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Understanding urban climate vulnerability

Strengthening Urban Climate Governance Project (SUCCESS) Activity 1.1



Maastricht University



This presentation

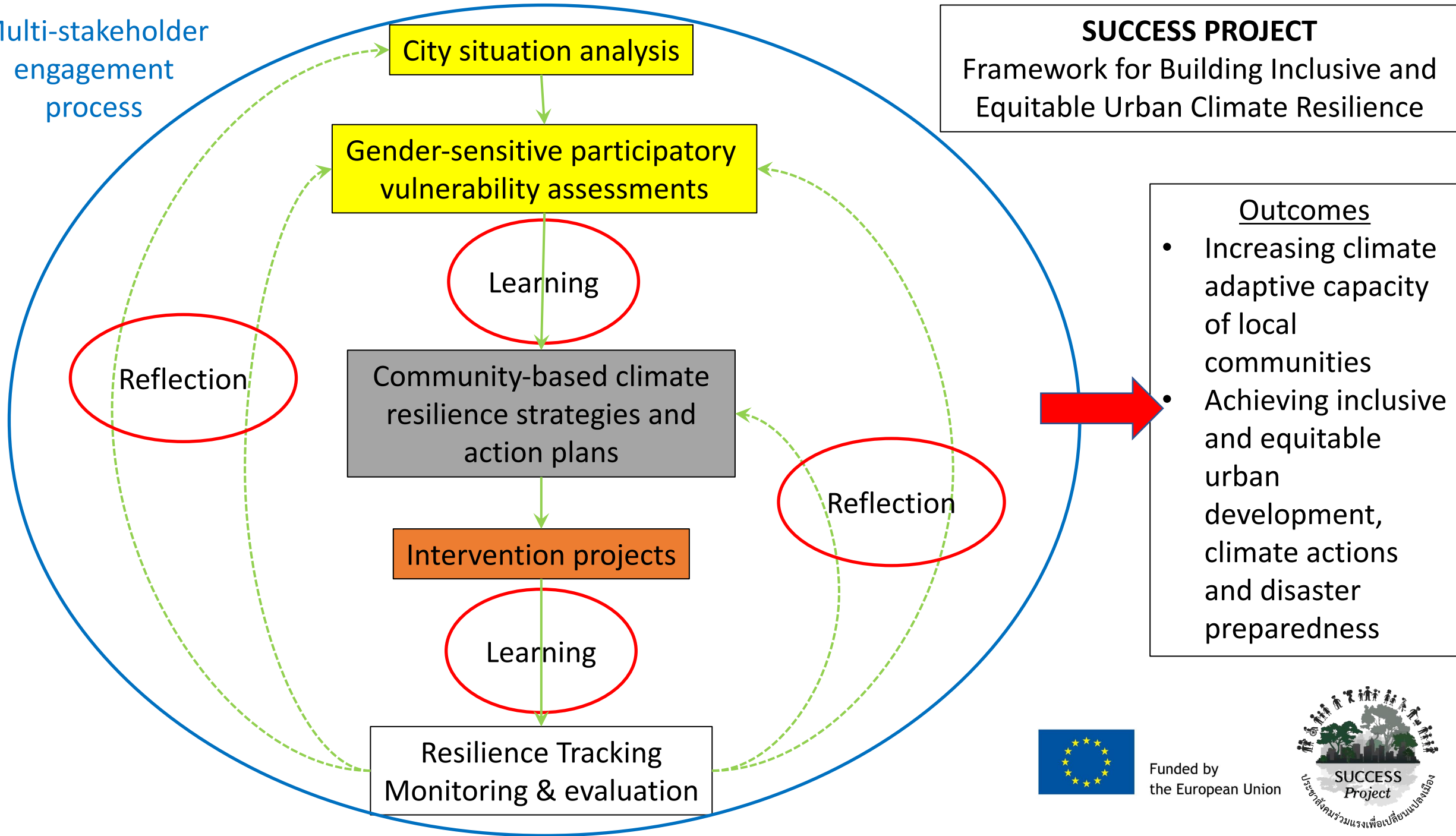
1. SUCCESS Project Framework
2. Urban Climate Vulnerability Assessment Framework



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Multi-stakeholder
engagement
process



Urban Climate Vulnerability Framework

- Urban and urbanisation
- Climate change
- Urban climate vulnerability



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Urban Climate Vulnerability Framework

- To analyse and understand key drivers of urbanisation and physical, social, economical and environmental implications of urbanisation
- To understand risks and impacts of climate change
- To identify root causes of vulnerabilities



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Urban Climate Vulnerability Framework

- People-centred approach
- To understand the differences between different community groups in the urban context (e.g. low-income, urban poor, marginalised, women, disabled and elderly groups) in terms of access to urban systems and infrastructure, climate and disaster impacts, implications of urbanisation

