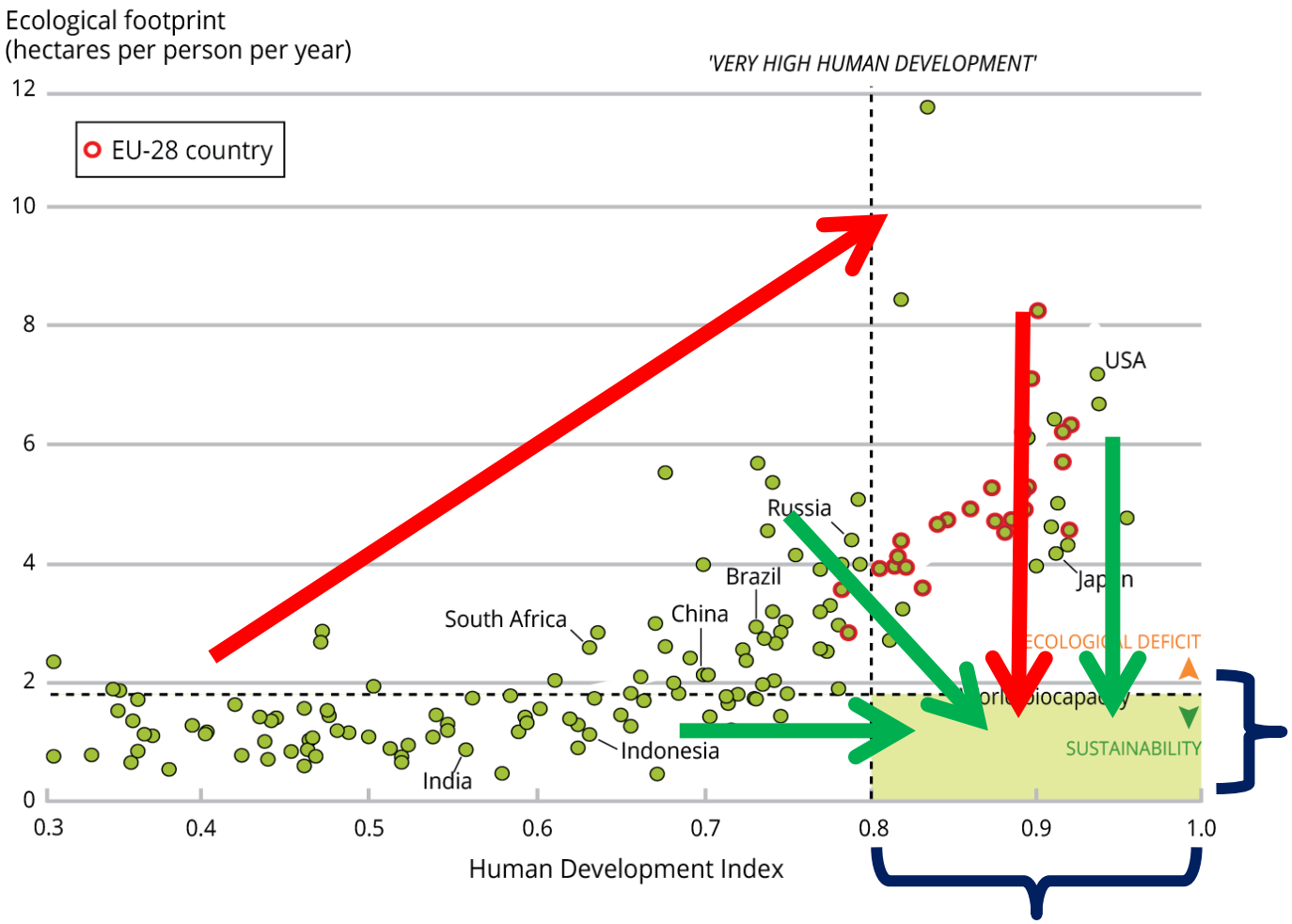
Transition towards more sustainability: the role of resource efficient cities

The key challenge for the 21st century



(Global Footprint Network, 2012; UNDP, 2014)

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Limits to efficiency and technological

