



New Approaches in RTI Funding in Response to Grand Societal Challenges

COST INTREPID Workshop
“Urban research: beyond disciplinarity”
TU Delft, 21 April 2016

Overview

- The history of addressing complex societal challenges
- The „funding chain“ and a new understanding of innovation
- The need for a systems approach
- The systems dimensions of complex societal challenges
- Uniting scientific excellence and implementation
relevance: transdisciplinarity as as a new paradigm in
RTI

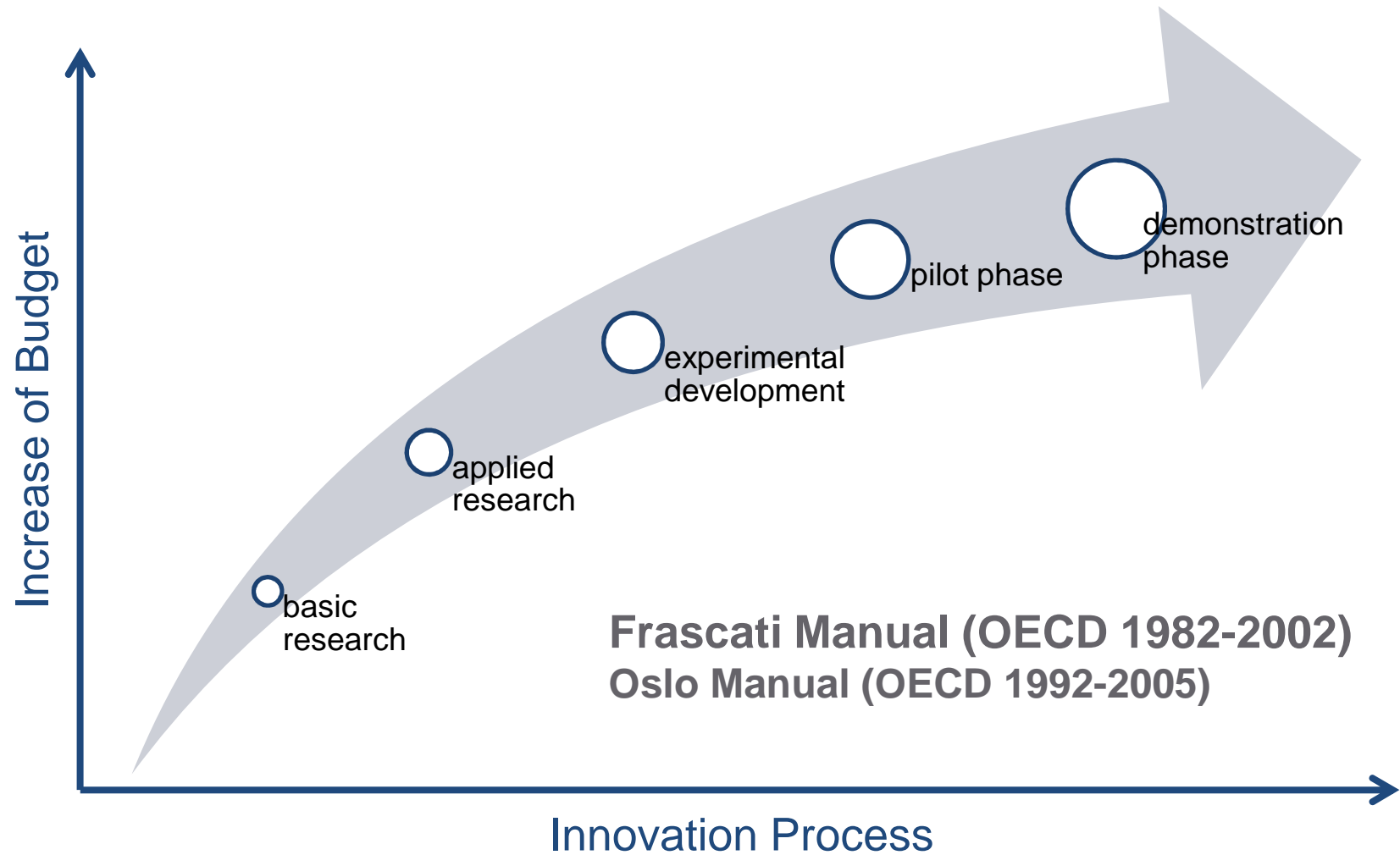
From Problem-Solving to Management of Complexity

- 1980s: Environmental technologies
 - technological innovation + environmental research & protection
- 1990s: Cleaner production, pollution prevention, technologies for sustainable development
 - new technologies + sustainable economic & environmental benefits, upstream management of value creation chain
- 2000s: Sust. development, corporate social responsibility
 - economic + social + technological innovation & sustainable benefits
- 2010s: Grand Challenges, Smart Cities, Urban Innovation
 - responses to grand societal challenges, new governance models, involvement of multiple actors, integrated multi-dimensional planning processes, systems approach

