NICHES

Nature's integration
in cities' hydrologies,
ecologies and societies

Transformation of urban water management

Designing Transition Pathways for major cities

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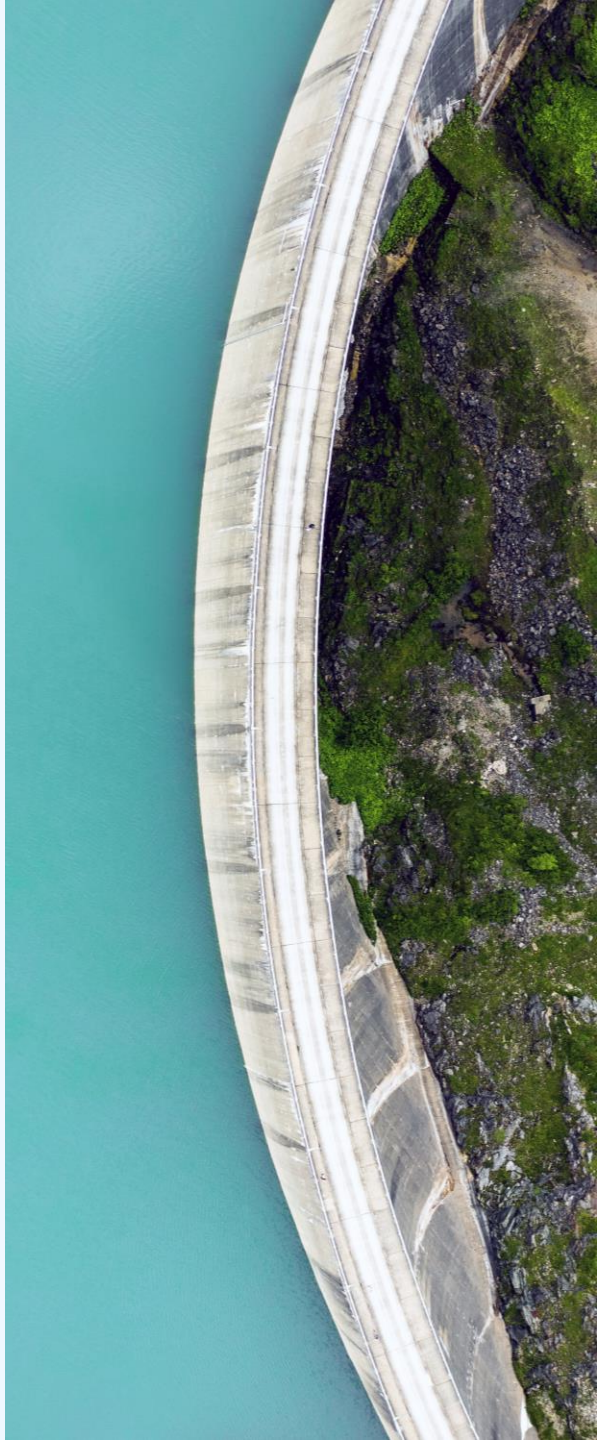
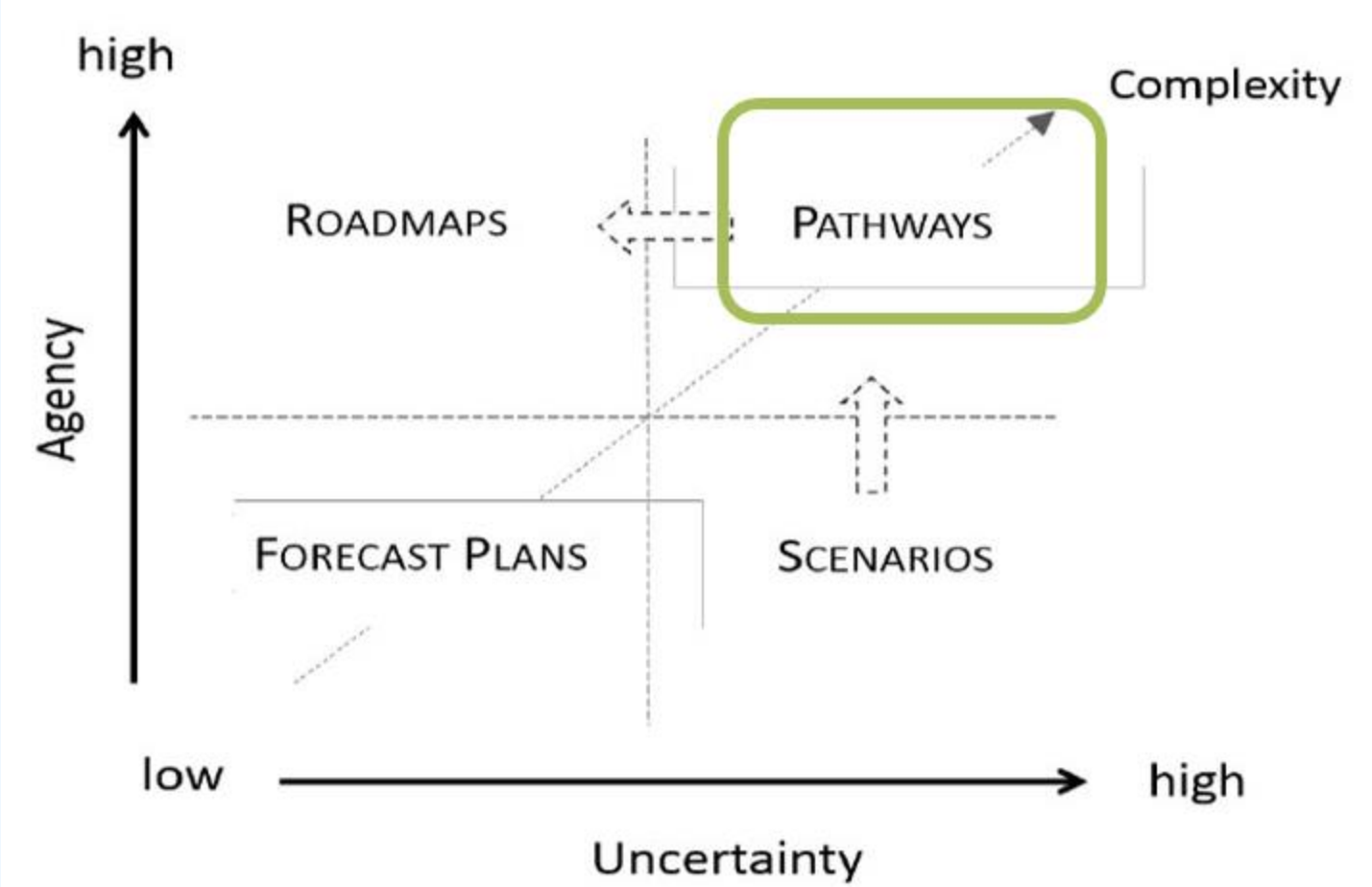