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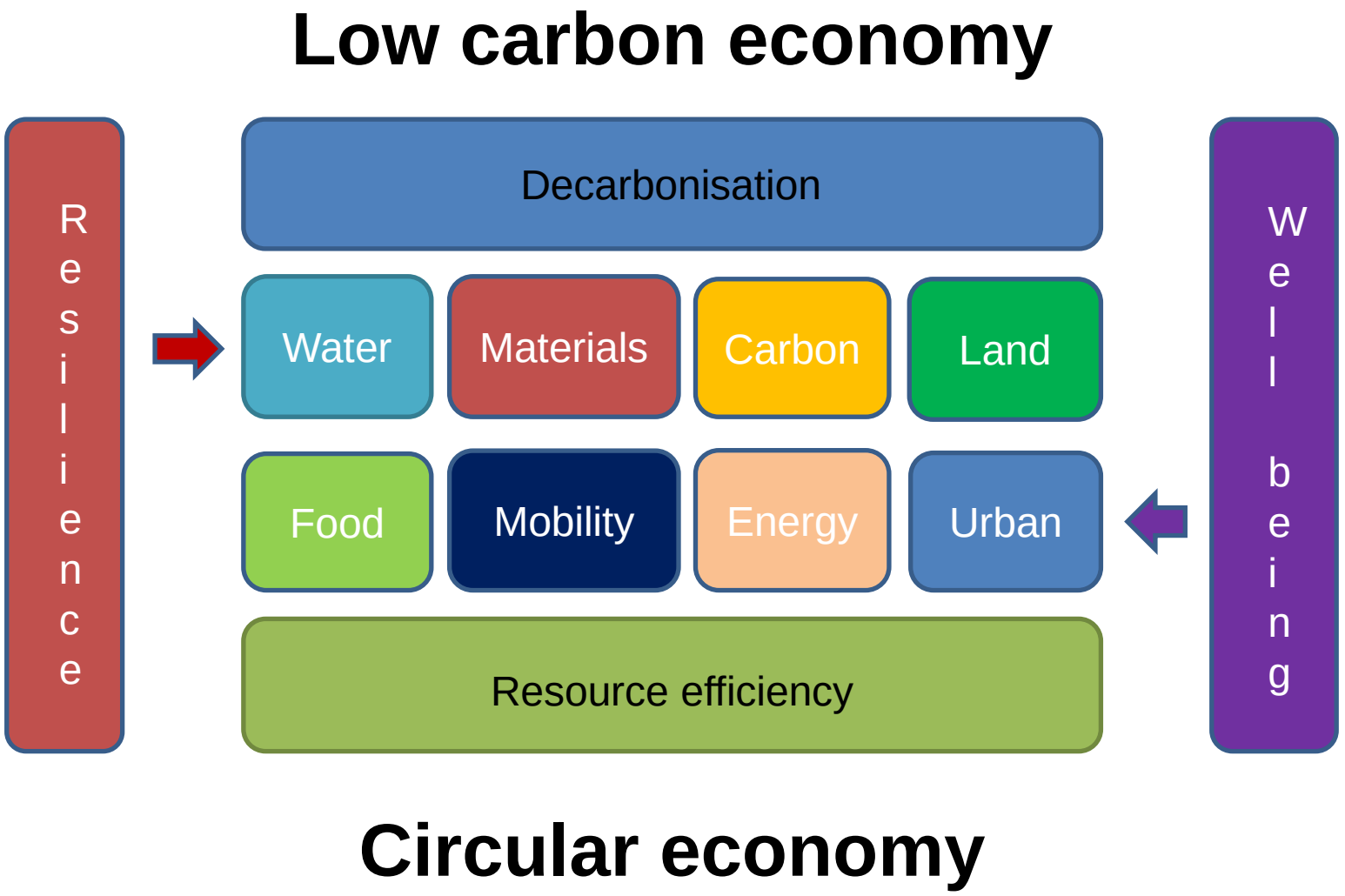
An increasingly integrated, systemic policy setting



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International and European framework

International

✓ **UN Sustainable Development Goals**

***SDG 11*:**

Make cities and human settlements inclusive, safe, resilient and sustainable

European

✓ **EU 2020 – strategy to promote smart, inclusive and sustainable growth**

Flagship initiative 'Resource efficient Europe'

✓ **7 EAP:**

Priority objective 9: help cities become more sustainable

Aim: by 2020, most cities in the EU are implementing policies for urban planning and design**.**

Low-carbon, resource efficient, competitive and well-being

Enhance the knowledge base and support policy development

Three reports

‘What is a resource efficient city?’

‘Resource efficient cities: good practices’

‘Enabling resource efficient cities’

Enhance the knowledge base and support policy development

Why resource-efficient cities matter?

What are the main challenges and what can be done?

What solutions can be implemented on different scales (time and space) and across sectors?

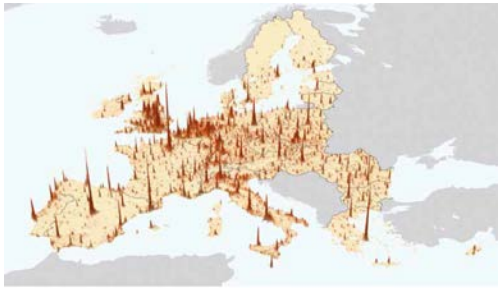
What are the main drivers making urban transformation possible?

How cities can be governed to achieve the transition to resource-efficient urban areas?

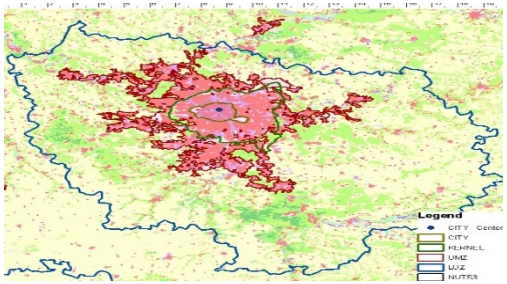
How can the society be involved in the decision making proces?

Cities -factors of complexity

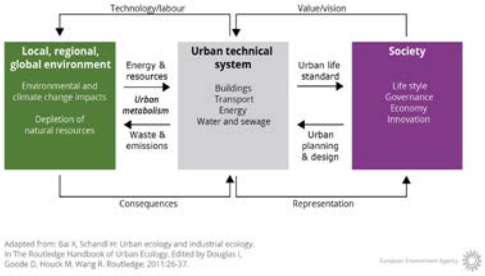
- A majority small and middle size cities in Europe



- Cities with no clear limit
  - Continuum Urban - Rural
  - What is a city?
    - *Adiminstrative city (Core city)*
    - *Physical lay-out (UMZ)*
    - *´The Real´ city (LUZ)*



- Cities are a complex system
  - Integration of different dimensions
    - Urban technical system
    - Green infrastructure
    - Society