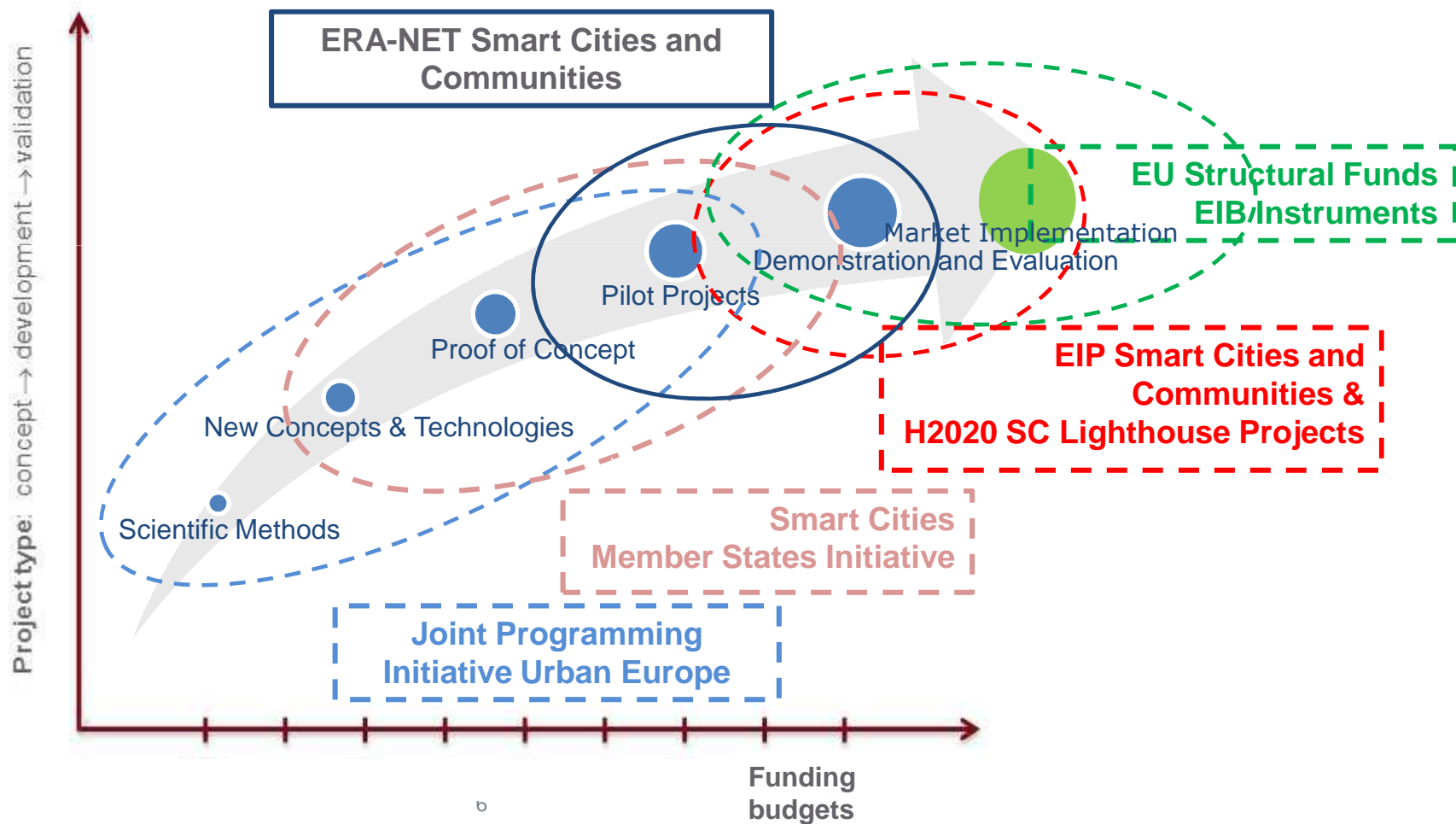
A new understanding of innovation

- Innovation was conceptualised in the 1970s and 1980s as a linear model (OECD Frascati and Oslo Manuals)
- Modern innovation theory looks at innovation as a multi-dimensional process
- Innovation in complex systems is currently being described in terms of transition pathways
- The old paradigms of “excellence” vs. “relevance” will cease to be in conflict, but rather be complementary

