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# Nature-Based Smart City Framework

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# Outline of this presentation



- Who we are and why we work together
- City as a Service Framework
- Case Espoo, Kera - deploying nature-based solutions in creating a City as a Service
- NBS: towards a holistic approach in impact assessment



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## Who we are



- Laurea University of Applied Sciences
- Espoo city
- Finnish Environment Institute SYKE



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# City as a Service - framework



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1. City as an Open Innovation and Experimentation Platform
2. City with Nature-Based Solutions supporting both natural and business innovation ecosystems
3. City as a Living Lab - Co-creation with Citizens and local Stakeholders
4. City as Enabler and an Orchestrator for Business Innovations - City - customer, action and knowledge based city management



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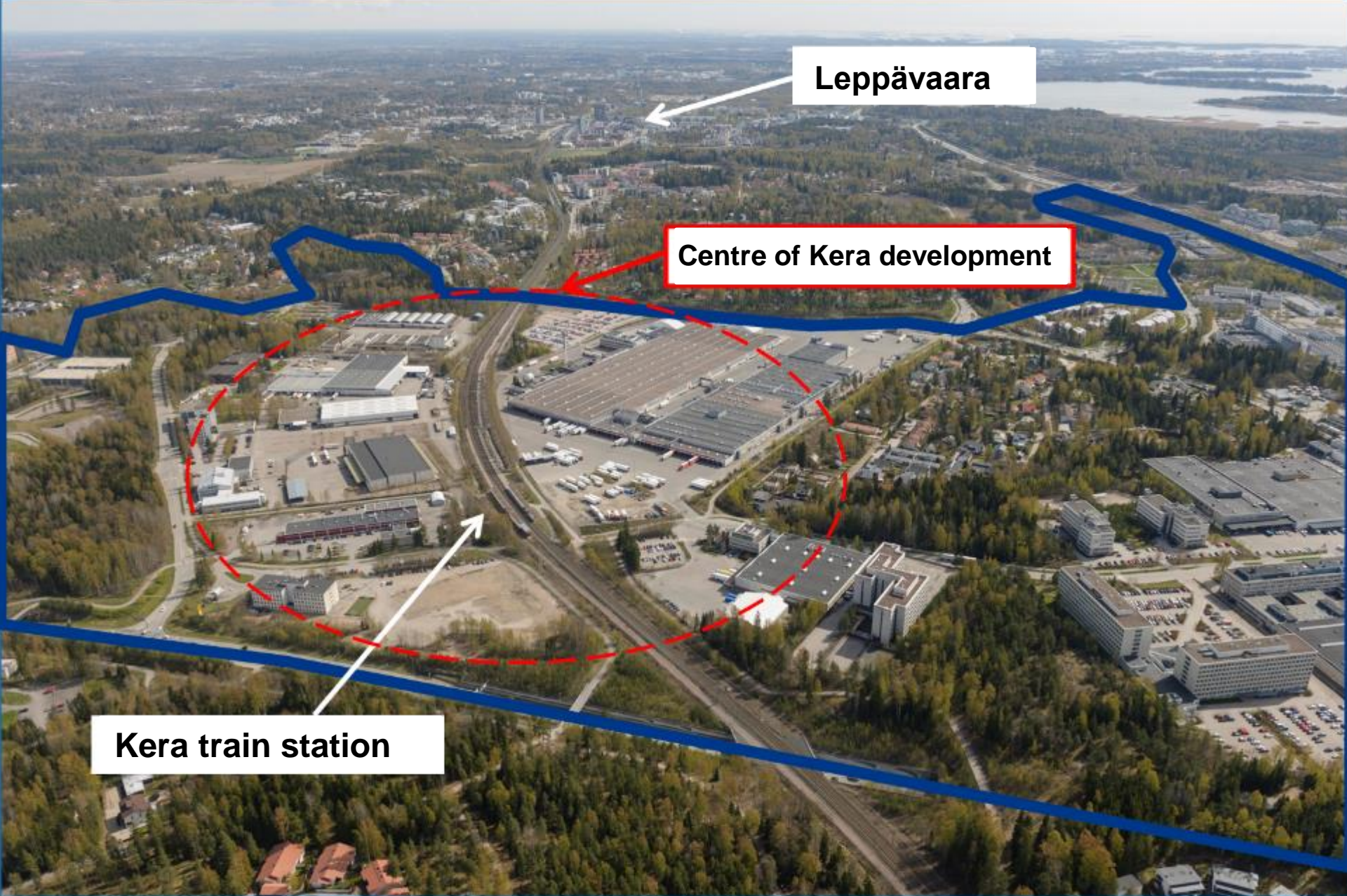