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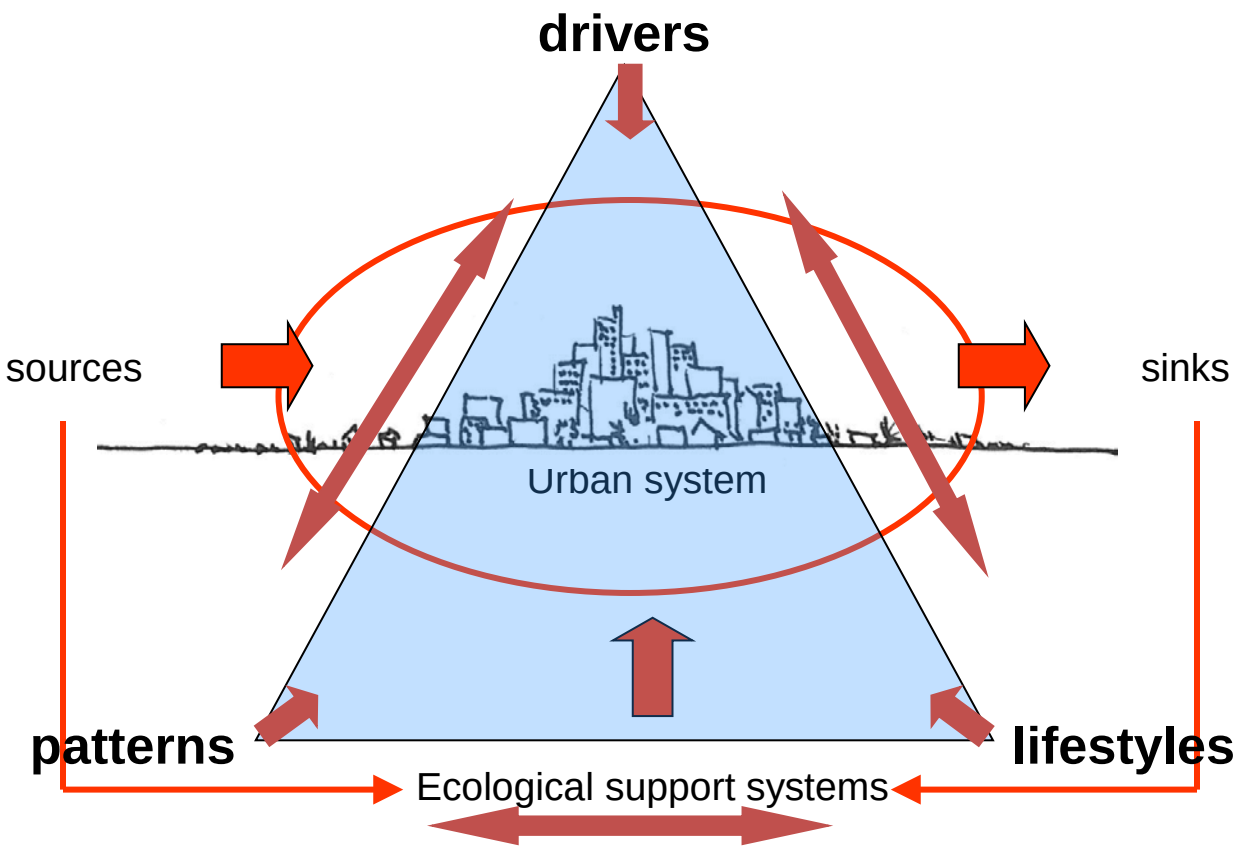
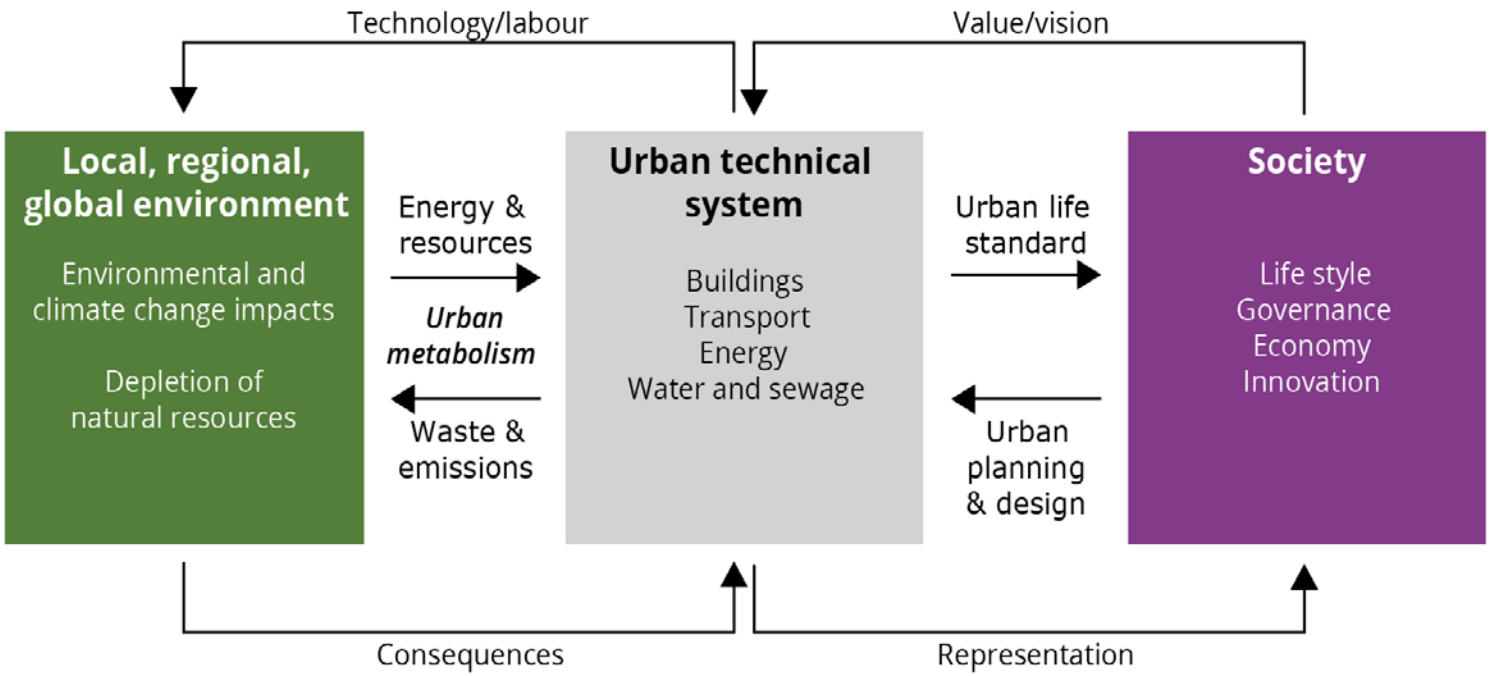
The urban system



The urban system- source of opportunities



Adapted from: Bai X, Schandl H: Urban ecology and industrial ecology. In The Routledge Handbook of Urban Ecology. Edited by Douglas I, Goode D, Houck M, Wang R. Routledge; 2011:26-37.

