

JPI URBAN EUROPE

ANNEXES TO THE **STRATEGIC RESEARCH AND INNOVATION AGENDA 2.0**

January 2019



This document complements the Strategic Research and Innovation Agenda 2.0 of JPI Urban Europe. It provides additional background information on particular strategic issues, policy references or conclusions from the previous JPI Urban Europe development.

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JPI URBAN EUROPE

JPI Urban Europe is a transnational research and innovation programme built upon and aligning national strategies and research programmes on sustainable urban development.

January 2019



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ANNEX 1: STAKEHOLDER INVOLVEMENT IN THE STRATEGY PROCESS

The main steps that led to the SRIA 2019 were (Figure A1):

- The development of a position paper of the **Scientific Advisory Board** of JPI Urban Europe.¹ The main focus of the position paper was to propose a strategic reference on how to connect to the SDGs and other international policies and to provide recommendations for key elements of the SRIA.
- An **open consultation** to collect the input and the views of urban stakeholders on thematic priorities as well as on strategic elements addressed in the SAB position paper, related to the implementation of the research and innovation agenda, such as enhanced science-policy cooperation, capacity building in research and policy as well as benefits of and conditions for transnational and international cooperation. More than 80 responses were received from researchers, city administration, public bodies and businesses from across Europe and beyond. In addition, the Urban Europe Research Alliance, a network of European research organisations addressing urban research issues and supporting the implementation of the JPI Urban Europe SRIA, provided a consolidated response to the consultation.²
- A **Stakeholder Dialogue** was organised to reflect and consolidate the consultation results towards key issues for the SRIA. Once again, the Stakeholder Dialogue brought together urban stakeholders from most of the JPI Urban Europe partner countries, involving policy makers, researchers, city administration, city networks, societal actors and research funders.
- All this input was used to develop a SRIA concept, which was not only discussed with the Scientific Advisory Board and the Governing Board but was also put forward for **national consultations**. This allowed reflection on the SRIA concept and its proposed priorities against national ones, to align the agenda with national, regional and municipal strategies and programmes and to mobilise urban actors. National feedback was received from 10 countries.

¹ Kabisch et al. (2018).

² UERA (2018).

- Additional consultations were organized with the partnerships of the Urban Agenda for the EU (UAEU). These partnerships address key issues for sustainable urban development and identified needs for action regarding better knowledge, better regulation and better funding. As several of these have elaborated joint action plans it was thought to be highly relevant to align the SRIA 2.0 with those actions and priorities. Thus a consultation workshop was carried out with the **coordinators of the UAEU partnerships**.
- Finally, a **consultation with the European commission** was used to consider priorities of the various urban-related EC units under Horizon 2020 and to anticipate those of Horizon Europe with the ambition to ensure complementarity and well-structured interfaces in support of future cooperation.
- All this input was consolidated and resulted in the SRIA 2.0 concept, its thematic priorities and implementation plan.