Linear Innovation: The Classic Chain Concept



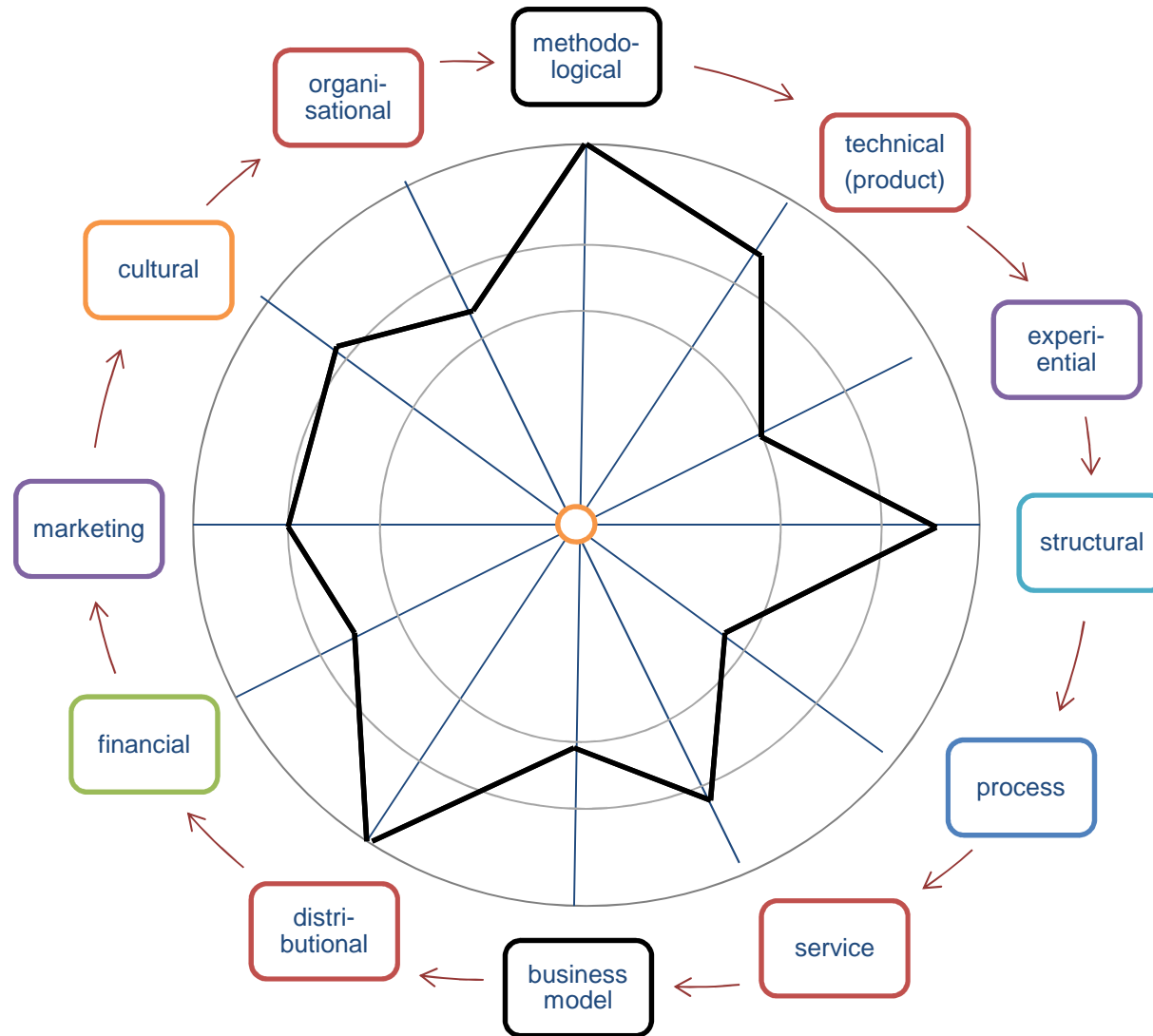
The EU Funding Chain in Urban-related RTI from Basic Research to Implementation