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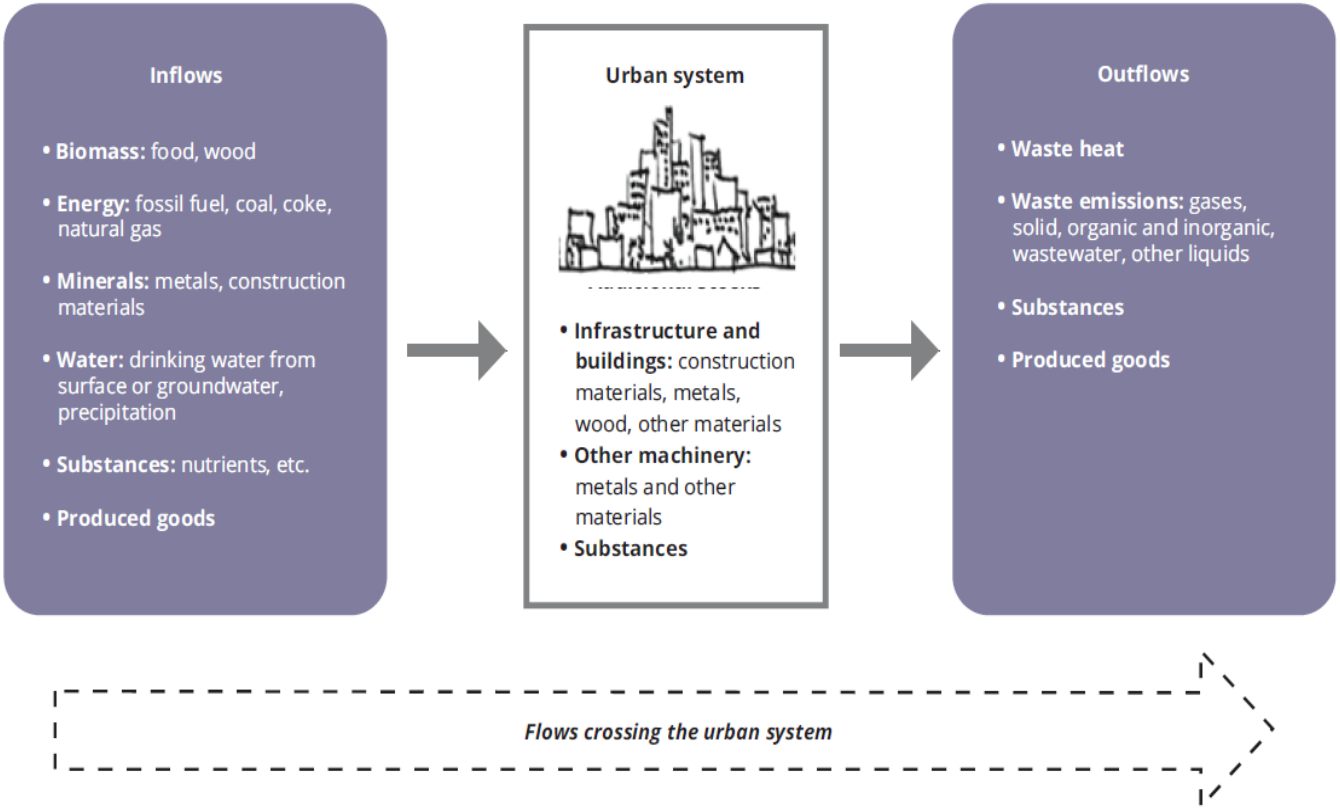
Lineair metabolism



Source: Adapted from Kennedy and Hoornweg, 2012 — modified by the EEA.

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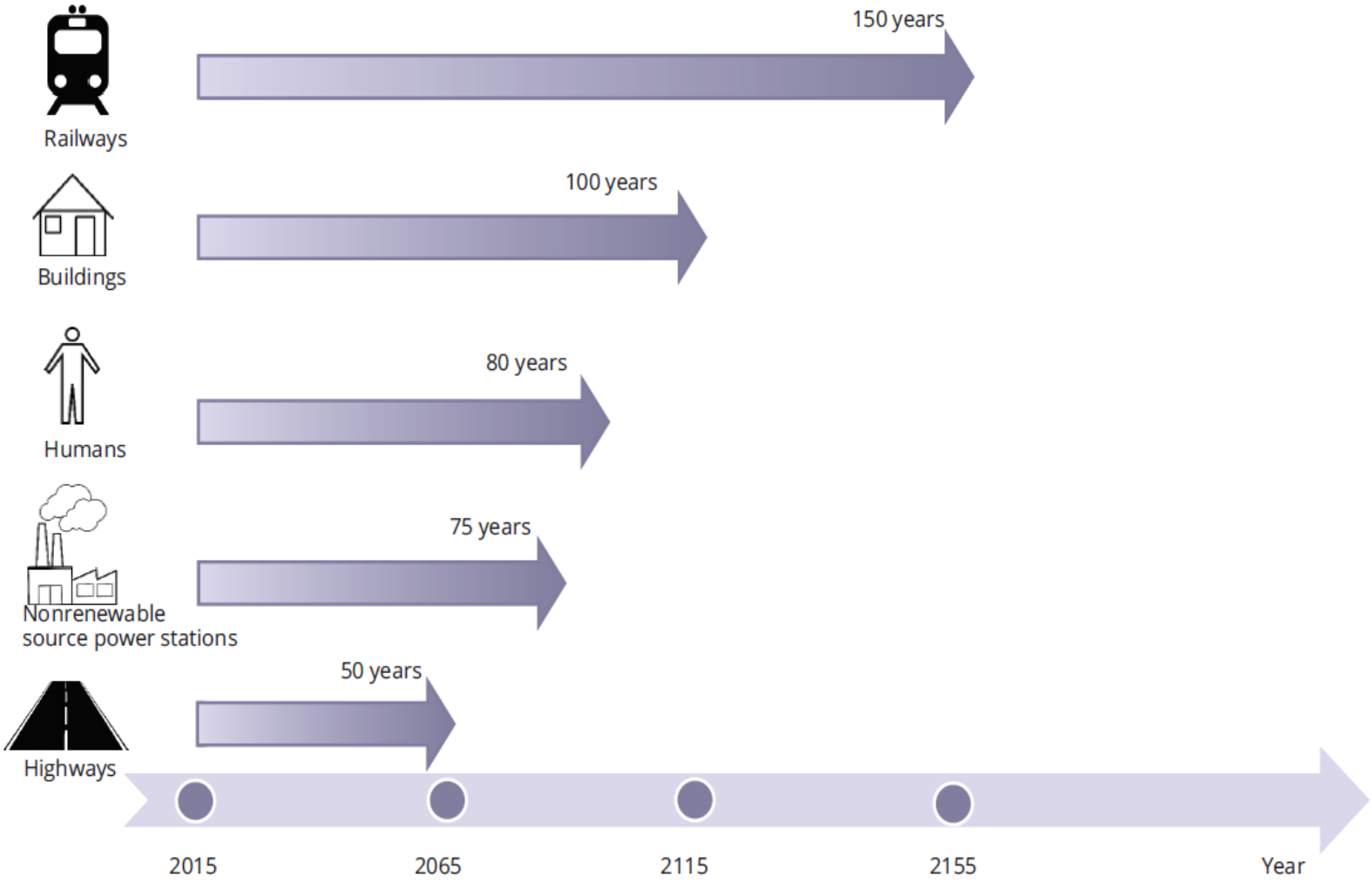
The lifespan of people, assets and infrastructure



