

## Eco Innovera Strategy

# Systemic Innovation for Sustainable Cities

March 4, 2014 De Kas – Amsterdam, the Netherlands



## Workshop Report

### Background

The ECO-INNOVERA project staged a workshop that brought together experts in future- and smart cities with experts in system – and eco-innovation. The purpose of this workshop was to review the way cities and urban areas are expected to develop over the coming years, and the role eco-innovation could play in developing the products and services that will be needed to meet the future needs of the world's cities.

We wanted to explore the challenges that cities will face in the future and the way that ideas and techniques from the world of eco-innovation could solve some of these challenges.

The objectives for the workshop were:

- Identify the key components of the research agenda for eco-innovation in the area of sustainable cities
- Get a shared understanding of a systemic approach to future sustainable cities
- Identify how the approach of systemic innovation can be applied to initiatives in the field of sustainable cities.

### Programme

*Presentations:*

- The Eco Innovera project and Strategy, Evelyn Echeverria, Project Manager Juelich and Robbert Droop, Ministry of Infrastructure and Environment of The Netherlands

### **Key issues and Priorities for Future Sustainable Cities**

- *United Kingdom*- Richard Miller, Technology Strategy Board UK
- *Sweden* – Katarina Schylberg, Swedish Delegation for Sustainable Cities
- *Germany* - Andrea Koch-Kraft, DLR Germany
- *Urban Europe*, Joint Programming Initiative, Edwin Hubers, Dutch Institute for Scientific Research (NWO)

*Brainstorming session 1: Identify the key components and factors for a research agenda that will support the communities of future sustainable cities with a scientific basis the coming years*

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**Key insights on system innovation and re-organising urban systems**

- Elsbeth Roelofs, TNO Research Institute Netherlands
- Katleen De Flander, Institute for Advanced Sustainability Studies e.V. (IASS) Potsdam, Germany

*Brainstorm session: 2 - Create a clear perspective on actions that will connect the research agenda of systemic innovations to the planned initiatives of sustainable future cities.*

*Next steps: who will do what?*



## Workshop results

### **Result of Brainstorm 1: current issues and questions in 'sustainable cities' programs**

After the informative 'tour de horizon' of sustainable city developments in Europe the brainstorm to identify issues and questions that are relevant for sustainable cities programmes.

The questions were: 'what do you run into when developing sustainable cities programs? What question keeps on buzzing in your mind?'

The ideas were formulated as either problems or questions, and we grouped them according to similarity. Thus, common themes could emerge, of which we identified seven:

#### **1. Entrepreneurship and business models**

New forms of entrepreneurship and business models are needed to make eco-businesses profitable and sustainable. It is not yet evident how it works. Cities buy from established, large companies, not from innovative SME's. There are examples, but also many questions:

- How can we support SME's to work within a system approach?
- How to facilitate matching between technologies and implementers/ (early) adapters?
- What are the business models for companies to play in the future cities space?

- How to move from 'business as usual' to new business? There is a shift of profits and costs, including social values.
- How can cities facilitate start-ups, including transfer of new initiatives to private enterprises and the taking of risks?

## 2. Social innovation

Social innovation seems somewhere between wishful thinking and reality, but certainly not yet happening on the scale that is needed.

- How to balance the involvement of people that is needed for social innovation with the tendency of anonymity in urban environment?
- How to involve citizens in policy making and decisions, given the complexity of the system approach?
- Car sharing as an example of new business models: what other 'models' for sharing other things (offices, houses, rooms) are taking off?
- How to enable /empower actors within urban society?
  - learning by interacting
  - transition from bottom up



## 3. Shared language

If we want to develop solutions that go beyond existing boundaries, we also need a new language that helps to explore unknown territory. It happens that much effort is invested into an innovative call for proposals, with results being much of the same.

- How to move from Green Tech to system innovation? What language and terminology makes sense, and brings new ideas to the front?
- How to create a common vocabulary for both policy makers and researchers. How to connect both worlds?
- What are the new governance models for integrating private/public partnerships, systems and society?
- New role for government? It is not up to Govt. to come up with solutions but remove barriers like:
  - legislation and policies barriers (conflicts etc.)
  - Sudden changes of priorities (and back again)

- alternative jobs
- avoid creating new lock-ins: how do we do that?
- Respect the difference between complicated (but knowable and predictable) systems vs. complex systems with emergent, not predictable, properties.

#### **4. Shared learning**

Much new knowledge is developed with research, but what do we do with it? Does it make us any smarter? Many good technologies are lying on the shelf; we only communicate successes, while mistakes are kept out of the loop.

- How can we reach out and disseminate efficiently the results of research to the business and public sector end users? We tend to make findings much too complicated, hard to assimilate.
- How can stakeholders effectively learn from good and bad practices in sustainable cities?
- Best practices: how successful are current transition/systemic innovation experiences? Are we critical enough?

#### **5. Silos!**

Much of the work to be done for sustainable cities is technical and organisational, and it takes place in the 'silos' of the energy, water and transport departments - which generally do not co-operate with each other. At the same time, we know that sustainable solutions are 'in between' the silos, and therefore easily overlooked.