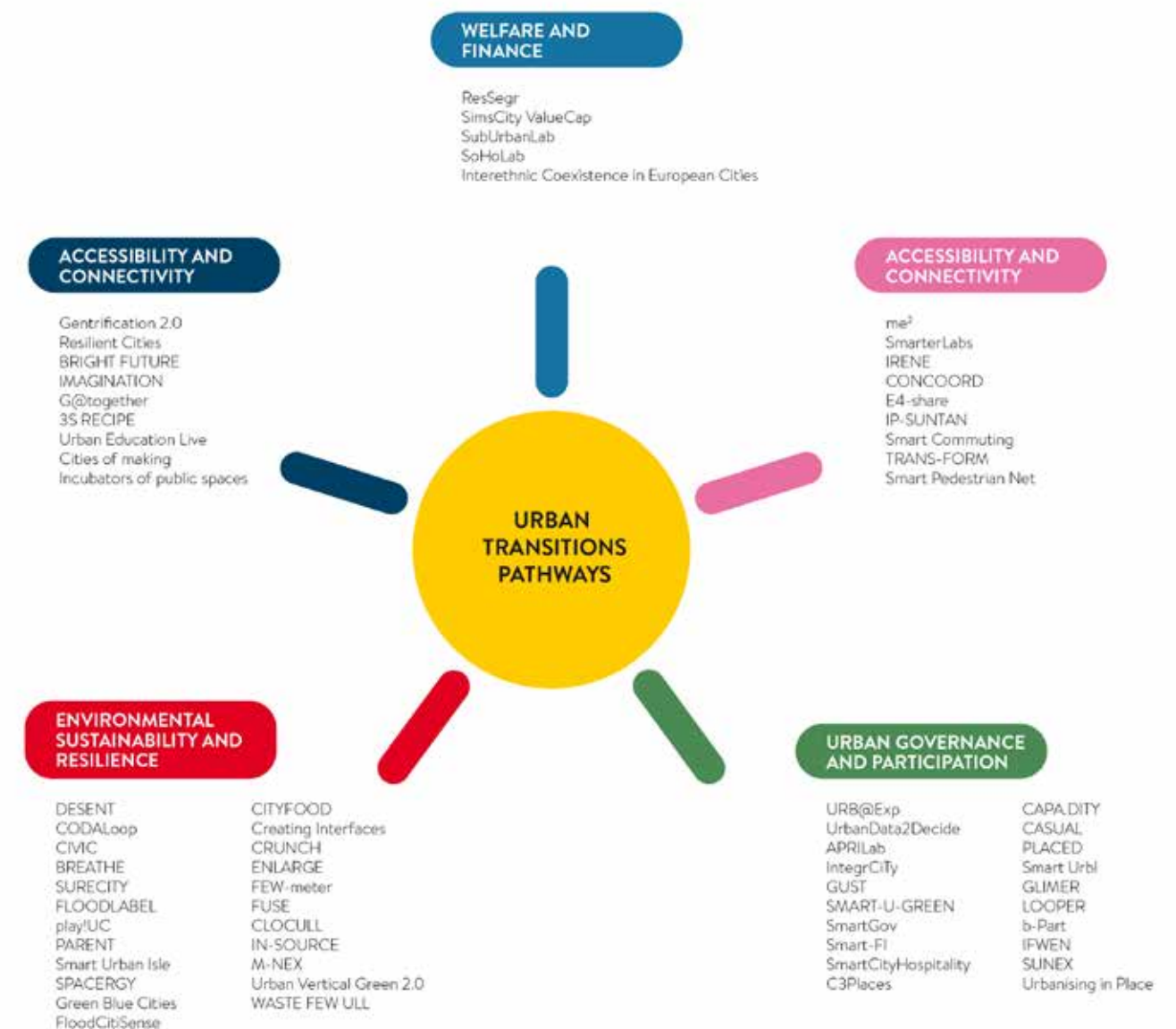


^ Figure A1: The SRIA 2.0 update process.

> Figure A2: Clustering of the JPI Urban Europe project portfolio according to the SRIA 2015 thematic priorities

ANNEX 2: THE JPI URBAN EUROPE PROJECT PORTFOLIO – RESULTS AND FINDINGS

Until 2017 about 100 million EUR have been spent and 67 projects have been funded (Figure A2). Although most of these projects are still under implementation or even in their early phases, the JPI Urban Europe Management Board carried out a rapid preparatory mapping in December 2017 with the aim to get a first overview of the current project portfolio in relation to international urban policies. The Urban Agenda for the EU (UAEU) and SDG 11 were used as primary references.



For the UAEU, a large part of the projects clearly work towards the cross-cutting issues with innovative approaches for urban development (including smart cities; 12.5), but also on integrated and participatory approaches as well as on effective urban governance for participation and new governance models (12.4 and 12.1 respectively). At the same time a quite large share of JPI UE projects relates to the thematic priorities on sustainable land-use and Nature-Based Solutions (NBS), the number of which were considerably increased by the SUGI projects even if projects from the early pilot calls and ENSUF cover these topics (Figure A3).

The portfolio so far is not strong regarding public procurement (10.12), urban poverty (10.3), and the cross-cutting thematic around urban regional and urban-rural collaborations (12.2).