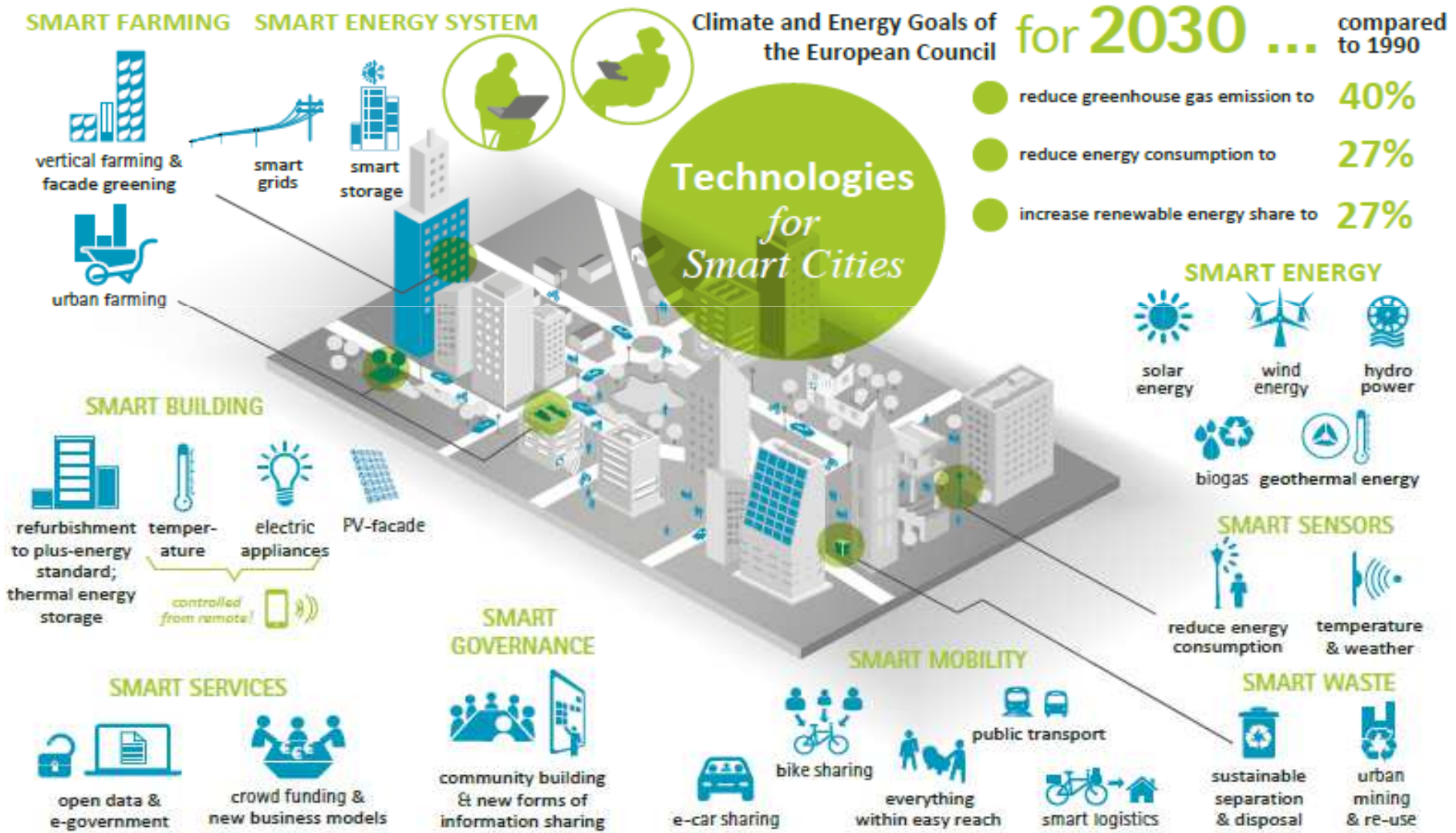
The Systems View: Introducing Multi-dimensional Approaches

- Understanding a complex system requires a set of dimensions, which allow to keep the whole system in view, even when examining its details
- The same system can be described through different sets, and different numbers of dimensions