## Case Espoo, Kera: A collaborative effort between stakeholders



- 14 000 new inhabitants to live in Kera in the 2020's
- 10 000 jobs to be created
- Transforming the 22-hectare Kera industrial park into a multi-functional urban farm and innovation hub for NBS using a green urban living lab approach
- Demonstrating how urban agriculture can solve complex societal issues in cities and achieve ecological, economic and social impacts
- Engaging and committing local stakeholders into the long-term development of the area



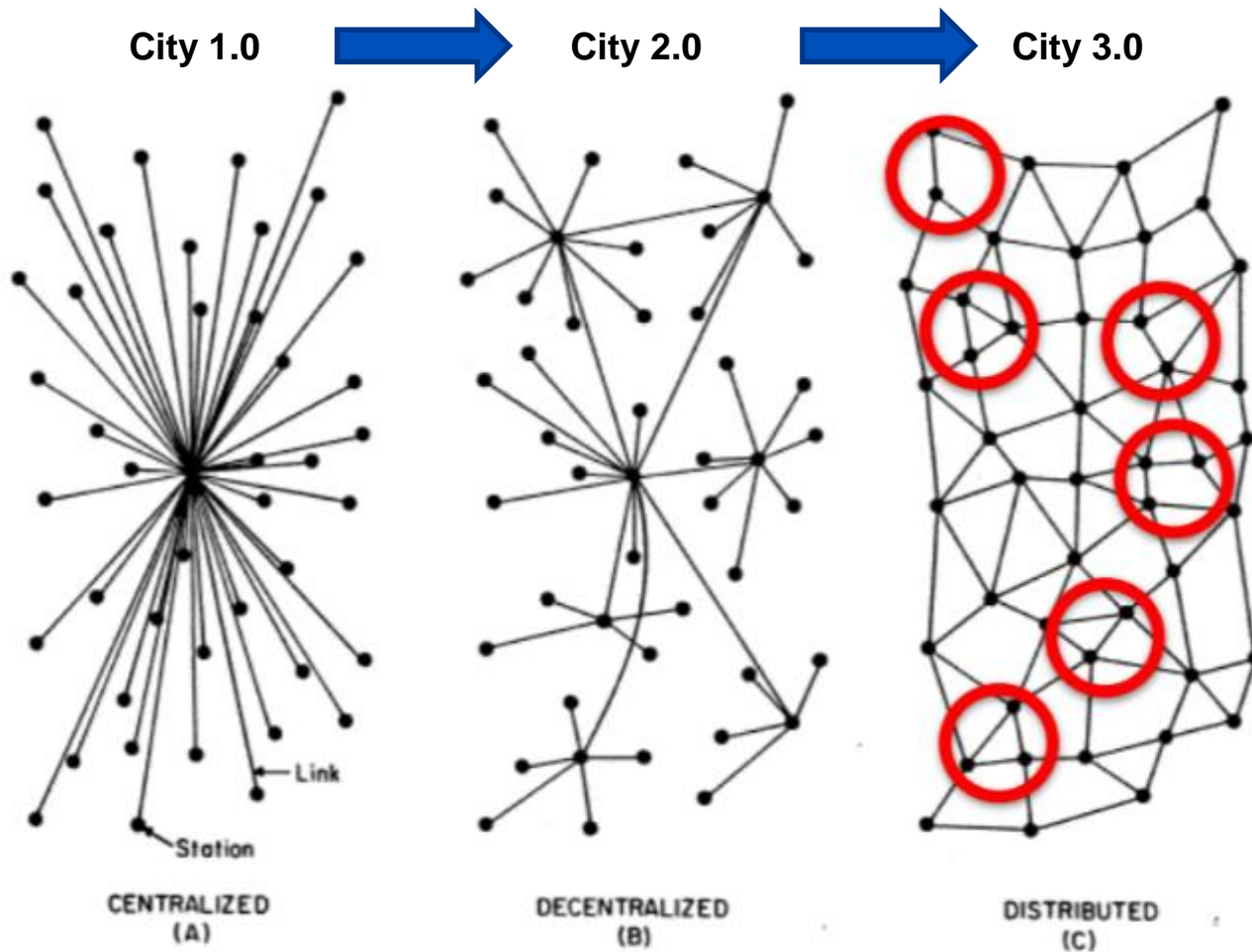


Leppävaara

Centre of Kera development

Kera train station

# City as a Service



## Service-dominant logic

- Value co-creation
- Service platforms
- Customer as a stakeholder

FIG. 1 – Centralized, Decentralized and Distributed Networks

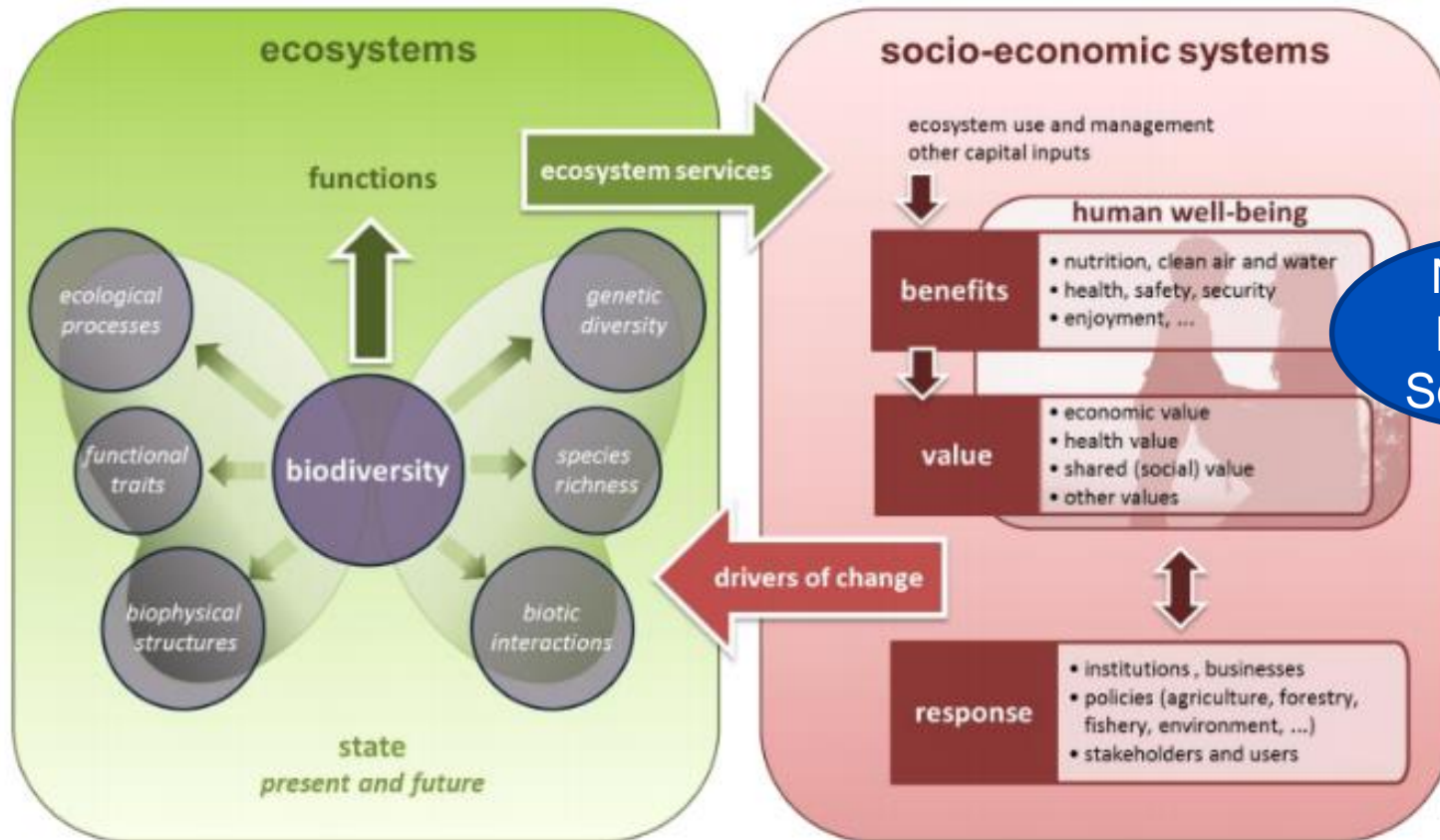




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# NBS impact indicators



Nature Based Solutions





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# NBS impact indicators



- Establishing an evidence base for NBS requires
  - streamlining assessment approaches
  - including a **framework of indicators** for multi-level impact assessment
- Indicators will need to measure the effectiveness of NBS for *chosen goals*
  - e.g. climate change resilience (against e.g. urban heat island effect), reducing noise, improving air quality & creating recreational areas and social cohesion
- The evidence base can then be used to
  - share information among different countries and disciplines
  - facilitate mutual learning
  - tackle urban challenges (European Commission 2015).



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# Nature-Based Smart City Framework: conclusion



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- NBS in a Smart City context is a challenge-driven approach to innovation, focusing on the societal challenges in sustainable city regeneration. This implies a cross-sectorial and cross-disciplinary approach, where R&I from different sectors such as energy, health, climate, transport, construction, industry, are mobilised for common solutions.
- LL methodology for cities: standalone innovations are not enough. Multi-stakeholder engagement (academia, city decision-makers, SMEs and citizens) should generate more viable business models and sustainable cooperation themes.
- The challenge of Thinking Large – creating sustainable and cost-effective ecosystem of solutions, services and infrastructure which can be attuned and replicated by other cities
- This ecosystem facilitates the exchange of information and experiences, and acts as a platform for consolidation of interests, capacities and contribution of different stakeholders.



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# Thank you!



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