Source: Adapted from UN et al., 2011.

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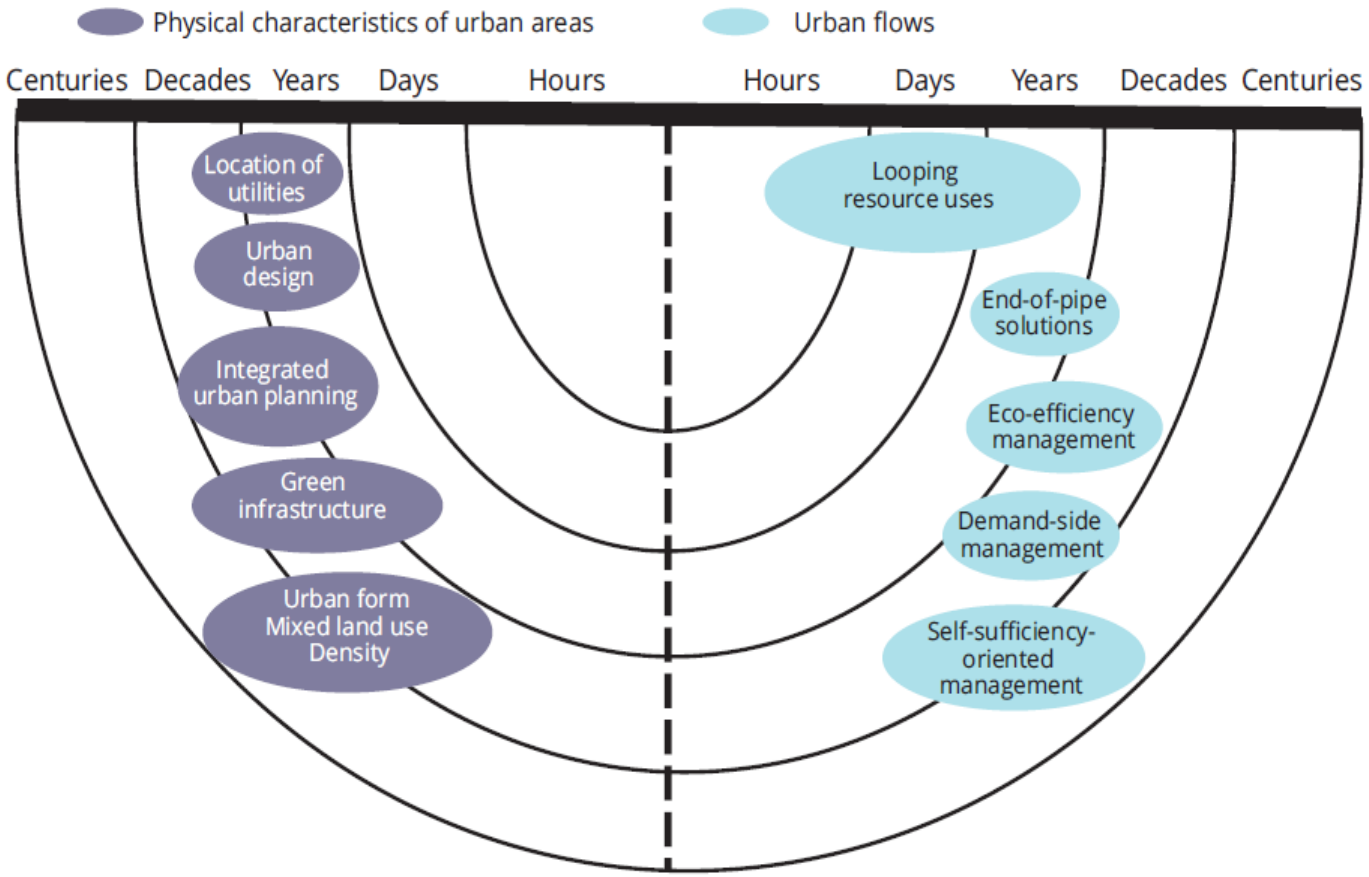
Sequential investment for a better return