- Our standard scientific disciplines mostly are not able to take a systems view – often they operate within one system's dimension only
- Technology, for most systems, is not a system's dimension, rather an enabler for solutions

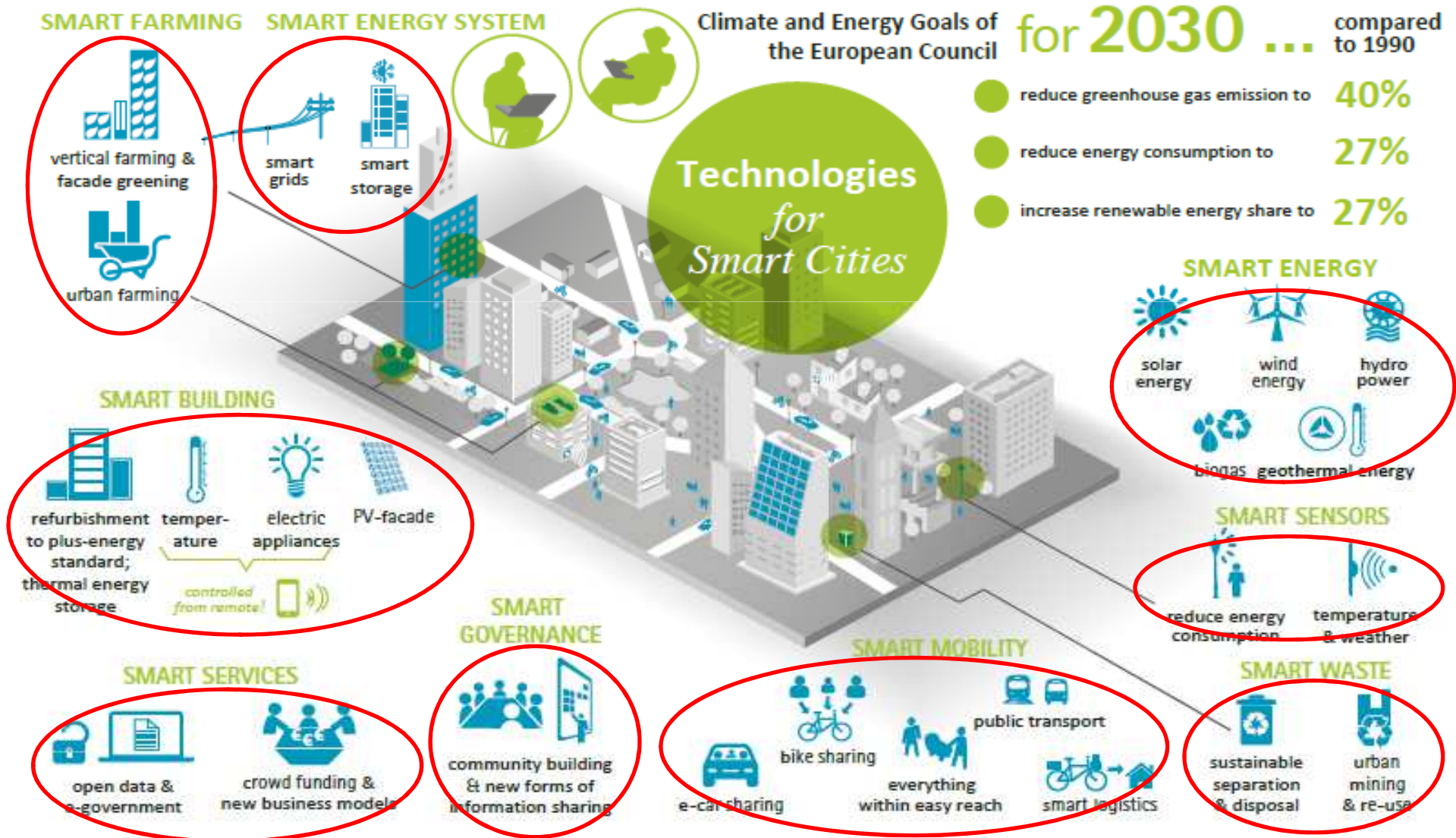
Example 1: Multidimensional Approach of (Product-) Innovation