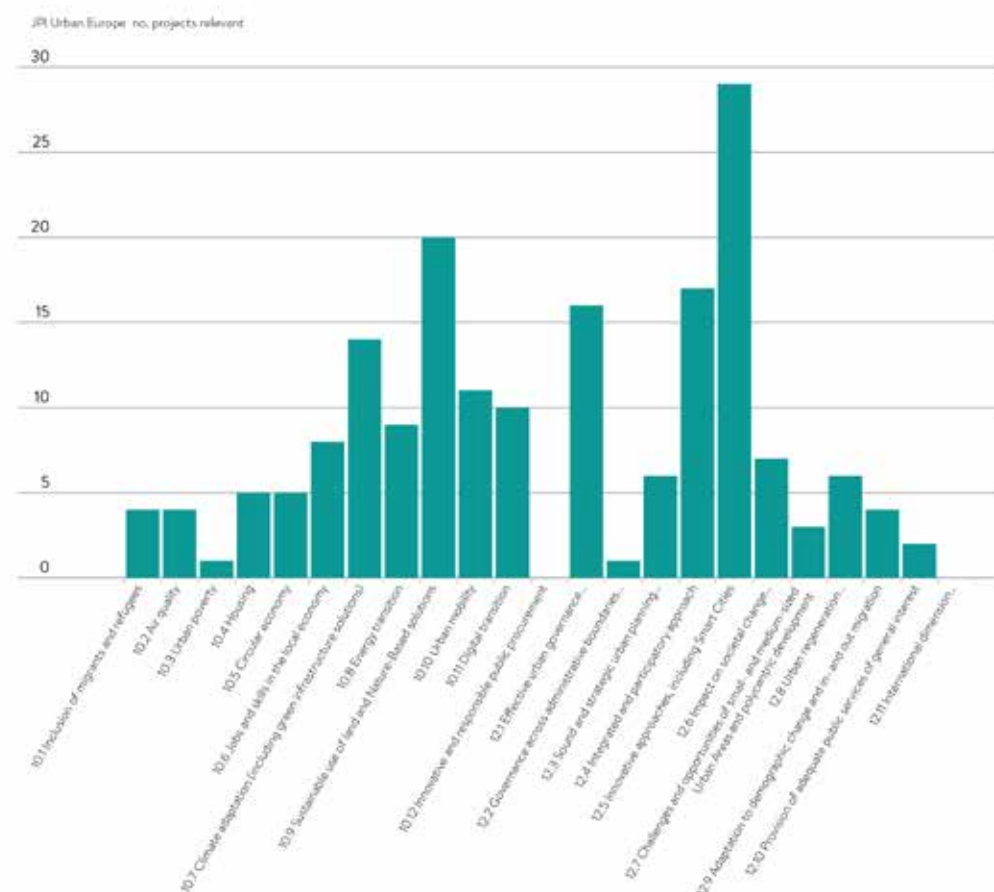


Figure A3: Mapping of JPI Urban Europe projects to the thematic (10.x) and cross-cutting (12.x) issues of the UAEU.

Regarding the UN Agenda 2030 and specifically SDG 11, the portfolio was considerably strengthened by the recent addition of SUGI projects considering the SDG sub-target on cities to reduce the per capita environmental impact, particularly air quality and waste (11.6). However, the overall portfolio strongly supports the target on developing urban planning and management for inclusive and sustainable urbanisation (participatory and integrated urban development; 11.3). The portfolio shows a weak, if any, focus on heritage issues (natural/cultural; 11.4) and crisis effects and aftermaths (11.5) as well as support for least developed countries' sustainable urbanisation (11.c).

Besides this first mapping, a review of the portfolio in Annex 3 presents a baseline in the SRIA 2.0 update regarding increased ambitions on interdisciplinary and cross-sectoral approaches as well as ULLs. However, already some characteristics have emerged here concerning the profile shaped by SRIA 2015 in terms of approaches and the kinds of achievements made so far. This profile can loosely be considered an assessment of instrument performance.

The centrepieces in the current profile are the Urban Living Labs (ULL). Approximately 25 projects are applying living lab formats in different ways, ULLs can be seen as an important methodological part of a core approach in urban transitions: urban experimentation. This is mainly grounded in the need of challenge driven programmes to work with non-linear approaches. In this regard, JPI UE has generated strong support for such method developments in different topical areas, e.g. related to improving energy efficiency, fostering behavioural changes, developing and testing new urban governance approaches, or co-creating policies supporting interethnic diversity. Furthermore, some JPI UE projects not only applied living lab methods but also investigated ULLs and urban experimentation approaches (projects such as GUST, URB@Exp, Casual, etc.).³

Although a more comprehensive analysis of the projects' results is needed for exploitation and dissemination, the project portfolio and its results are important references to offer evidence for policy making, strengthening science-policy cooperation and improving instruments to meet real needs in urban transformation. In other words, the mapping concludes with a caution for the update to simply build further upon on these achievements. As JPI Urban Europe is *challenge driven*, the priorities and issues to be tackled need to be firmly based on the challenges articulated by the 'demand side' – by city authorities, civil society, and urban research and innovation advice.