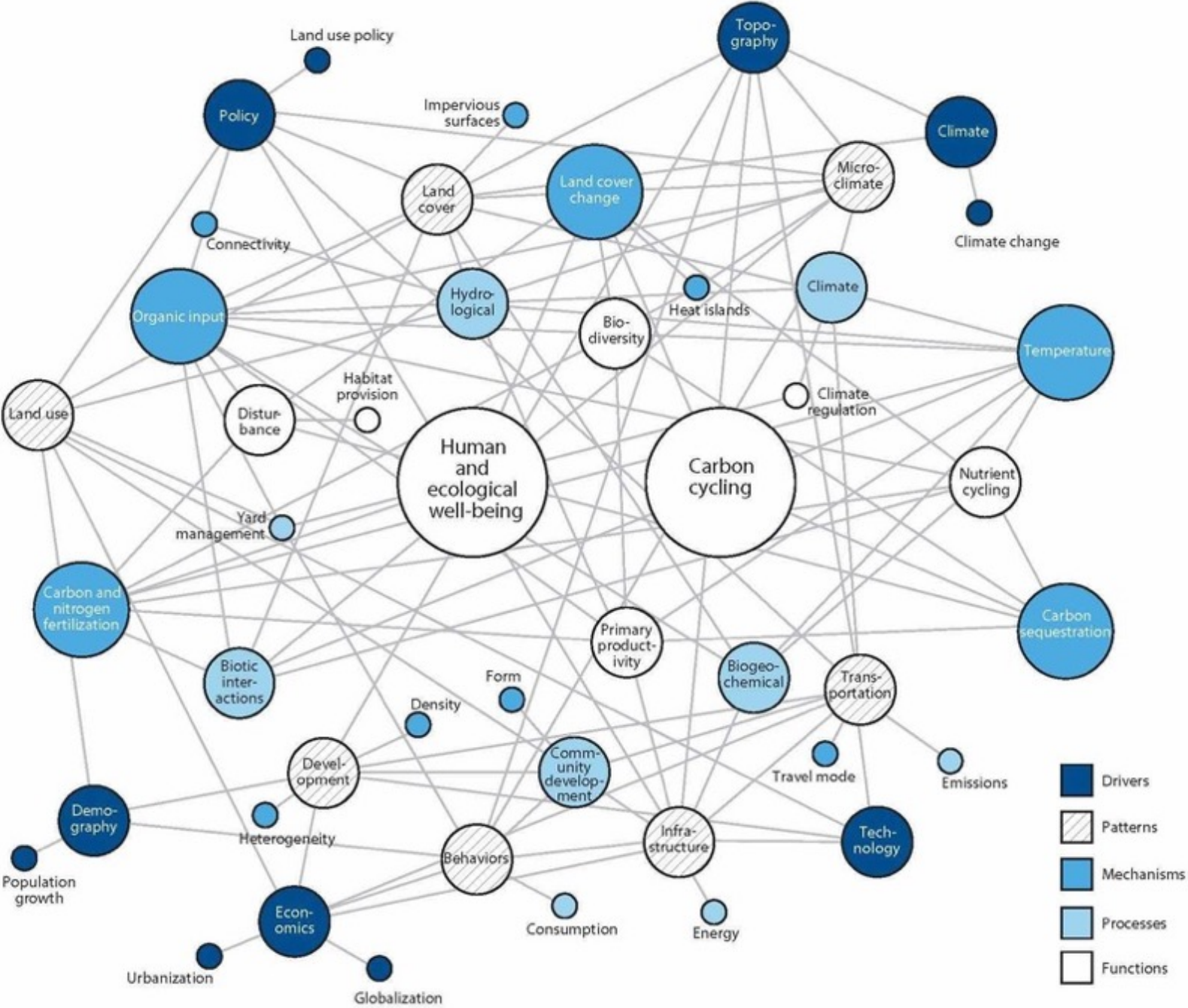


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Urban Climate Vulnerability Framework