Question

How can we transition and guide urban water management systems toward a more desirable state?

Transition pathways

- Sequences of actions that describe how a system could evolve from its current state to a desired future state



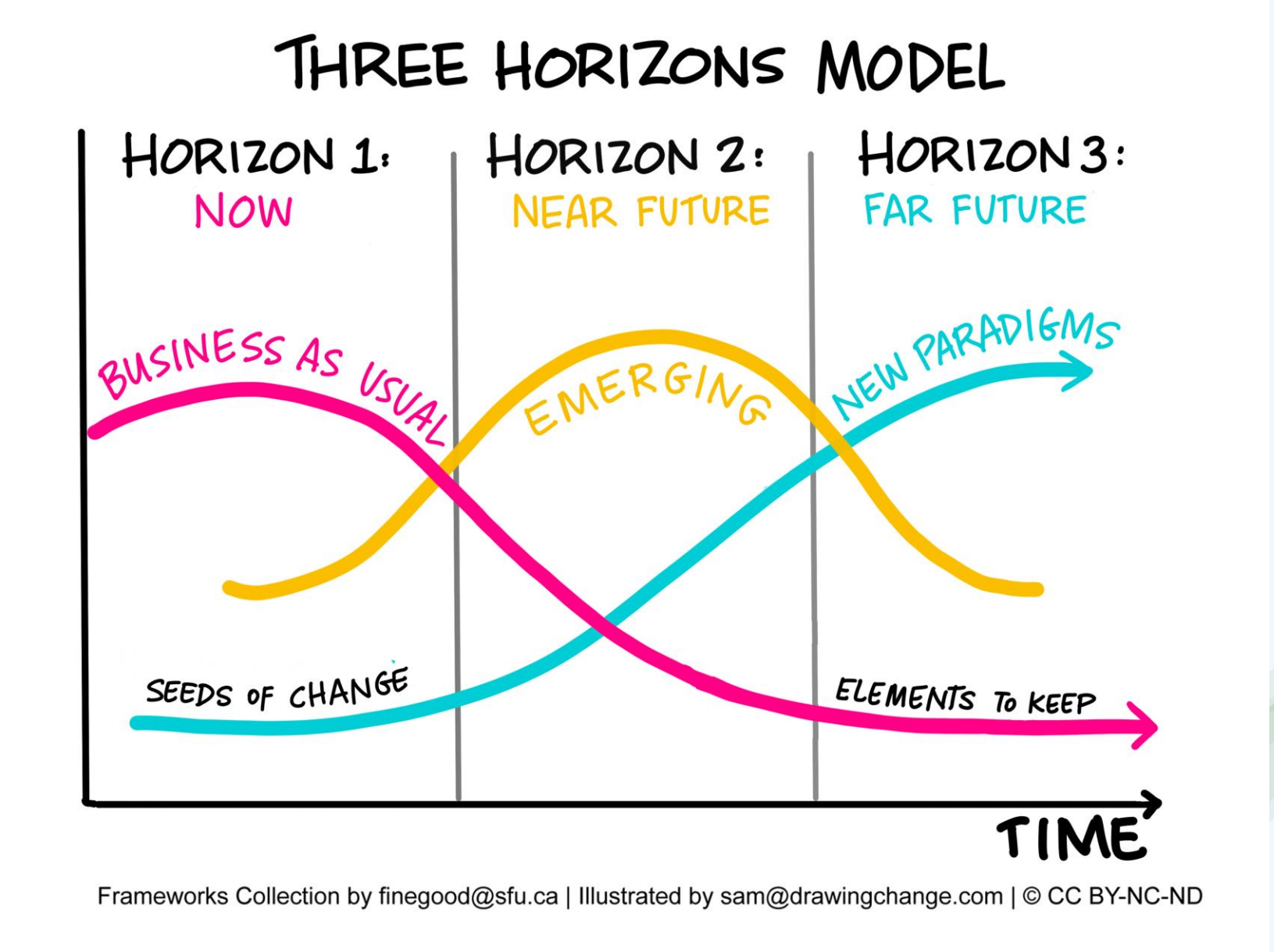
Source: own elaboration from Sharpe et al. (2016)

Three horizon framework

- strategic tool used to understand and plan for systemic change over time

Three Horizons Approach	**H1:** Current state
	H2: Transition state
	H3: Desired state

Three horizon framework



Three horizon framework: application

Three horizon framework: application

Barcelona

Berlin

Three horizon framework: application

H1: Current state

- *What are the main characteristics of the stormwater management system and the combined sewer system? Which aspects of these systems work and which do not?*
- *What do you think should be kept about the current urban storm water and sewer system?*

H3: Desired state

- *What is the future you want for urban water systems? What would be its main characteristics?*
- *What are the innovation niches that represent the desired future that already exist in the present?*

H2: Transition state

- *What are the potential environmental, technological and social innovations (solutions) that will enable us to move towards the desired future?*
- *What obstacles are there to the development of these innovations?*

Results Barcelona

H1: Current state – challenges

- Inflexible and insufficient Infrastructure: sediment accumulation and insufficient rainwater retention tanks
- Social inequities: Low-income areas experience greater flood risks

H3: Desired future state

- Enhanced community involvement in water management decision
- Circular Water Management: Promoting water reuse and recycling at the local level

H2: Innovations emerging that can lead to future goals

- Promotion and enhancement of NBS with integration with gray infrastructure
- Decentralization of urban planning to mitigate flooding in vulnerable areas

Results

Berlin

H1: Current state – challenges

- Insufficient Grey Infrastructure and low adaptability
- Funding challenges and technical regulations focused on drainage rather than innovative solutions

H3: Desired future state

- Enhanced community involvement in water management decision
- Decentralized water management
- Integrated natural systems and green infrastructure into urban planning

H2: Innovations emerging that can lead to future goals

- Expansion of NBS and decentralized retention basins
- Development of digital planning tools and monitoring systems for efficient water management

Final remarks

Unsustainable gray infrastructure

Descentralization of water management

NBS as core element

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Thank You!

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NICHES Newsletter

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