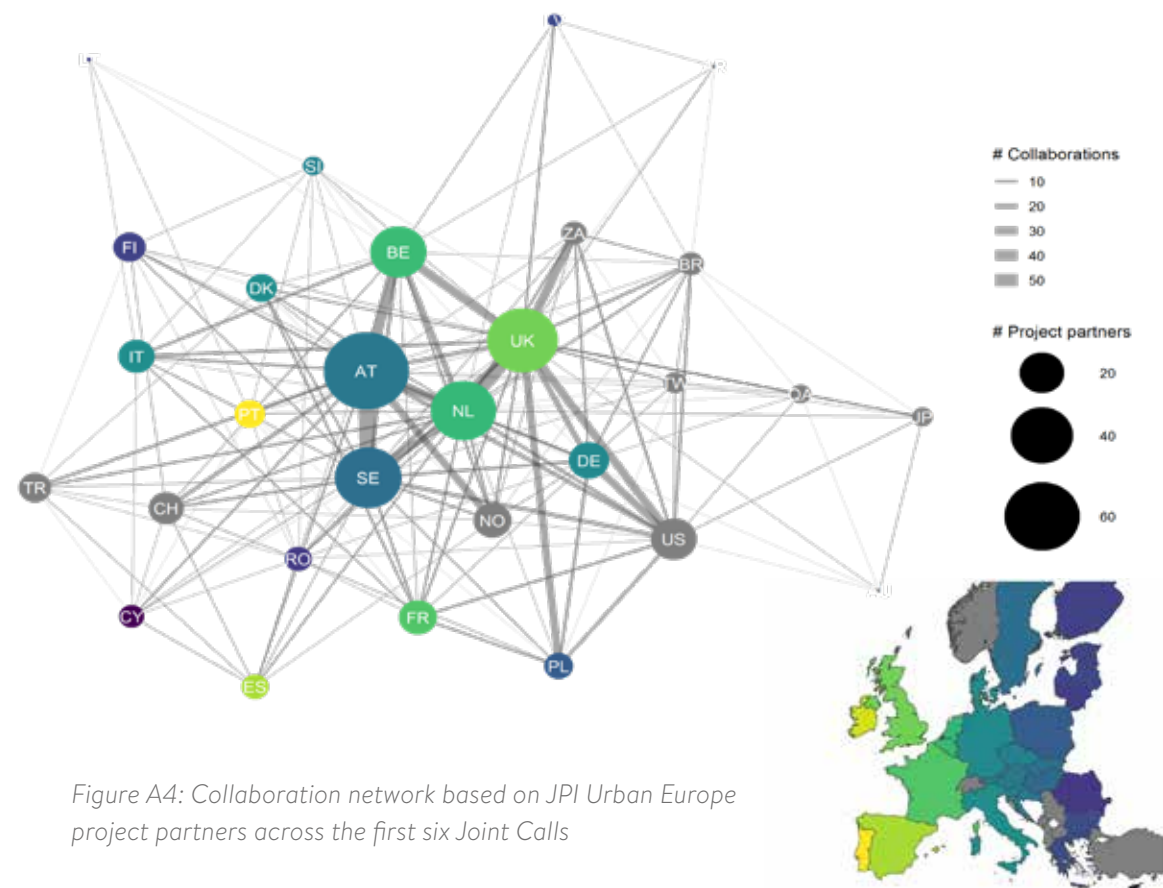
³ For more details on these projects see Annex 6

ANNEX 3: SRIA 2015 PORTFOLIO REVIEW

ANNEX 3.1 THE LANDSCAPE OF COLLABORATION AMONG THE PROJECTS OF THE JPI URBAN EUROPE JOINT CALLS

Since 2012, JPI Urban Europe has launched annual calls addressing specific thematic priorities in the SRIA 2015. More than 70 projects have been funded and 80 Million EUR granted. 39 Funding Agencies from 29 countries actively supported the JPI Urban Europe Joint Calls. Approximately 450 project partners across Europe and beyond are involved in projects funded by JPI Urban Europe Joint Calls. Partners include universities, research organisations, city administrations, business and non-profit organisations.

Based on a comprehensive project database a systematic analysis of transnational collaboration patterns between countries and stakeholder groups, across Joint Calls and thematic priorities was performed by the Robert Kalcik and Susanne Meyer from the Austrian Institute of Technology. The aim was to draw conclusions regarding future requirements and opportunities for transnational research, technological development and innovation programme.



JPI Urban Europe Joint Calls have established a dense network of research collaboration among participating countries.

Figure A4 shows the network of countries which supported urban research projects during the first six JPI Urban Europe Joint Calls. The size of a node represents the number of project partners based in a country; while its colour shows the geographic location (from west – yellow, over central – green to east – blue, grey – non-EU28). The thickness and transparency of the connections depicts the relative number of partners collaborating between these countries. Countries are positioned close to each other, if many projects have involved (funded) project partners from both countries. In the median, a country is connected to 10 of the 29 participating countries via transnational collaborations.