Urban



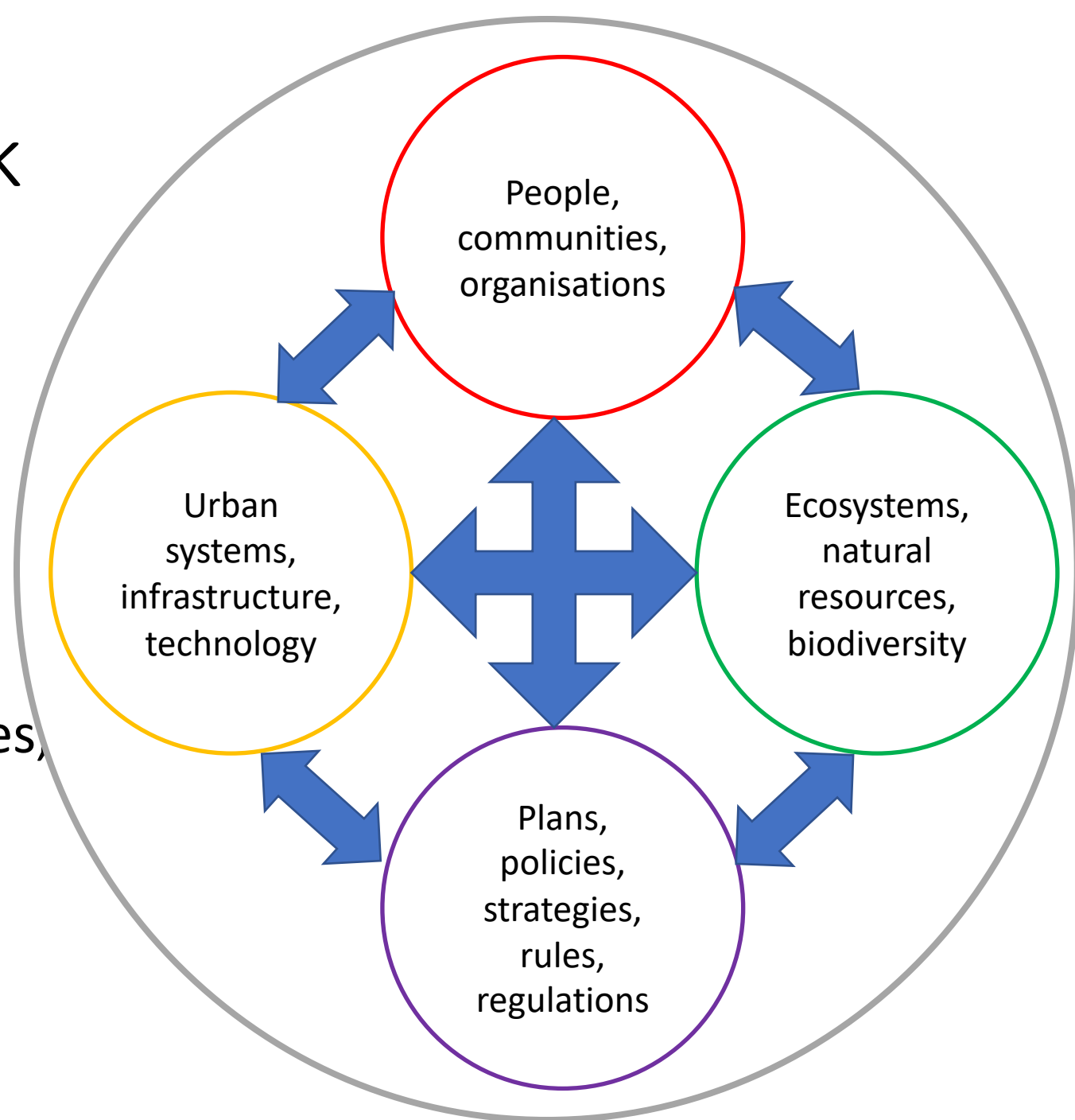
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Urban Climate Vulnerability Framework

Urban

- Agents – people, gov officials, community groups, organisations
- Urban systems and infrastructure
- Ecosystems
- Institutions - policies, plans, strategies, law, regulations, formal and informal practices



