expansion areas

An integrated water-sensitive planning model with tools and instruments that are transferable will be developed and tested in priority urban locations

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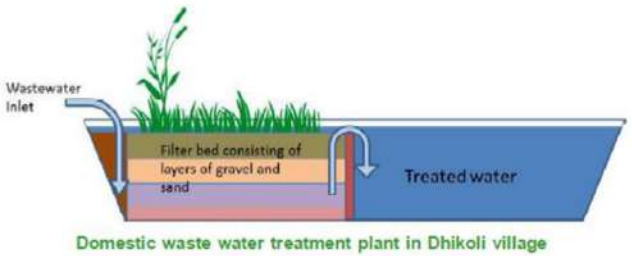
Output 4: Strategic Pilot Model 2 for integration of stormwater management and wastewater management by utilizing ecosystem approaches



Domestic waste water treatment plant in Dhikoli village

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Outcomes B and C: Proposed Outputs

... that build on and strengthen existing processes, practices and technical resources

OUTPUT 5	**70 officials for water infrastructure development (including urban planners), predominantly in Kratié, are trained on water-sensitive urban development**
OUTPUT 6	**Support for the establishment of 1 model of co-production between public entities, private sector actors and communities**
OUTPUT 7	**2 Tools elaborated in Kratié are reflected in recommendations and standards of Cambodia's government and/or business associations**
OUTPUT 8	**Experiences made and tools elaborated in Kratié are discussed in policy papers in SEA-context**

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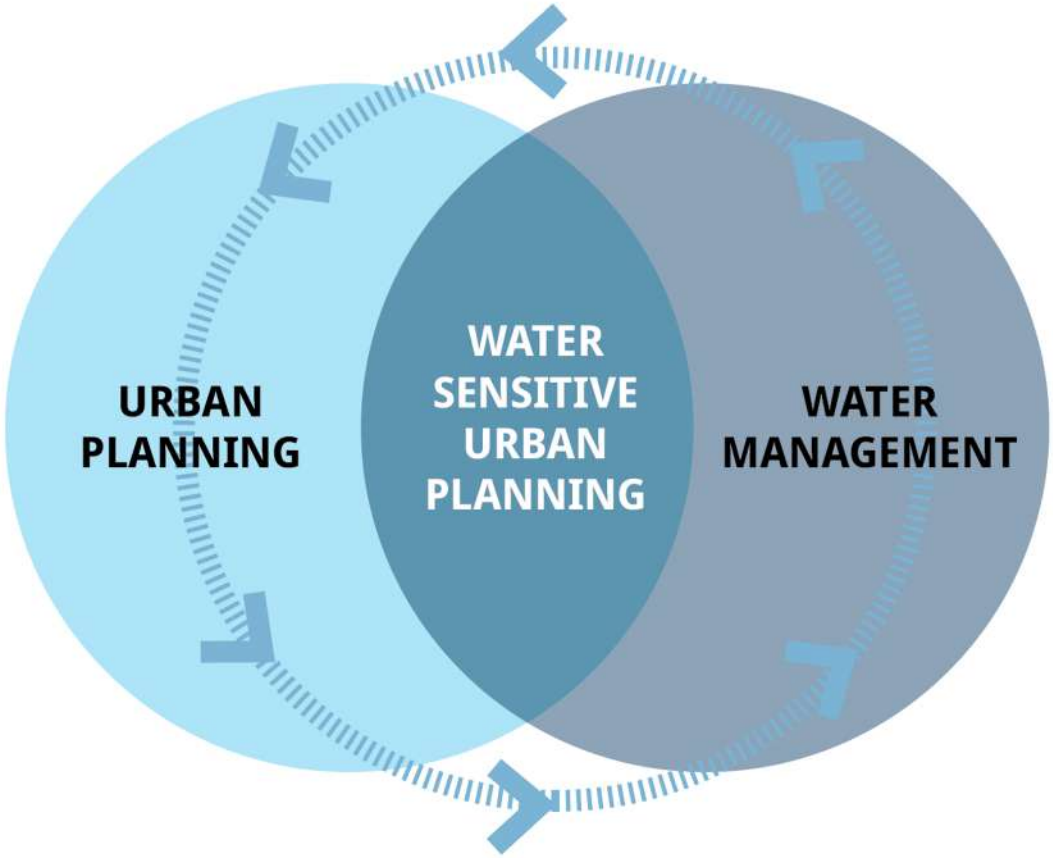
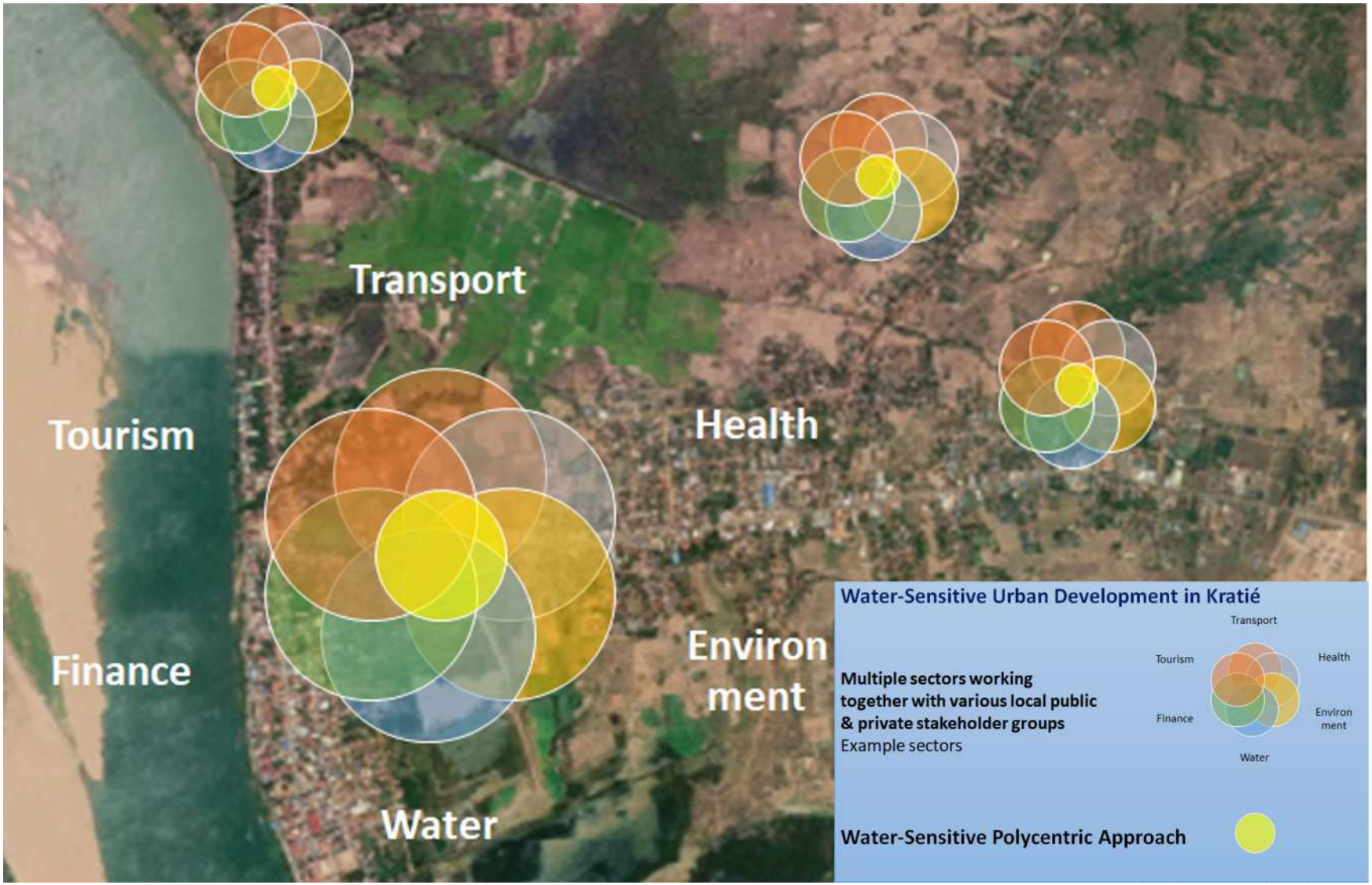
Polycentric approaches for the management of urban waters – combining urban design and integrated water management