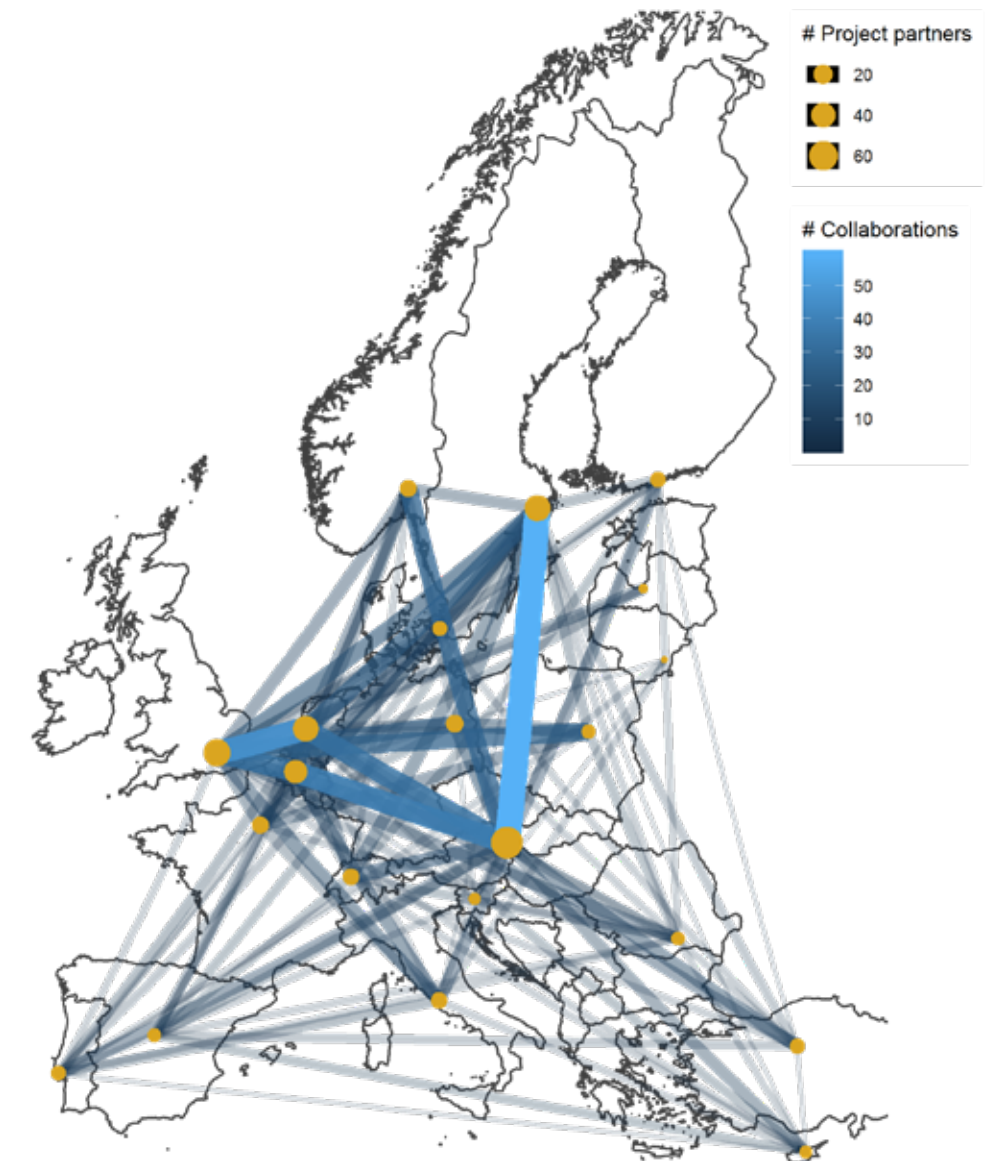




Figure A5: Geographical collaboration network based on JPI Urban Europe project partners across the first 6 Joint Calls (Connections are drawn between capital cities)

In general, the collaboration network can be described by a core-periphery structure. The Netherlands, the United Kingdom, Sweden and Austria define the core structure of collaboration in the Joint Calls. Other countries are more weakly interacting although some countries show a strong contribution. Romania, for instance, is close to the core of the network driven by its repeated involvement in JPI Urban Europe Calls. Widening Countries, such as Slovenia, Portugal and Cyprus, play an important role as connectors between otherwise not related countries.

A set of core actors are connecting a large number of collaborators from Europe and beyond.

A similar pattern emerges inspecting the collaboration structures in the geographical network in Figure A5. While not in the core of the network, collaboration in Europe spans from Portugal in the West to Turkey in the East. Geographical distance, however, does not appear to be the main barrier to collaboration, as the SUGI call in cooperation with the Belmont Forum spawned joint projects across the globe.