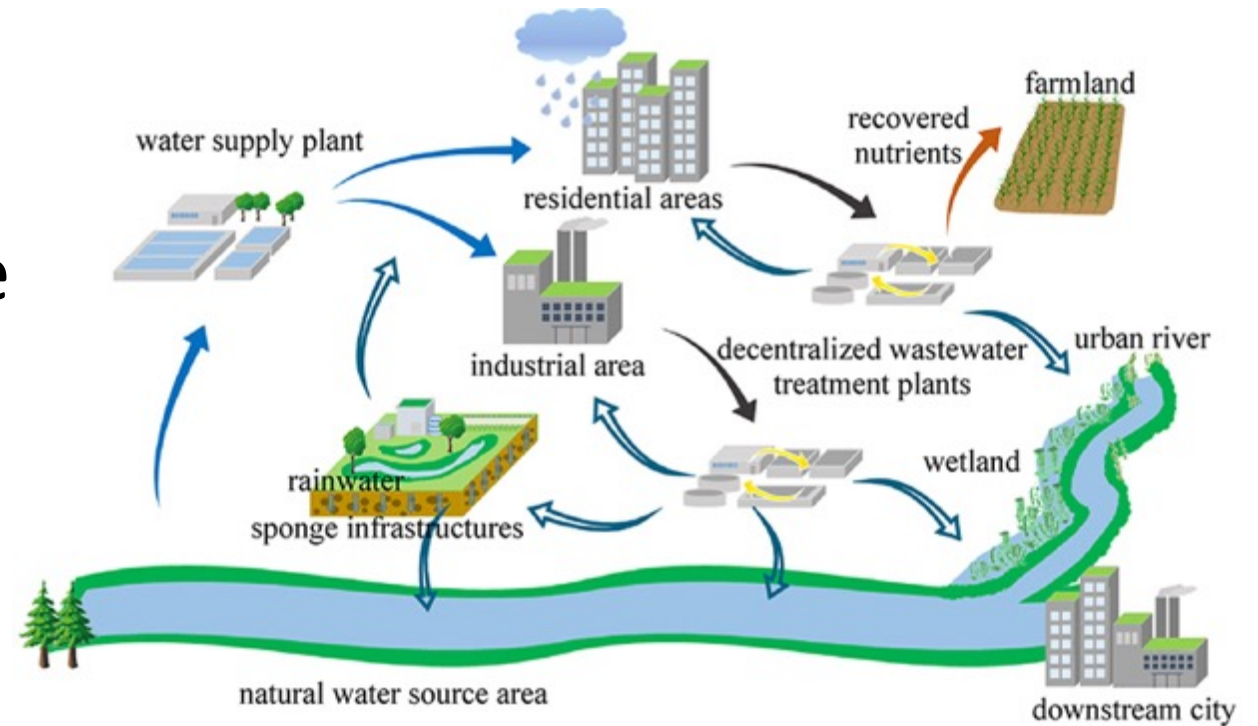
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Urban Climate Vulnerability Framework

Urban – Water System (example)

- Agents – water users
- Urban systems and infrastructure
- Ecosystems
- Institutions - policies, plans, strategies, law, regulations, formal and informal practices



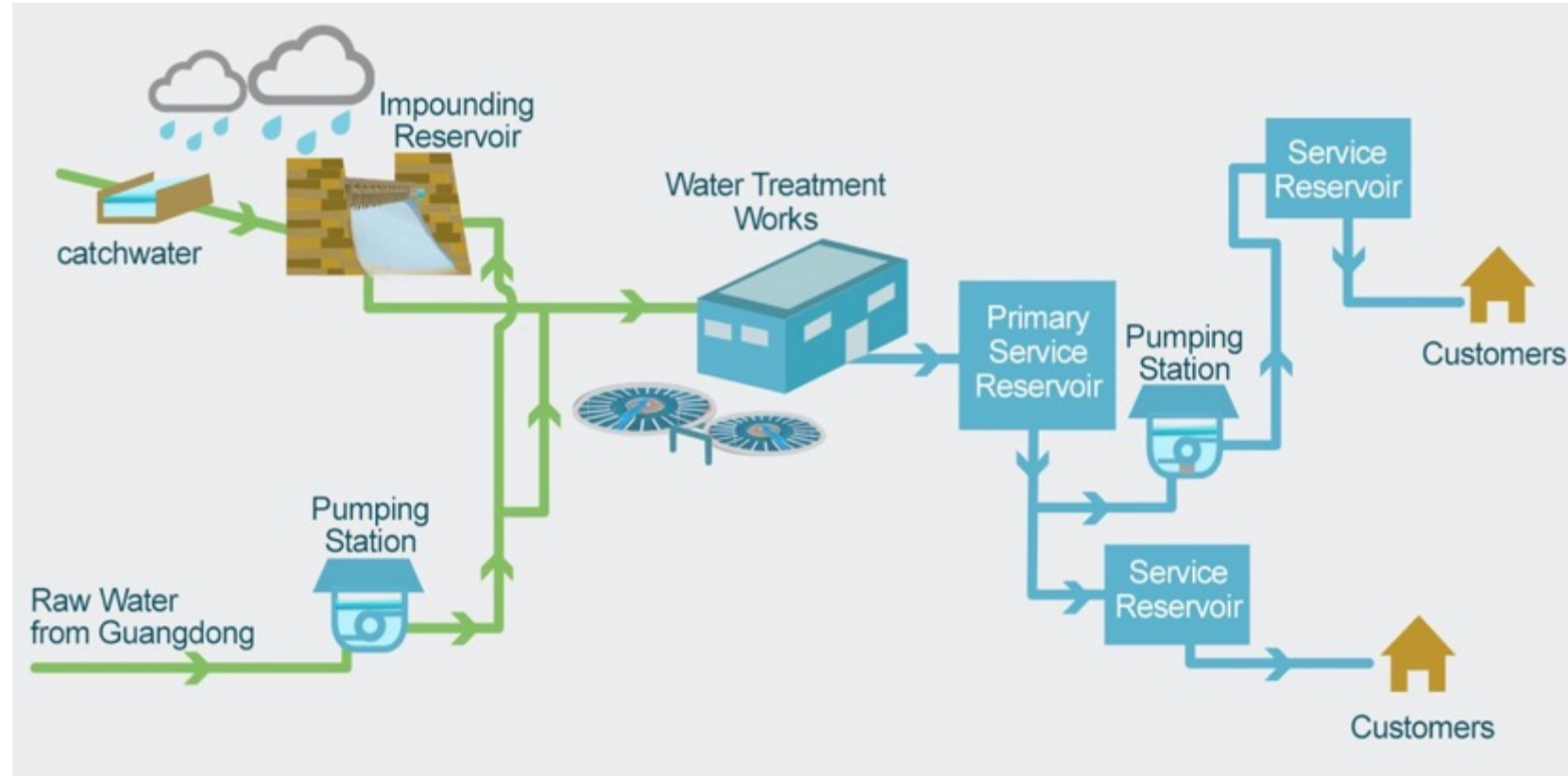
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Urban Climate Vulnerability Framework