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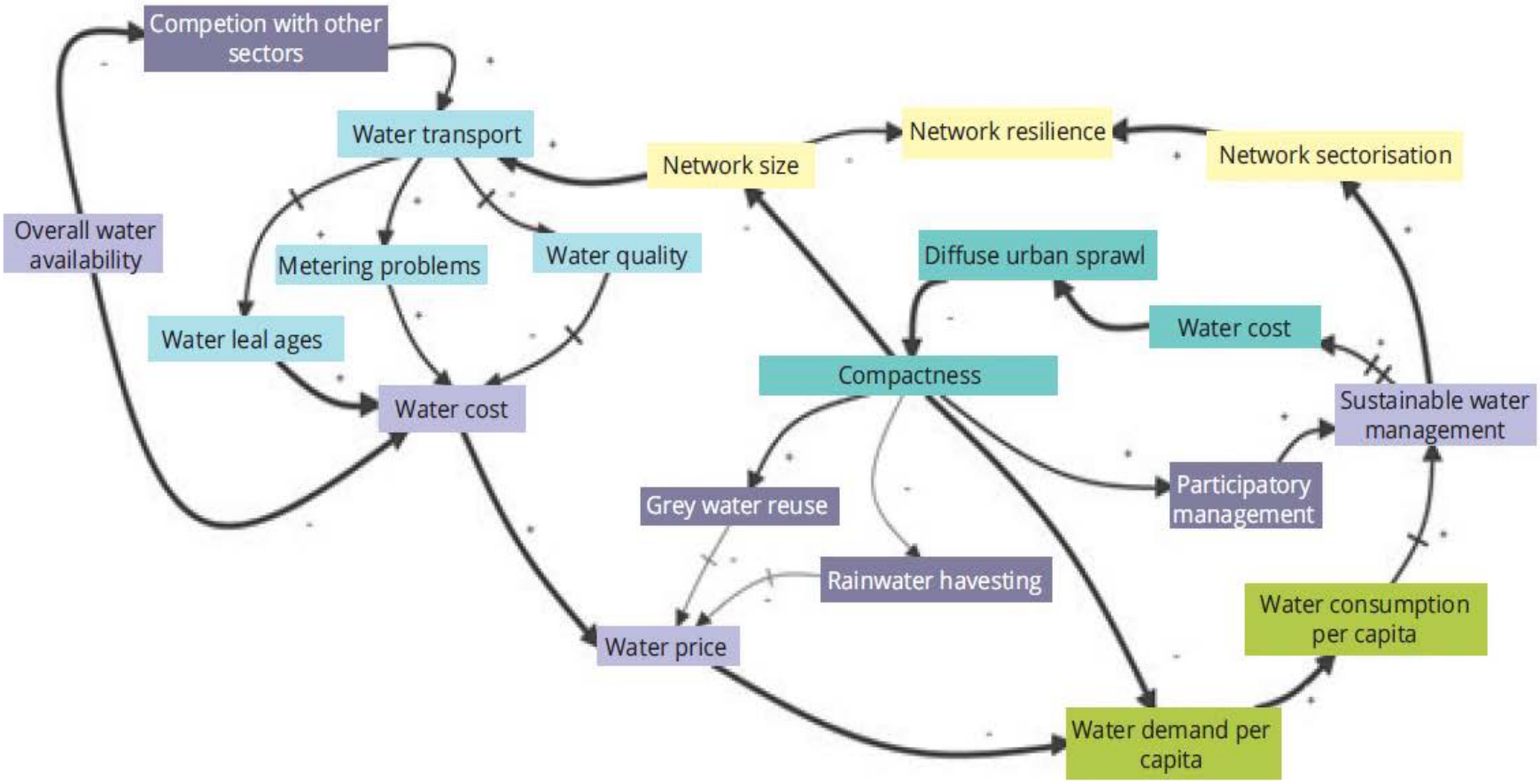
The key characteristics of a compact city

Dense development pattern — density and proximity	Public transport	Accessibility to local services, jobs and recreational areas
· Urban land is intensively utilised · Brownfields are regenerated · Urban areas are continuous · Distinct border between urban and rural land use · High quality and secured public spaces · Factors ensuring quality of life is preserved and improved	· Effective use of urban land · Efficient and affordable urban public transport system facilitates mobility in urban areas and surroundings	· Land use is mixed · Most residents have access to local services either on foot, bike or by using public transport · Green areas are easily accessible

Source: Adapted from OECD, 2012a.

The consequences for the water system



Source: EEA — ETC/SIA.

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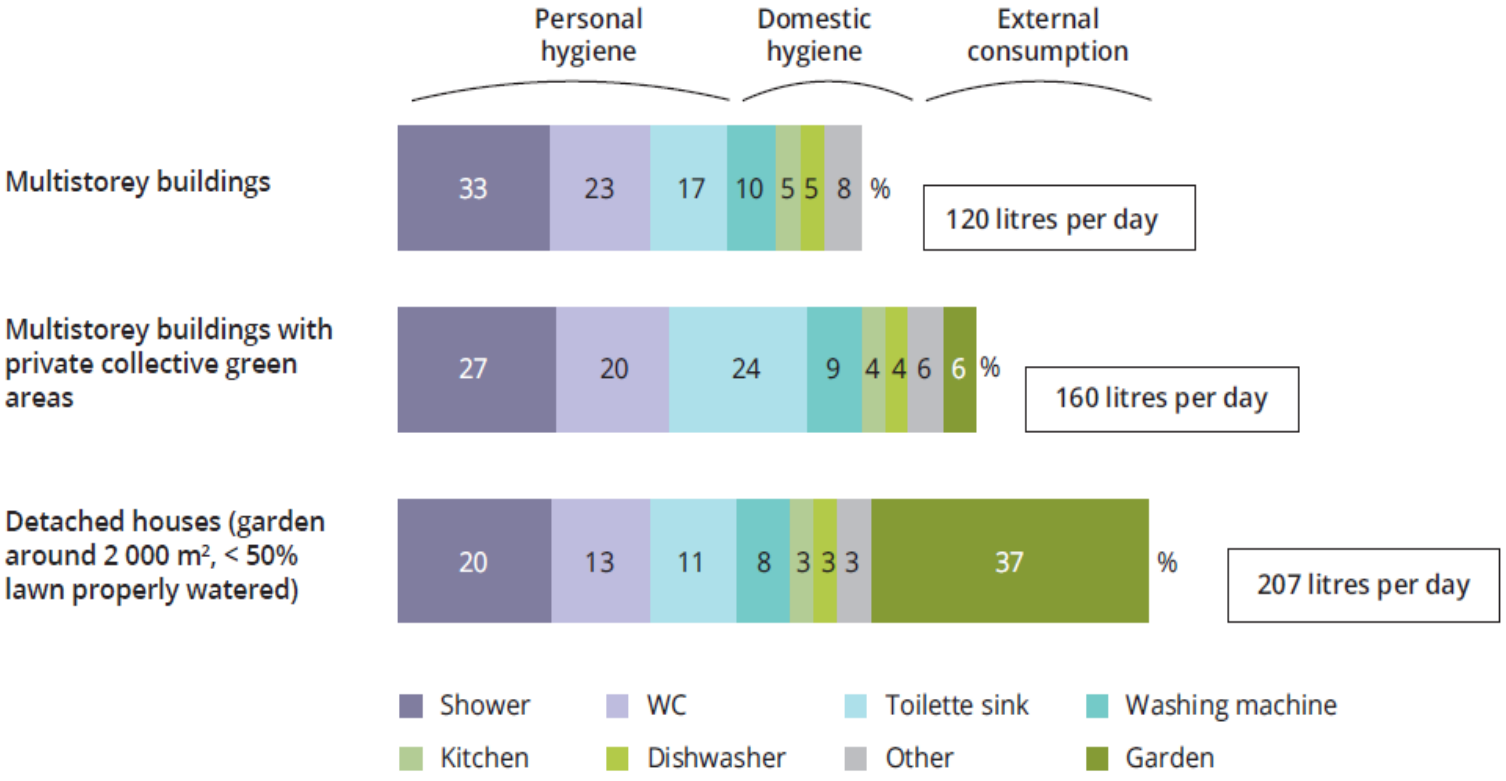
Distribution of water consumption by household type