The structural characteristics of the collaboration network changed along the series of Joint Calls as can be seen in Figure A6. Overall, the network behind the JPI Urban Europe Joint Calls grew larger from the initial Pilot Calls in 2012 – 2013 to the SUGI Call

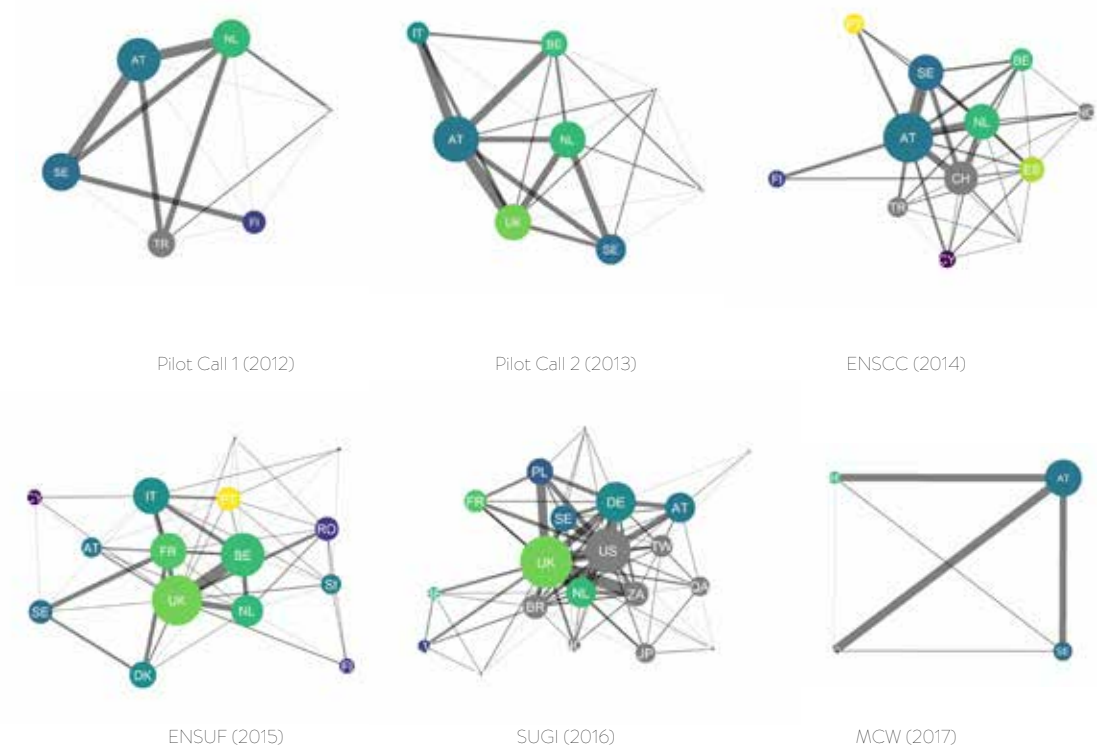
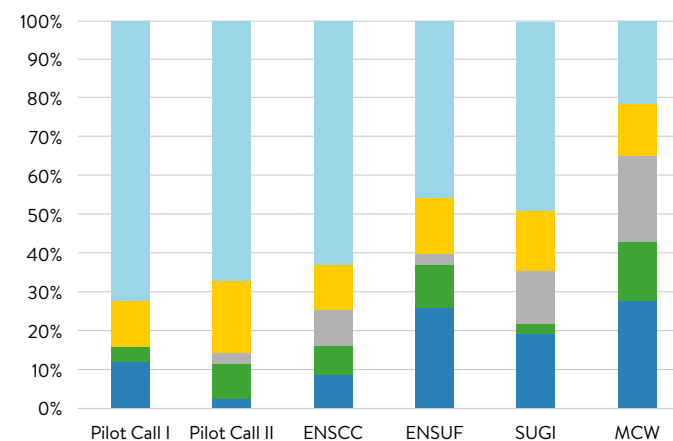


Figure A6: Collaboration network based on JPI Urban Europe project partners for each of the first 6 Joint Calls

in 2016. While the Pilot Calls were characterized by a dense network of a small set of core countries collaborating; several new actors joined the network in the three ERA-NET Calls leading to a high absolute number of connections. The ERA-NET Calls, thus, played an important role in extending the network.

The call Making Cities work (MCW), launched in 2017 piloted and realised a challenge driven approach with cities as main stakeholders and resembles the earlier Pilot Calls in terms of structure.