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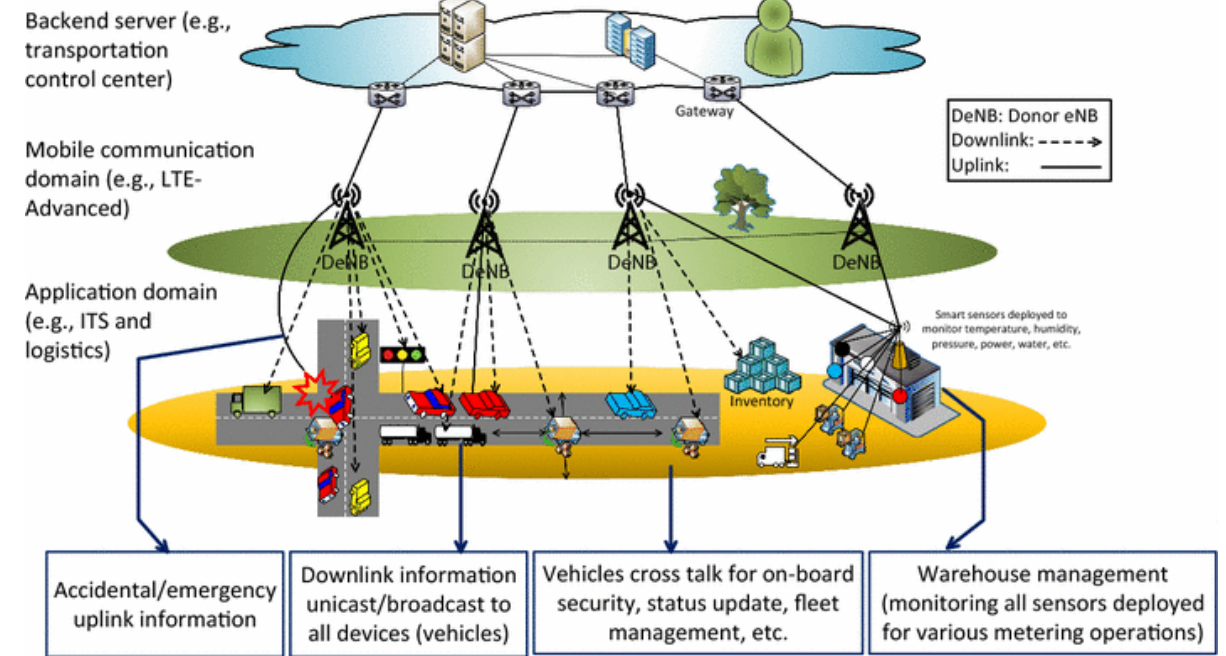
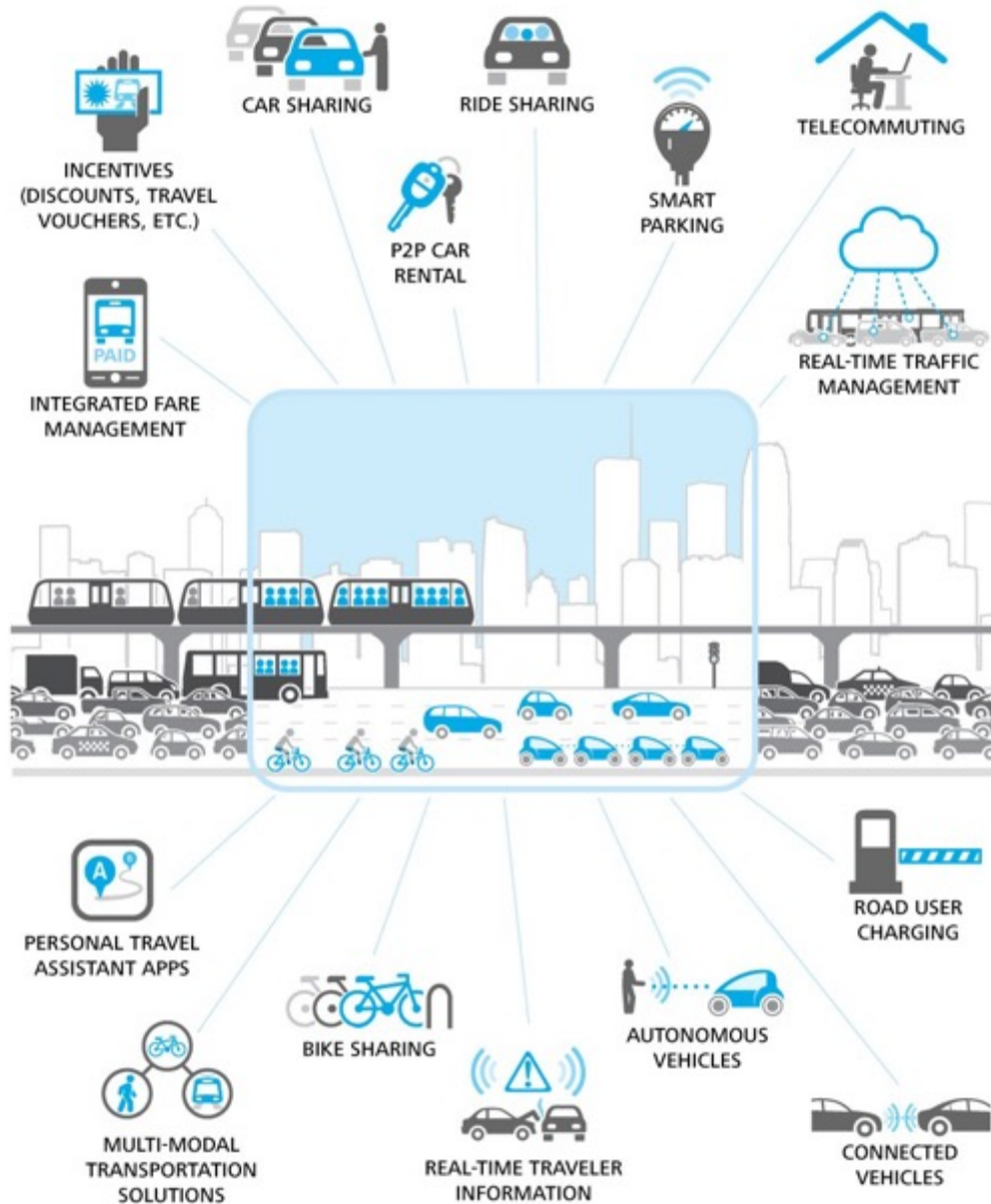