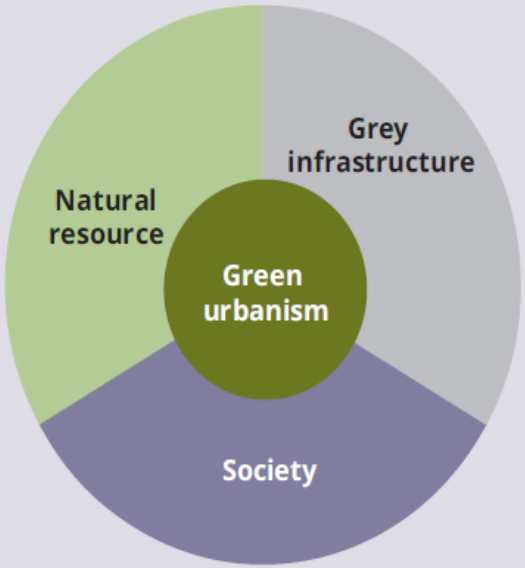


Source: Saurí and March, 2007.

Green urbanism

- **Green infrastructure**
  Landscaping
  Working with nature
  Biodiversity in parks and gardens
  Accessible green areas for recreational activities
  Green roofs, green walls, linear trees

- **Resource**
  Renewable or regional materials for construction
  Regional food supply, including from urban areas
  Zero-waste city and a circular approach
  Zero-land take
  Closing the water cycle through collection, filtration and rain gardens