The approximately 450 project partners in the first six calls included universities, research organisations, city administrations, business and non-profit organisations. Figure A7 shows the distribution of actor groups in each call. The centre of the collaboration network mostly consists of universities, while cities and municipalities are located towards the periphery of the network. In MCW, however, cities were involved already in the process of developing the call and as active partners in the projects leading to a balanced proportion of partner types.



ENSCC = ERA-NET Cofound Smart Cities and Communities, **ENSUF** = ERA-NET Cofound Smart Urban Futures, **SUGI** = Sustainable Urbanisation Global Initiative, **MCW** = Making Cities Work

● Universities and other educational institutions ● Research organisations ● NPO
● Cities and Governmental institutions ● Allocated Call Budget

Figure A7: Distribution of actor groups among the project partners in the first 6 Joint Calls

In terms of thematic priorities of the SRIA 2015, ‘Environmental Sustainability’ and ‘Urban Governance’ were the two most strongly addressed priorities.

The associated priority area of the 73 projects is illustrated in Figure A8 showing that more than half of them focused on one of these two areas. Joint Calls have become increasingly thematically concentrated over time. While Pilot Call I and II were very broad in focus, projects in the subsequent calls tended to focus on few areas.

Although the structure of collaboration is similar across the SRIA thematic priorities, different countries are located towards the center of the networks. The United Kingdom plays a central role in ‘Vibrancy in Changing Economies’ and ‘Environmental Sustainability and Resilience’, whereas Austria is in the center of ‘Urban Governance and Participation’ and ‘Accessibility and Connectivity’. The Netherlands and Sweden represent the core in ‘Welfare and Finance’ network.

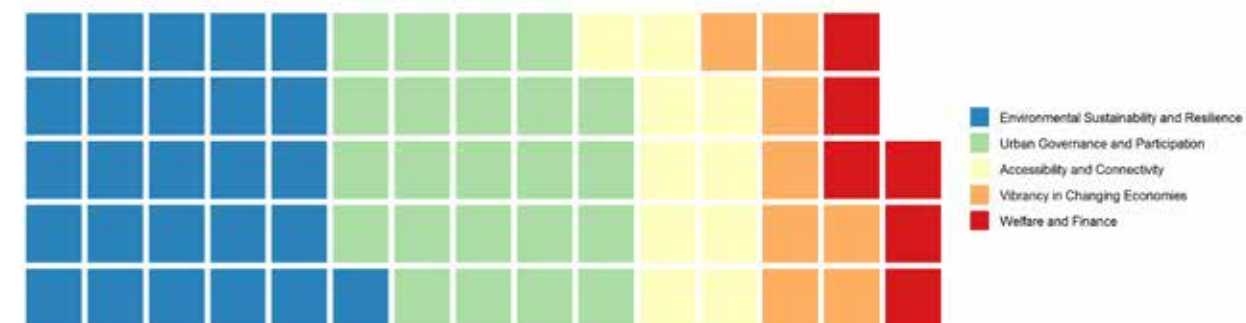


Figure A8: SRIA 1.0 thematic priorities of the 73 funded projects in the first six calls

Key recommendations can be drawn from the presented analysis for the development of the SRIA 2.0 of JPI Urban Europe. Specifically, JPI Urban Europe should aim to:

- ▶ Build upon the achieved results and competences of a strong core community to benefit from transnational collaboration,
- ▶ leverage the position of Widening Countries already present in the JPI Urban Europe network to connect to new collaboration partners, thus increasing the extent of the network and
- ▶ continue to improve framework conditions that facilitate multi-actor engagement and a balanced and early involvement of cities and urban stakeholders in JPI Urban Europe projects to ensure high impact and a mutual benefit from transdisciplinary research.

ANNEX 3.2 PROJECT PORTFOLIO REVIEW 2018

In order to take stock of the work produced so far for the preparation of setting the new research agenda for the coming period, the JPI Urban Europe Management Board has asked a team of three academics, Martin de Jong from Erasmus University Rotterdam, Simon Joss from the University of Glasgow, and Daan Schraven from Delft University of Technology, to undertake a review of the project portfolio. The materials for the review represent a mixture of project progress reports, final reports, synthesis reports, academic articles, and project proposals relating to the joint calls funded by JPI Urban Europe in the period 2012–2018 (Pilot Calls 1 and 2, ENSCC, and ENSUF).