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Figure 3. Battling urban gridlock

There's no silver bullet solution to the problem of gridlock—next generation urban transport systems will connect transportation modes, services, and technologies together in innovative new ways that pragmatically address a seemingly intractable problem.



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Figure 5 Mapping critical urban system
- water system example

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Weaknesses – water system (example)

Different levels and scales

- Households with inadequate water storage
- Water pipes without maintenance, high leakage
- Lack of collaboration and coordination across government agencies and departments responsible for water and water resource management
- Lack of integrated water data
- Inadequate sources of water at city level



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Water system (example)

Cascading effects and linkages between urban systems

- No electricity = no water pumps = no water supply
- No water = no farming = no food supply
- No rain upstream area = low water level in dams = no water downstream area
- No transport = no truck delivery = no water



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Urban Climate Vulnerability Framework

- Participatory approach to assessing vulnerability
- Need to involve different community groups
- Need to understand the differences in terms of access to and dependence on urban systems and infrastructure and uneven impacts of urbanisation, climate and disasters – and why



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Urban Climate Vulnerability Framework

People-centred approach

- Family / household / community group
- Income
- Daily expenses
- Access to basic services and provisions e.g. water, electricity, housing, food
- Access to healthcare, education



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Urban Climate Vulnerability Framework

People-centred approach

- Family / household / community group
- Situation A = Under the same flood event (same past experience)
- Before, during and after flood event
- Preparedness
- Levels of impacts from the same flood event
- Recovery



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Urban Climate Vulnerability Framework

People-centred approach

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Urban Climate Vulnerability Framework

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Urban Climate Vulnerability Framework

People-centred approach – to understand the differences

- Family / household / community group
- What happens if cannot work for 1 day
- What happens if cannot work for 1 week
- What happens if no running water for 1 day
- What happens if no running water for 1 week
- What happens if flooded for 1 day
- What happens if flooded for 1 week