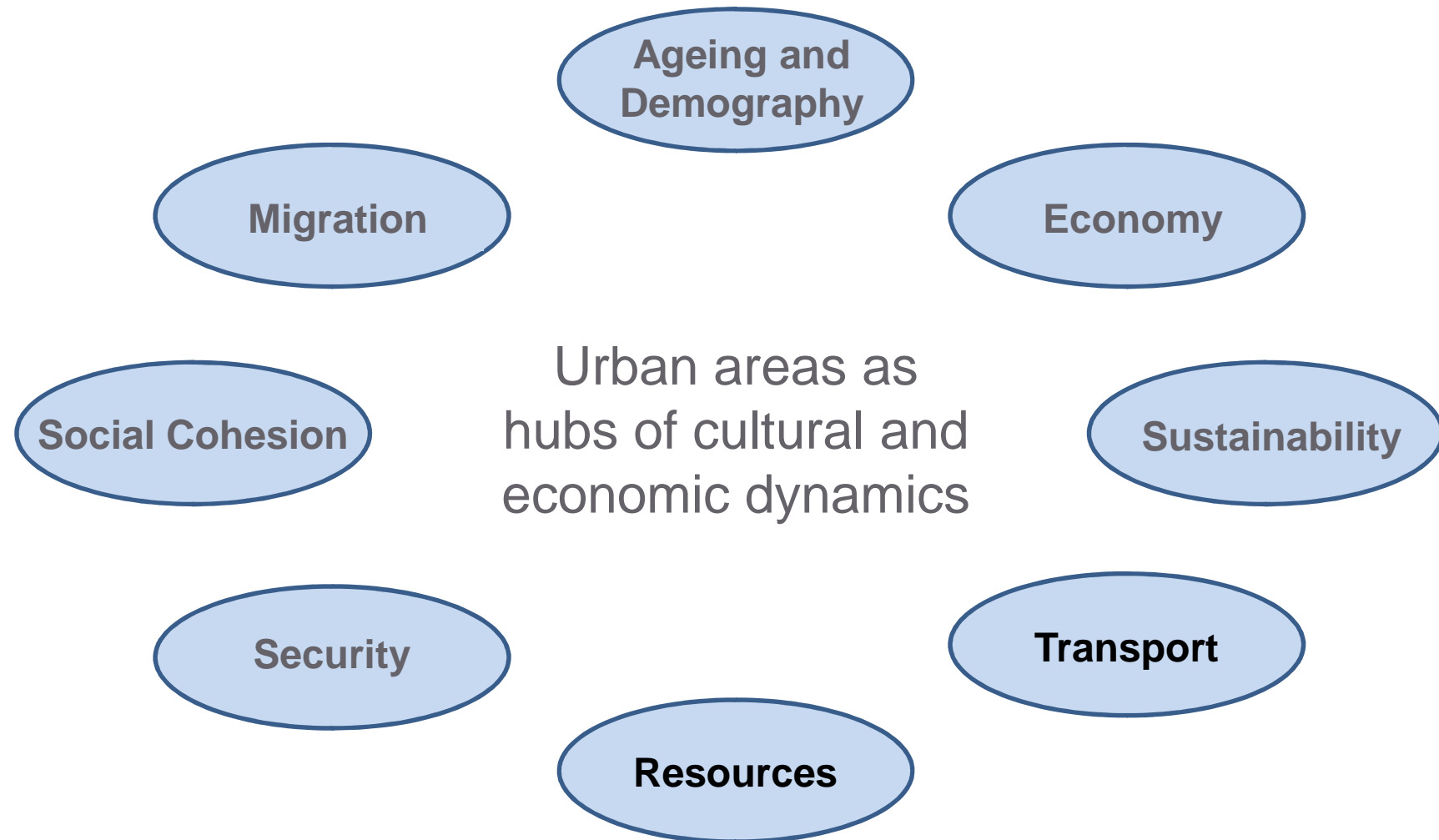
Example 2: Smart Urban Technologies



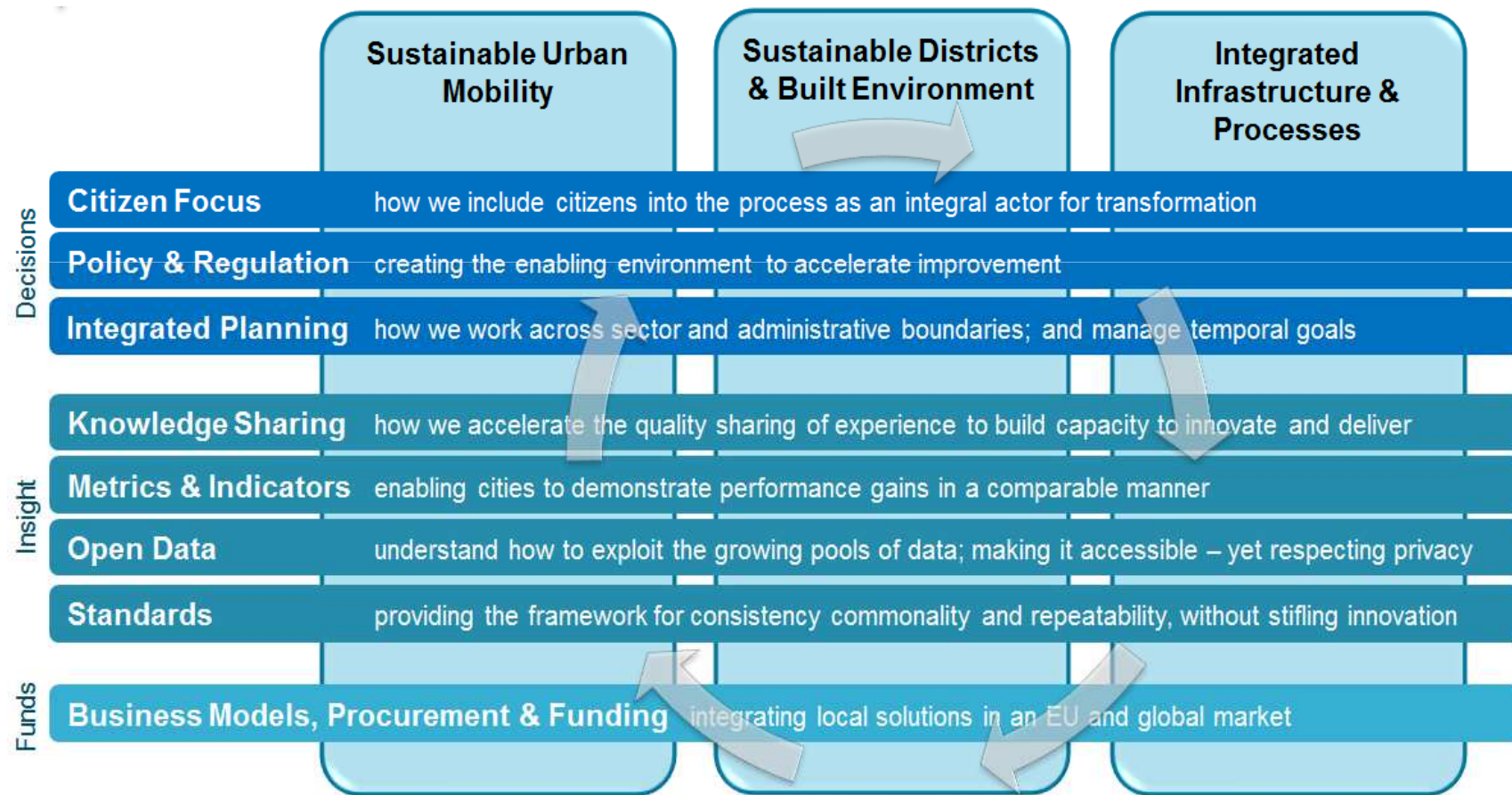
Example 2: Nine Clusters of Smart Urban Technologies