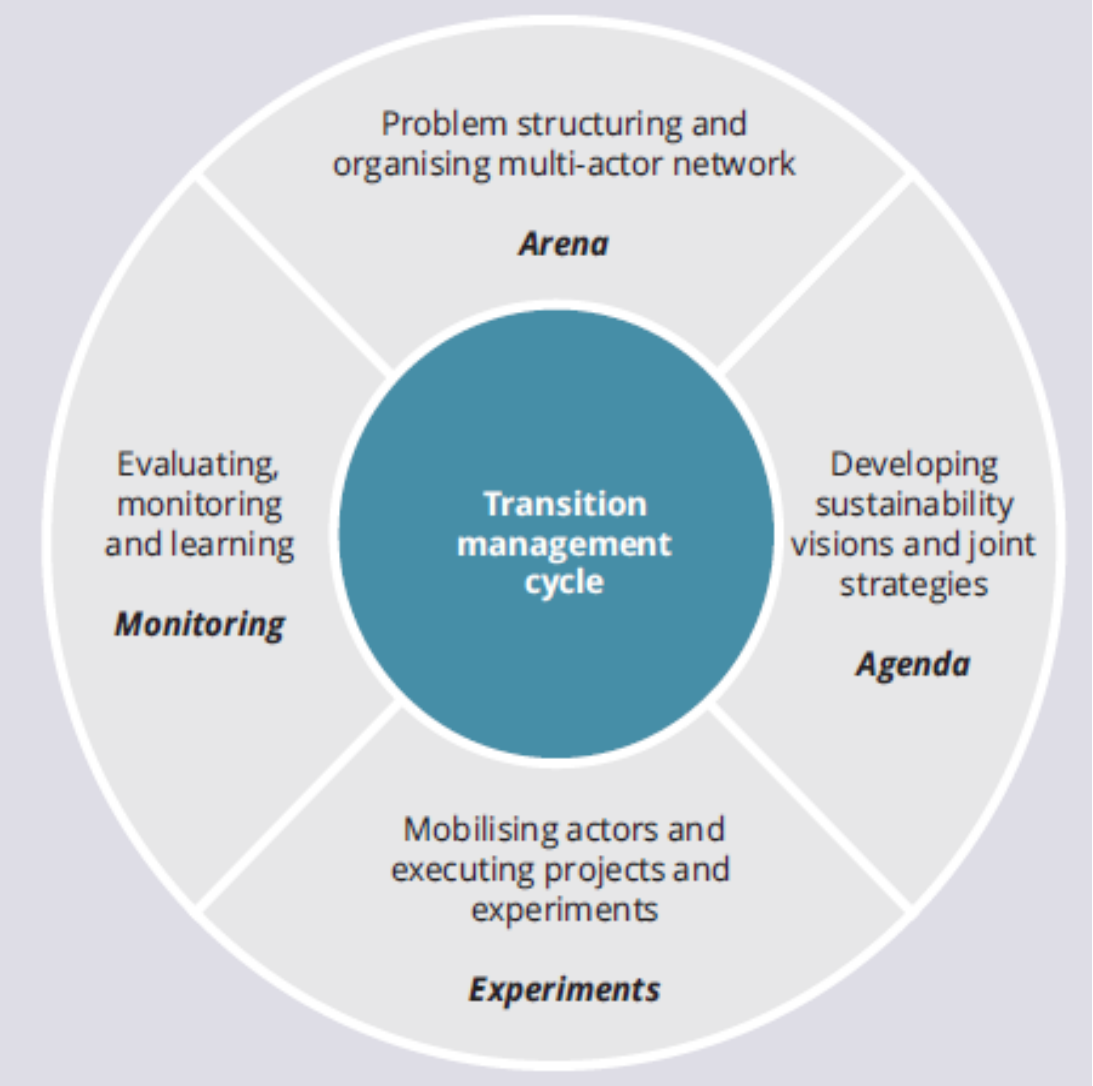


- **Urban planning**
  Densification, land recycling, programmes for mixed land use
  Retrofitting buildings and infrastructure
  Affordable housing
  Eco-districts and eco-buildings
- **Urban design**
  High quality public spaces
  Architecture and place identity
  Eco-construction
- **Urban management**
  Smart management of resource flows
- **Mobility**
  Efficient public transport
  Cyclability and walkability
- **Energy**
  Production of renewable electricity
  Smart grids for efficient use of energy

- **Culture**
  Values, behaviour, lifestyle, identity
- **Governance and leadership**
  Long-term vision, planning, programmes
  Integrated place-based approach
  Liveability, health and well-being as main objectives
  Cooperation with surrounding areas
  Participation of citizens at the decision-making process
  Green procurement
- **Education, research, knowledge sharing**
  Information to raise awareness, training on sustainability issues
  Participation at networks to share experiences

Source: Adapted from UN et al., 2011.

A vision for the future



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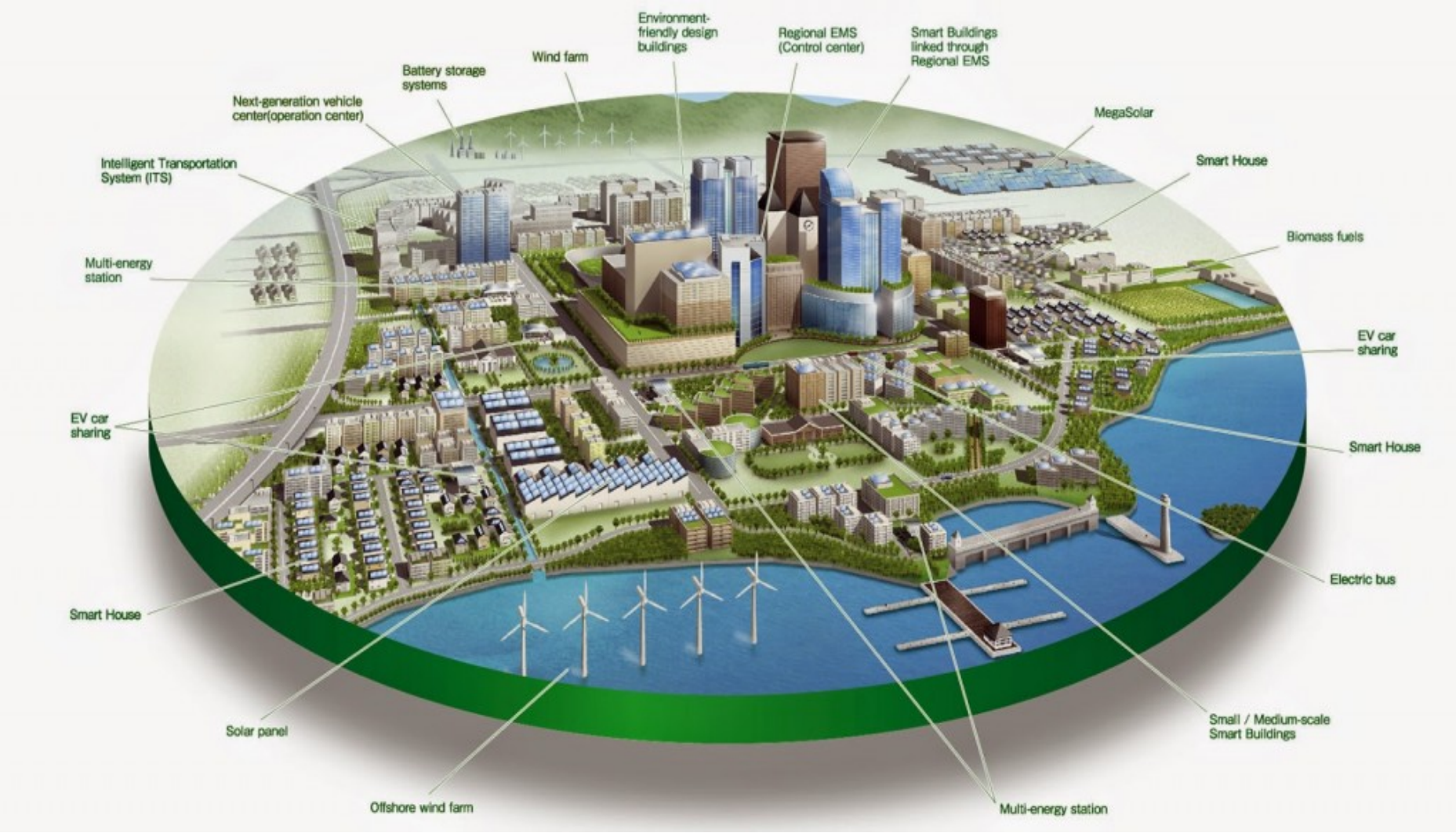
A vision for the future – challenges



Source Lerablog.org

Thank you

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