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People-centred approach – to understand the differences

Family / household / community group	1	2	3	4	5	6
Income						
Daily expenses						
Access to basic (e.g. water, food, electricity)						
Access to healthcare						
Access to gov welfare and support						
Acceptable levels of events, such as floods, water supply shortage						
Crisis levels of events, such as floods, water supply shortage						



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Urban Climate Vulnerability Framework

People-centred approach – to understand urban systems and infrastructure

- At community-level / municipality-level / city-wide level
- What level of rainfall before reaching crisis
- What level of prolong period of no rain before reaching crisis
- How many days if urban systems and infrastructure fail or stop working before reaching crisis
- What level of floods is acceptable (depth / duration) before reaching crisis



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Urban Climate Vulnerability Framework

- Participatory approach to assessing vulnerability
- Need to involve different community groups and – using past disaster experiences
- Need to understand the differences in terms of access to and dependence on urban systems and infrastructure and uneven impacts of urbanisation, climate and disasters, and why
- And how they cope and/or recover



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Urban Climate Vulnerability Framework

- Participatory approach to assessing vulnerability
- Need to involve multiple, cross-sectoral stakeholders – government agencies and departments
- Need to better understand how they operate / function, and deal with shocks and crises
- Need to better understand implications of policies and policy implementation

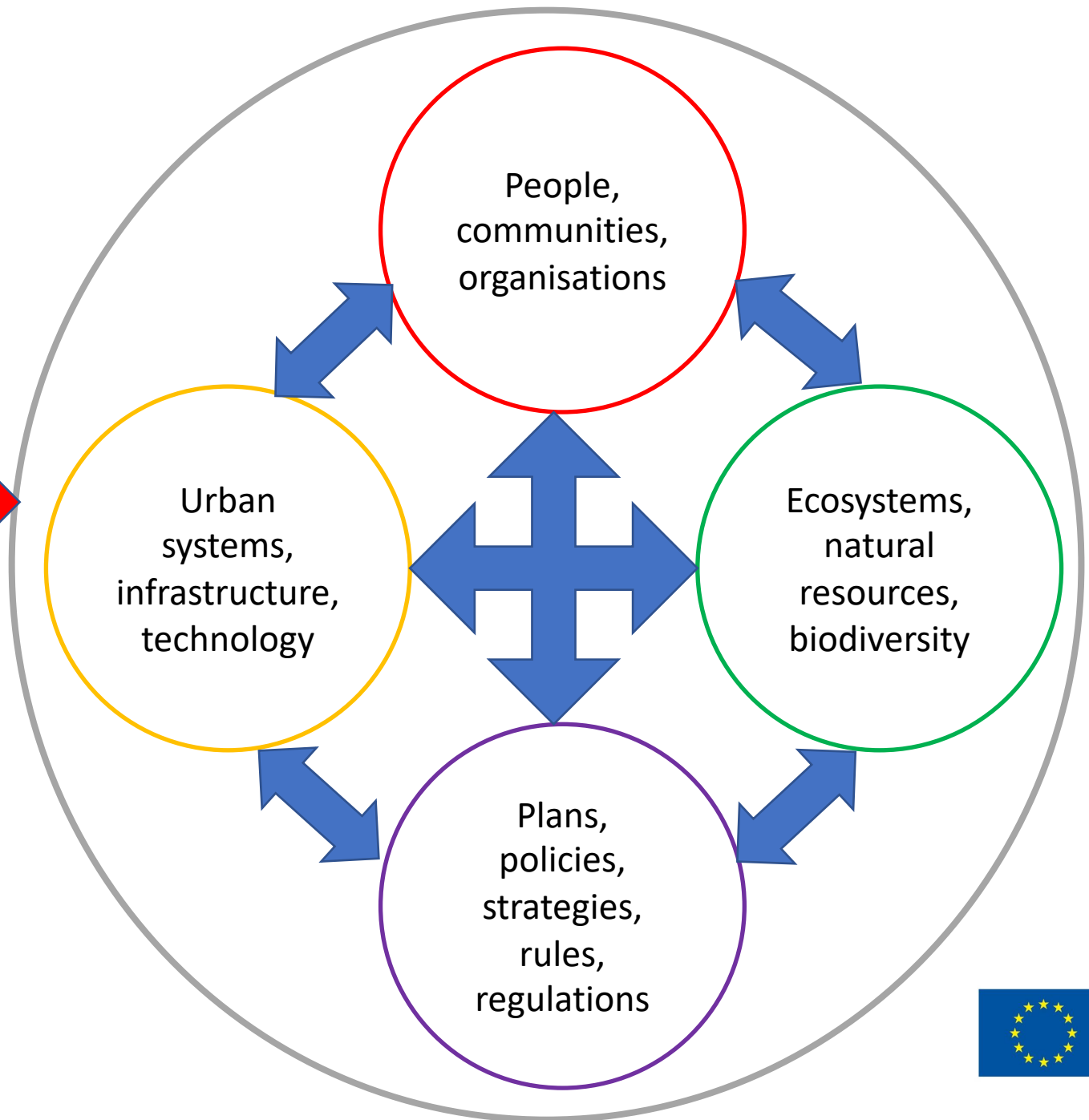



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Urban Climate Vulnerability Framework