Example 3: Dimensions of the Urban Challenge

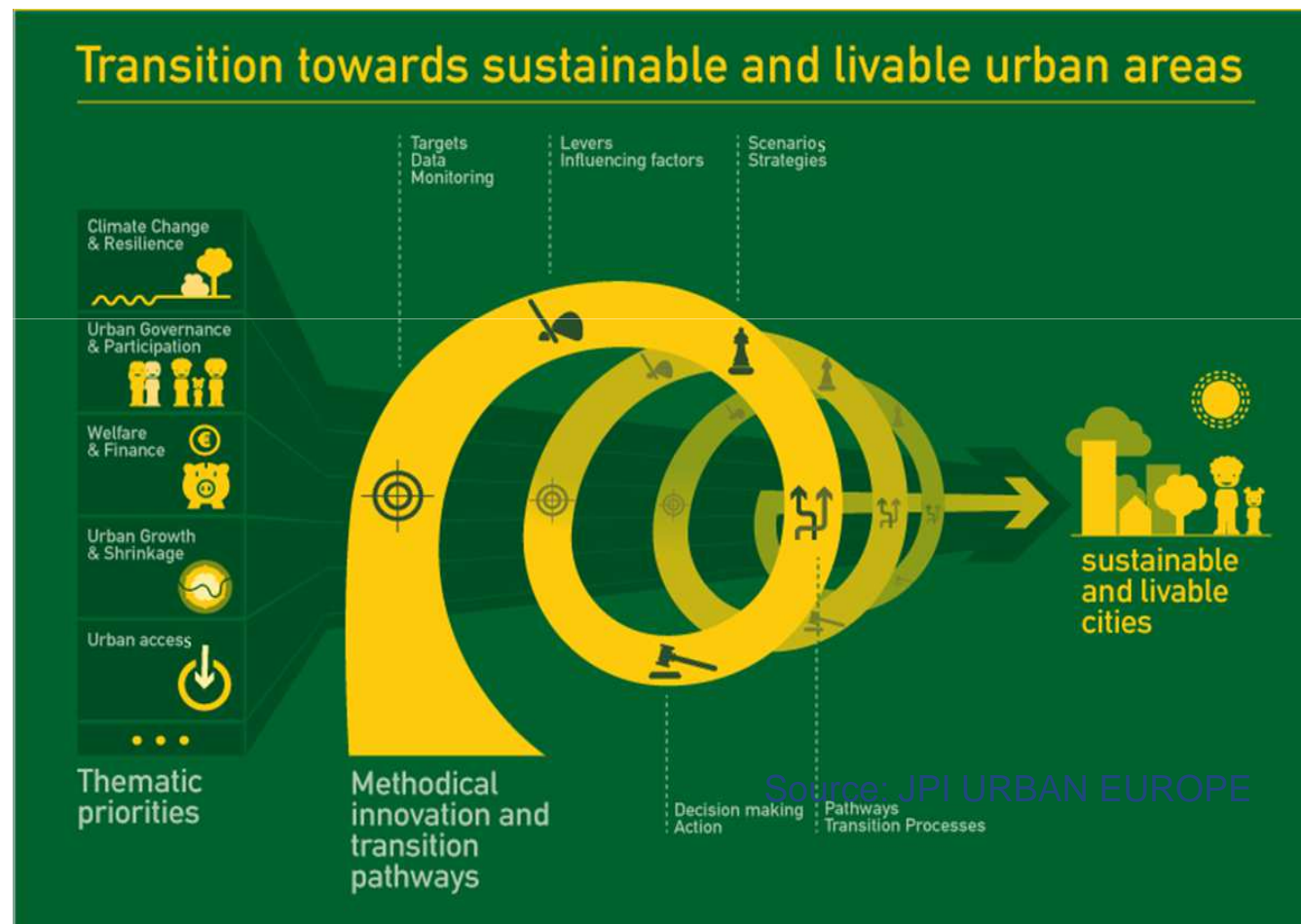


Example 4: EIP SCC: Priority Areas of Actions



Example 5: Transition along five Thematic Dimensions

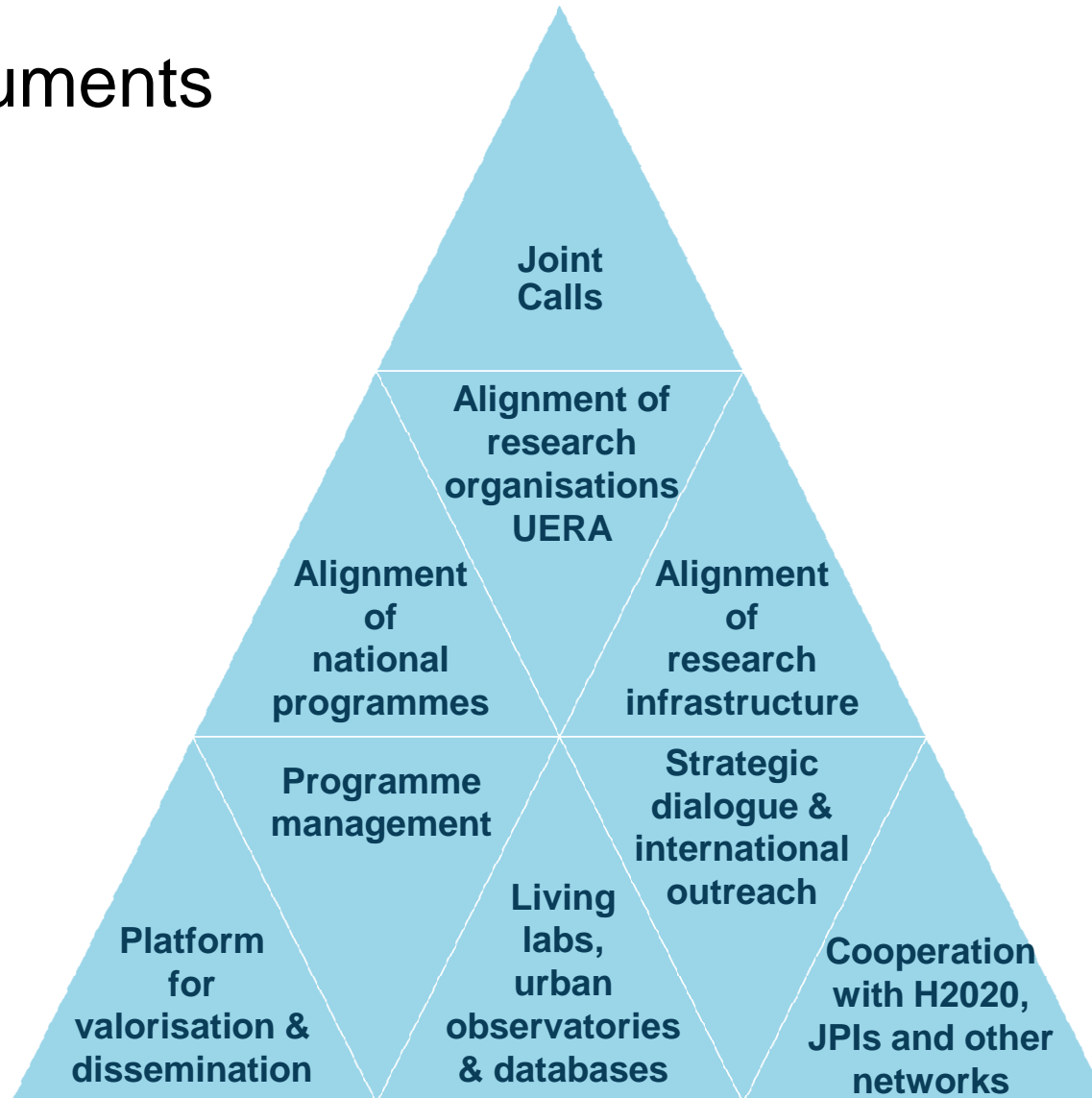
1. Vibrant urban economies
2. Welfare and finance
3. Environmental resilience and sustainability
4. Accessibility and connectivity
5. Governance and participation



Addressing the grand societal challenges needs a new type of RTI funding

- Supporting the new paradigm of interdisciplinarity and transdisciplinarity (co-creation)
- Bringing together elements of basic research / methodology development and applied research, enabling implementation
- Facilitating the dialogue between implementation practice and scientific insight and evidence
- Putting the mission of research programmes first, by disentangling the assessment of relevance and excellence of project proposals

Instruments



New Demands on the Quality of RTI

- How can interdisciplinarity and transdisciplinarity be framed as a prerequisite for addressing the multi-dimensionality of grand challenges
- How can interdisciplinary and transdisciplinary RTI be enabled, and how can it be rewarded by the RTI programme?
- How can evidence created within the RTI programme inform the implementation work of practitioners?
- At what point in time will grand societal challenges respond to market mechanisms? How can market actors be involved?
- How can the needs of implementation practice be translated into RTI questions?

Challenges for Funding Transnational RTI

- Creating a long-term strategic vision in addressing the respective societal challenge
- Setting up a programme management structure, which can guarantee a longitudinal dimension of the transnational joint programme
- Turning the differences between the national funding institutions into an advantage
 - Diversity of funding scopes, funding cultures, funding rules, eligible stakeholders
 - Long-term collaboration enabled by mutual respect, trust, and by flexibility
 - Use of transnational instruments (like ERA-NET Cofund), which support the funding network in overcoming the national political cycles
- Establishing a dialogue with stakeholders in RTI, practice, policy (national and EU), and business, which can ensure the relevance of the joint programme

Thank you for your attention!

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