A conceptual framework for Urban Nexus and its linkages to the new global agenda

EGM, 10th November 2016, Prof Steffen Lehmann
Structure

1. Agenda 2030 - What has been achieved and where are we today?

2. Some examples of Living Labs

3. The elements of a suggested Conceptual Framework for Urban Nexus and its Enabling Factors

4. Recommendations for the next steps and Key Messages
What is the City but the people?

W. Shakespeare

(‘Coriolanus’, Act III)
1. Agenda 2030 - What has been achieved and where are we today?
The Urban SDG (11)

Cities of the Future: to make cities inclusive, safe, resilient and sustainable

Ensure access to safe and affordable housing, and upgrading slum settlements. Investment in public transport, creating green public spaces, and improving urban planning and management. Compact cities as drivers of sustainable urbanisation.

State of Asian and Pacific Cities 2015 - Report

Agenda 2030: the 17 SDGs

“New Urban Agenda”

Nov. 2015 Paris Agreement (signed by 197 countries)
2030 Agenda for Sustainable Development and HABITAT III

Outcome document agreed on at HABITAT III in Oct 2016

Guiding future urbanisation efforts by nation states, city and regional leaders – the groundwork for new policies and approaches that will extend and impact the future.

Redefining the tools for urban development.

How to take the New Urban Agenda forward and achieve the SDGs?
The particular inter-connected challenges for cities in the Asia-Pacific region

- By 2050, the urban population is expected to nearly double, making urbanisation one of the 21st century’s most transformative trends; rural-urban migration.
- Rapid industrialisation: some of the main challenges for cities is the rural-urban migration, out-of-control rapid urbanisation (sprawl), the lack of affordable housing, growing waste and increased traffic congestion.
- Political priorities can lead to negative trade-offs, eg: the growing middle-class societies leading to increased consumption.
- Lack of long-term planning framework; urban sprawl continues.
- Possible tension between local vs global activities.
- Rising inequality; the number of people living in slums is still rising.

Cities in the Asia-Pacific are particularly vulnerable to the impacts of climate change.

- Participation of citizens is limited.
- Escalating use of resources.
Green Urbanism principles – Urban Resilience
The need for Compact Cities is widely recognised
Urban Nexus integrated approach

“Integrated Resource Management in Asian Cities”

The Urban Nexus is an approach to sustainable urban development solutions. Aiming at integrating planning and management processes that can contribute substantially to sustainability and increase the efficiency of natural resource use.

What are the key elements?

The Water-Energy-Food Nexus

Focus on a circular economy to reduce emissions and waste

Integrated approach of:
- Water
- Energy
- Food Security

Materials and Waste
Land use
Transport

Phase I – Completed
2013-2015
Urban Nexus Issues

Continuous planning and management along sectorial lines is rarely conducted in a coordinated manner.

A project-based approach.

Still unable to utilise the interactions of synergies across sectors and the benefits that could arise from integrated resource management and a circular economy.

The Urban Nexus in practice:
In 2016, the project supports 12 cities in 7 countries:

- China
- Indonesia
- Mongolia
- Philippines
- Thailand
- Vietnam
- India
Understanding the principles of a Circular Economy

Some key publications:
‘Cradle to Cradle’
‘Towards the Circular Economy’
‘Regenerative Cities’
‘Waste to Wealth’
Understanding the principles of a Circular Economy

The Circular Economy is all about systemic change, not only individual projects.

The principles of Circular Economy have been discussed for over 10 years, but are extremely difficult to implement.

No incineration: Burning waste does not represent resource recovery.
Principles of a Circular Economy

Resource-efficient cities, urban metabolism
An industrial economy that promotes greater resource productivity, reducing waste and avoid pollution.

- **Minimising** the use of resources, materials and the creation of emissions and waste
- **Decoupling** the economic and urban growth from resource use
  - Wastewater for renewable energy generation
  - Biomass as organic fertiliser
  - Zero waste management and recycling

1. **Preserve and enhance natural capital** by controlling finite stocks and balancing renewable resource flows.

2. **Optimise resource yields** by designing for remanufacturing, refurbishing, and recycling.

3. **Foster System effectiveness** by revealing and designing out negative externalities.
2. Some examples of Living Labs
City-level decoupling of growth, Curitiba

- Urban resource and material flows, decoupling natural resource use
- The city as a living organism, with a flow of inputs and outputs as its ‘metabolism’
- Breaking the link between economic prosperity and the depletion of finite resources
- Urban-rural flows
- Problem: ‘Rebound effect’ due to wasteful behaviour
BRT in Accra and Lagos

- The new Bus Rapid Transit (BRT) System in Accra, Ghana, and in Lagos, Nigeria
- Mode shift from private vehicle to bus, where fewer buses move the same passengers at increased travel speeds (learning from Curitiba and Bogota ‘TransMilenio’)
- ‘TransJakarta’ is not working well, missing free transfers from feeder buses
Modular prefab solutions, NL

- Accelerating the construction of prefabricated off-site modular houses, addressing skills shortage
- The pathway to affordable high-quality homes: built in 30-40% of conventional time
The citizen-centred Smart City paradigm

- Much of today's urban growth is driven by young companies and IT
- Systems Integration: digital technologies that unlock faster economic growth
- Smart systems can make green technologies more efficient
- New ways to better engage citizens, co-creation
- Big data as evidence base for better decision making and city management

Traffic management in Singapore
More reliable city data for better, citizen-focused urban governance and better decision-making.