Crises
Shocks
Disasters
Climate impacts

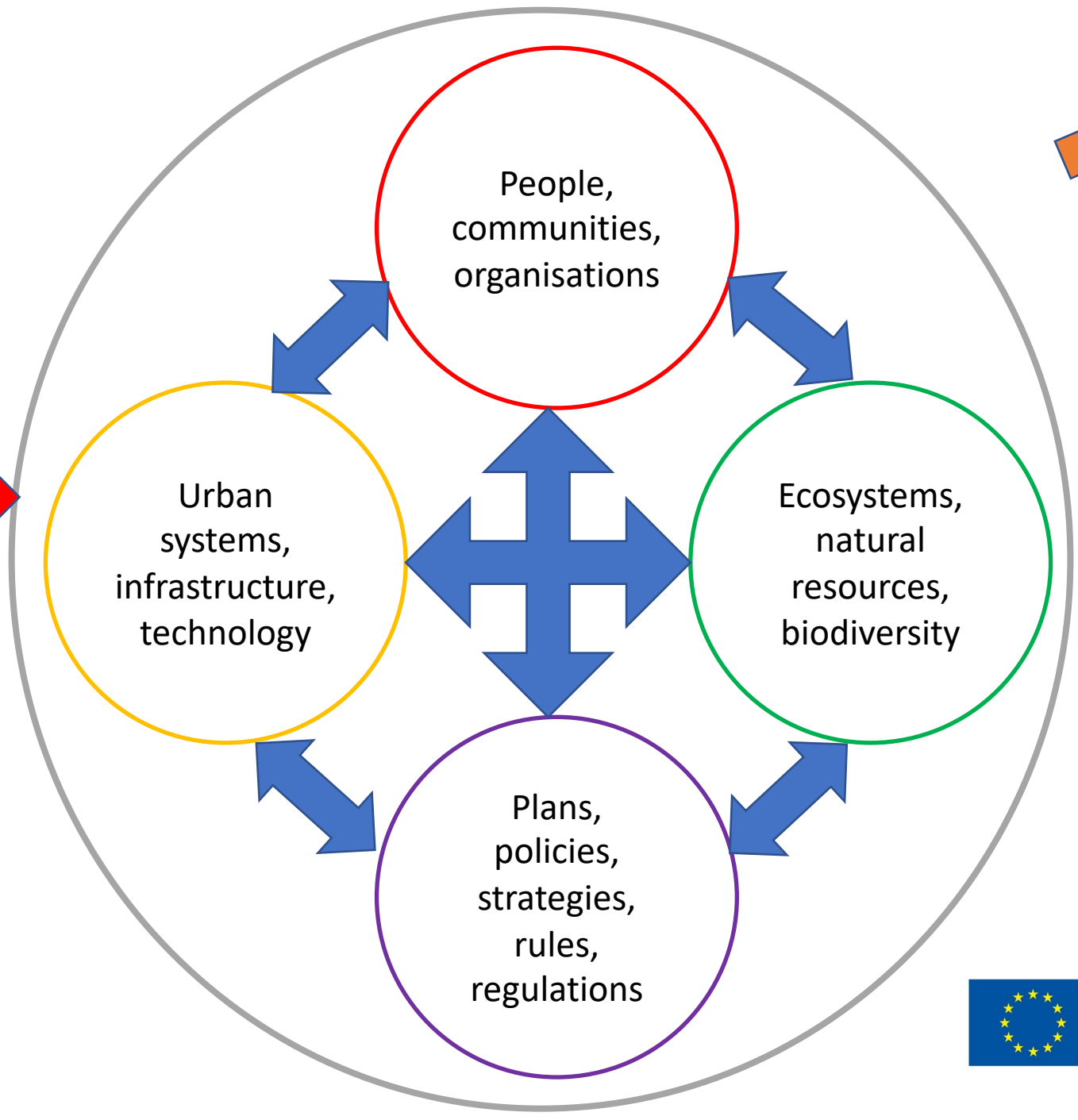


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Urban Climate Vulnerability Framework

Crises
Shocks
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SUCCESS Project

For more information

- Please contact - successprojectinfo@gmail.com

For updates and resources, please see

<https://www.facebook.com/UrbanClimateResilienceThailand/>

www.tei.or.th/thaicityclimate/success.html



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