- How to tackle BIG problems without breaking them into silos?
- How can we line up the different rhythms of the political -, the technical - and the investment domains?
- Trans-disciplinarily: how does it work as a process?
- How can we involve building industry, public organisations, municipality etc. in research and make them interact with researchers, AND make them co-fund research? How do we get trans-disciplinary research?
- How can we use 'the complexity of the urban system' to enhance system innovation? How can it work in our favour?

#### **6. Mixed private/public business cases**

We have regulated monopolies to provide energy, water and public transport as a service, not to exploit it as a resource for our livelihoods.

- So who takes risks and generates benefits that go beyond service delivery?
- What is the business case for sustainable innovation projects in cities? How can companies make some money on the way to earn back investments?
- How can we motivate the business sector and public sector to get involved in, and co-fund research programs and projects? (In Sweden, building industry participates on 50-50 bases).

#### **7. Urban rural linkages**

Urban and rural areas are strongly connected through the functions they share: the resources and the products come in; the waste goes out and needs to be regenerated. Cities go beyond spatial boundaries, which imply:

- Inter-city approach to urban challenges: mobility requires demarcation that goes beyond city boundaries, and therefore requires a new governance and business model.
- Eco system services !
- In Europe, sustainable city development is based on integrated planning in existing urban settlements. Newly constructed 'mega cities' are only possible in Asia or the America's.
- Is the solution 'going up'?

## **Results of brainstorm 2: opportunities for co-operation**

A second brainstorm was scheduled in the afternoon to identify preliminary conclusions about useful combinations of the advanced systems approaches . The question was: 'If you look at the challenges for sustainable cities and the promises of a systemic innovation approach, what opportunities for co-operation do you see?'

We grouped the ideas according to similarity, and found the following three patterns:

### **1. Multiple value creation**

There are examples of systemic changes 'under our nose' that we hardly notice and maybe do not understand very well.

- How to find the eco-innovation challenges in city challenges AND how to see the city as a test bed for eco-innovation?
- Urban farming as an example of social innovation?
- Understanding shocks in related domains:
  - music business
  - books, publishers
- Which role plays ICT in changing city infrastructure?

### **2. Institutional barriers**

Looking at 'wholes' instead of 'parts' is not yet on our agenda, but the rewards are probably huge.

- Where the linkages between systems and what are the means for connecting them?
- Government regulation hampering innovations? => remove hurdles for entrepreneurs and citizens.

### **3. Programming for system innovation**

The system innovation approach seems promising to help funding programs identify new development paths and move beyond existing lock-ins.

- Change selection criteria for research projects (peer review = pilot project cases studies)
- Funding organisations can support system innovation; they have the power to set things in motion.
- Encourage the UEC to support more system innovation

- Understand the transition arena: Pressure points and Potential for change
  - select right persons/actors for change (why those?)
  - design phase, fast changes / slow structural change options
  - get an understanding of expected impacts
- Combine quadruple helix research projects with implementation (research action).

#### **4. Shared learning**

This is the same category as identified in the first brainstorm:

Much new knowledge is developed with research, but what do we do with it? Does it make us any smarter? Many good technologies are lying on the shelf; we only communicate successes, while mistakes are kept out of the loop.

- Create case studies, share and compare them, both successes and failures!

#### **Next steps**

Next steps were agreed as follows:

1. Create case studies of systemic change:
2. Case studies will allow us to draw conclusions about Multiple Value Creation and Institutional barriers.
3. Prepare a presentation on Programming for system innovation, exchange experiences and potentials.

Observation from Katleen: It is crucial to emphasise that system innovation needs to go beyond green products and ICT solutions. Maybe it is obvious for the people in the workshop, but it is definitely NOT obvious for most people outside.

#### **Looking back**

Looking back on the workshop, participants expressed satisfaction with the work done, and confirmed that almost all expectations were met. Participants from outside the network appreciated the opportunity to get a helicopter view of what is going on in other environments, and the fact that some clear patterns emerged. Participants from the network appreciated the coherence of the findings and the logic of the next steps, which will make it easier to present the final project findings in September this year.

## Participants

- 1) Richard Miller, Technology Strategy Board UK, Chair
- 2) Robbert Droop, Ministry of Infrastructure and Environment
- 3) Hans ten Hoeve, Ministry of Infrastructure and Environment
- 4) Dirk Schaap, Ministry of Infrastructure and Environment
- 5) Sarah Tromans, Technology Strategy Board UK
- 6) Rob van Emmeren, Economic Board Amsterdam
- 7) Conny Rolen, Formas Sweden
- 8) Katarina Schylberg, Swedish Centre for Innovation and Quality in the Built Environment; Swedish Delegation of Sustainable Cities
- 9) Rolf Brauer, High Level Working Group Eco Action Plan
- 10) Kristin Adriaensen, Cleantech Vlaanderen
- 11) Andrea Koch-Kraft, DLR Germany
- 12) Evelyn Eccheverría, PT Julich Germany
- 13) Elsbeth Roelofs, TNO Research Institute, Netherlands
- 14) Katleen De Flander, Institute for Advanced Sustainability Studies e.V. (IASS) Potsdam, Germany
- 15) Caroline Leenders, Future Cities Netherlands, RVO, Netherlands Enterprise Agency
- 16) Edwin Hubers, JPI Urban Cities, NWO Dutch Institute for Scientific Research
- 17) Antoinet Smits, RVO Netherlands Enterprise Agency
- 18) Charles de Monchy, Workshop Faciliator