- Development steps are in line with **local capabilities** and **resources**
- Development steps can be aligned **with existing planning processes**

What is the Polycentric Approach?



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Elements of the Polycentric Approach

- **Stakeholder cooperation**
  - Multiple sectors, local government and numerous community groups work together in planning and decision-making for development of multiple sub-centres (e.g., villages) in a city/district
- **Appropriate Technology**
  - Integration of centralized and decentralized approaches to water management
- **Customized Solutions**
  - Integration with and building on existing capacities and processes that already function and are valued by local government, water operators and communities
- **Multidisciplinary cooperation**
  - Integration of planning, technical, institutional, financial and cultural parameters in the approach
- **Water sensitive approach**
  - Integration of urban planning with water management
- **Step by step approach**
  - Improvements are made progressively, over a long time and in line with local capabilities and resources

Thank you for your attention!

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Appendix

Development dynamics in Kratié and its impact on water resources

DRIVERS
- Climate change + extreme weather events
- Infrastructure development
- Regional economic integration
- New investments
- Urban expansion
- Changing flow regime of Mekong river

RESPONSE
- Integrated water-sensitive urban planning
- Multifaceted water-sensitive infrastructure development
- Multi-stakeholder engagement
- Sustainable financing and operation

PRESSURES:
- Sealing of surfaces
- Increasing waste production
- Surface water pollution
- Removal of wetlands and forests

IMPACT:
- Economic impact of flooding
- Environmental damages
- Lack of water security
- Threats to public health
- Damage of public and private assets
- Loss of 'livability'

STATE:
- Frequency and hazard of flood events
- Reduced water availability
- Untreated wastewater
- Poor sanitation
- Infrastructure vulnerable to water

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References

Slide 7, figure (bottom right): …

Slide 8, photos: …

Slide 10, figure (left): …

Slide 10, figure (right): …

Slide 15, photo (top left): Denver Post, 2019. Accessed on 05.04.2020 via: https://www.denverpost.com/2019/11/10/zanzibar-tests-drones-spraying-rice-fields-malaria/

Slide 15, maps: BORDA 2017, *Pre-Feasibility Study Investment Action Plan for Wastewater Treatment in Peri-Urban Areas of Phnom Penh (IAPWT)*

Slide 19, figure (bottom right): BORDA 2017, *Dewats Systems*.

Slide 20, figure (top left): Development Alternatives Newsletter, 2016. Accessed on 05.04.2020 via: https://www.devalt.org/newsletter/jun16/of_2.htm

Slide 20, figure (top right): BORDA, Accessed on 07.04.2020, via: https://www.borda.org/solutions/

Slide 20, photo (bottom): Wetlands CSO Treatment. Accessed on 18.05.2020, via http://lochgroup.com/project/constructed-wetlands-for-cso-treatment/

All other photos and graphics were taken / created by members of the PolyUrbanWaters project team