Technology is only part of the solution. The main part is about how municipalities organise themselves, operate and engage citizens.
for Phase II – 2016-2018: Systems Integration

- Developing a guiding conceptual framework to link the Urban Nexus to the global agenda: ‘The New Urban Agenda’
- Increase number of new cities participating
- How to bring in new industry partners?
- To be practical and action based
- Policy barriers in some countries – How to facilitate the Urban Nexus’ implementation?
- Collect evidence base from case studies
- Improve the methodology and inter-linkages

Shifting from a project-based to a systems’ approach
Recommendations for the next steps

Phase II of Urban Nexus should be supported by new policies and planning practice.

**How can we develop a strong methodology for evidence-based policy making?**

**What is holding us back?**

**Thematic goals**
- Learning from other cities: shared goals
- Creating new businesses and new skilled jobs
- Improving risk management and urban resilience
Proposing a holistic Conceptual Framework for Urban Nexus - Phase II

Strengthen impact of Urban Nexus

Participation of citizens, co-creation, community engagement

Providing a digital participation infrastructure

Sharing of knowledge

Establish a city wide platform to stimulate more innovation and enable up-scaling

... so what are the Enabling Factors that will make this possible?
Enabling Factors for resource-efficient cities - 1

Identify the barriers to enabling of the success factors:

• Lack of market incentives and finances, with poorly co-ordinated investments?
• Lack of long-term planning of cities?
• Lack of strong local champions and individual commitment?
• Lack of joint activities (linking the vision with planned and practical steps)
• Lack of public-private-partnerships?
• Lack of measurable targets for 2020 and beyond?
• Lack of a more systemic approach?
• Lack of monitoring and assessment tools?
Enabling Factors for resource-efficient cities - 2

Establish **long-term planning goals** and a coherent framework for policy formulation and a clear collaborative urban governance structure.

Connect a critical mass of organisations to be **working together**.

Clarify **indicators** (local vs global).

Establish **measurable objectives**, criteria and targets to assess case studies.

Establish agreed **feedback mechanisms**.

Capacity building: provide access to **technical expertise** in areas such as policy development and proven practical tools.
Pathway for the Enabling Factors and Guiding Framework

- Establish clear objectives, realistic goals, and long-term planning vision
- Create a clear governance structure including strong local leadership and incentives
- Make participation easy, improve access to finances and resources
- Develop commitment and processes for all stakeholders to work together, including community participation
- Consider all external factors, including: political, financial, environmental, social

Adapt strategies to local conditions
- Consider knowledge sharing methodology “Learning from other cities” platform
- Build and strengthen capacity including potential for transferability, replication and up-scaling
- Establish mechanisms for feedback and new policy formulation
- Ensure continuous risk management approach
- Monitoring: collect measurable data and analyse evidence from “Living Labs”
Other key opportunity areas for Urban Nexus

Identify the co-benefits for health, society, the economy and the environment

Establish an **Urban Nexus Research & Innovation Agenda** with practical research and innovation actions

Provide the evidence base for the effectiveness of Urban Nexus solutions and upscaling, in conjunction with all stakeholders
Defining the Smart City paradigm

Participatory and people-centred cities — a Smart cities approach

• Governments want to make the most of digitisation and the smart cities approach, working more closely with the science and technology sector.

• The new opportunities range from smart drone mapping, to virtual reality for slum redevelopment, to monitoring air pollution.

Infrastructure focus

Using infrastructure development to improve cities

• Compact urban form, infrastructure and building design are among the greatest drivers of cost and resource efficiencies, preventing sprawl.
4. Recommendations for the next steps and Key Messages
Pathways to impact

Facilitate and create tangible impact through:

• influencing planning practice and decision making
• improving urban policies, supporting the formulation of new policies
• Promoting the uptake of concepts by industry
• stimulating and leading public debate, engaging the public in co-creation
• making the research accessible for users to learn and adopt (peer-to-peer learning)
Conclusions - 1

The Research & Innovation Agenda of Urban Nexus should encompass:

- A more systemic approach to urban regeneration
- Further investigate the potential for transferability and upscaling of Urban Nexus solutions
- Exploring modular prefabrication to accelerate construction and increase impact
- Keep adapting Urban Nexus strategies to local conditions
- Improve knowledge sharing and participation of citizens: the involvement and empowerment of people in decision-making
Conclusions - 2

• Unblocking finances for the development and deployment of Urban Nexus solutions that:
  • Maximise cost-effectiveness and co-benefits
  • Allow for the scaling-up of solutions in cities across the Asia-Pacific region to provide a strong evidence base
  • Develop new business and investment models, legal frameworks and public-private partnerships

Putting the Enabling Factors into practice at the operational level
Conclusions - 3

How to move forward?

• A shared vision: creating a platform for decision-makers to exchange experiences and share best practice, to position and advance the Asia-Pacific as a leader in integrated planning of the New Urban Agenda
• Improve cities’ access to resources and financing
• Ensure stronger policy backing, building on clear governance structures
• Make participation in Urban Nexus easy
• Learning: create more research on resource efficiency
Key messages

How to up-scale and mainstream?

• Utilise a multidisciplinary and collaborative approach to project delivery
• Mainstreaming principles of the circular economy
• Focus on human-centred, citizen-centred design
• Utilising the digital creativity and its potential: incorporating urban data, scenario visualisation and spatial data analysis to engage citizens
• Standard setting and benchmarking: define measurable 2020 and 2025 targets for policy formulation
• Shift from building to neighbourhood scale.