The review states that overall:

- ▶ A wide spectrum of topics are covered
- The portfolio offers useful knowledge and information on the range of problems that exist in cities, and they are solution-oriented
- A satisfactory level of critical mass has been achieved to date, and useful critical insights generated to inform and benefit the urban studies community (both in academia and for practitioners) in Europe

However, the review also articulates crucial concerns from a scientific perspective:

- ▶ There still remains significant knowledge gaps. For instance, the SRIA 2015 seems to have generated more focus on digital transitions than on sustainable transitions.
- The innovative solutions found in the experimental settings of Urban Living Labs often have a hard time being adopted in the wider urban governance setting

The report hence warrants JPI Urban Europe’s the SRIA 2.0 orientation of themes and the transition arena implementation approach:

- ▶ The dilemma-driven approach calls for new sophisticated policy and practice instruments yet in line with SRIA 2.0 direction and with increased ambition which requires more sophisticated research approaches (both conceptually and methodologically) to achieve the ambitions.
- The need for strategic synthesis partly to support more output from the portfolio, partly to prevent ‘reinventions’.
- The need for more active programme/portfolio management and monitoring in terms of thematic substance and conceptual innovation among projects.

The review offers the following recommendations to JPI Urban Europe to support the implementation and impact of SRIA 2.0. With the SRIA 2.0, JPI Urban Europe should:

Encourage ambition by increasing and improving critical mass of research

- ▶ Fund projects at the forefront of innovative critical thinking and demonstrate where interests and values intersect with each other and painful policy choices appear
- Deploy sophisticated methodologies suitable for interrogating the complexities of these policy dilemmas and choices that have consequences
- Produce original empirical findings to significantly advance our knowledge on how controversial choices can be made tractable

Focus on cross-boundary innovation and integration

- Transition to more sustainable outcomes: increase focus on determining substantive and actual outcomes of activities aimed at supporting sustainable development.
- Work towards an approach to infrastructure as ‘consumptive amenities’: the linkage between ‘hard’ urban infrastructure and ‘soft’ behavioural and consumption issues remains weak and underexplored.
- Tackle the governance deficit in urban experiments: focus more on new institutional integration by the results from urban experimentation and lab approaches, an integration that entails the scaling-up of urban experimental approaches themselves as well as focusing on the social resonances of these urban experiments.

ANNEX 4: POLICY CONTEXT

Since the JPI Urban Europe published its SRIA in 2015, transitions towards sustainable and liveable urban areas have gained more relevance. Sustainable urbanisation has been recognized as being critical in tackling a wide range of the societal issues of our time. These policies resonate very well with the ambitions, vision and strategic priorities of JPI Urban Europe. In all of the global/international policies discussed below, research and innovation is recognized to play an essential role in implementing the UN Agenda 2030, UN-HABITAT New Urban Agenda, and the UAEU agendas, localize the goals and to bridge actions/activities on a local, national, international and global scale. Research and innovation can contribute information, knowledge and expertise and translate it from one geographical context to another. This chapter briefly points out the global and international policy context for sustainable urban transitions, discusses the key elements and international and European ambitions for sustainable urban development of the agendas and draws focus to the relevance of JPI Urban Europe's SRIA 2.0.

The policy agendas discussed below provide a solid frame for JPI Urban Europe's Research and Innovation strategy and activities. The SRIA 2.0 provides the basis for contributing evidence based knowledge to these policies and connect them to national innovation policies and national actors, strategies and action plans. At the same time, the consequences and requirements for research, technology and innovations are reflected in the approach and thematic priorities of the SRIA 2.0.

United Nations' Agenda 2030 and the 17 Sustainable Development Goals

In 2016, the UN published *Transforming our world: the 2030 Agenda for Sustainable Development*,⁴ an agenda identifying 17 Sustainable Development Goals (SDGs) which aim to mobilize global efforts to achieve sustainable development world-wide. The resolution containing the goals was signed by 193 countries which committed them to report on the progress made regarding the SDGs on a national level. In contrast to UN's Millennium Development Goals, the SDGs do not primarily target developing countries but are universal.

Urbanisation (in terms of speed, trajectories, amount and consequences) is one of the predominant phenomena determining the future of the planet. Considering the fact that the majority of the global population living in urban areas, and with this number continuing to rise, urban development plays a significantly important role in achieving

4 UN (2015).

the SDGs. SDG 11 – Sustainable Cities and Communities, being the most obvious, has defined 10 targets, which are highly connected to other SDGs. Thus, by addressing SDG 11 several contributions to achieve the other SDGs are made. Figure A9 highlights the connection between the targets of SDG 11 and the other SDGs and highlights the importance of sustainable urban development on a global scale.

JPI Urban Europe considers urban transitions as fundamental and multi-dimensional alterations to urban development, which aim to reach the ambitious targets focused on ensuring the livelihoods of citizens by avoiding greater stress on environment and fairer distribution of economic and natural resources. These phenomena are also broadly discussed and conceptualized by using the concept of Urban Transformations.⁵

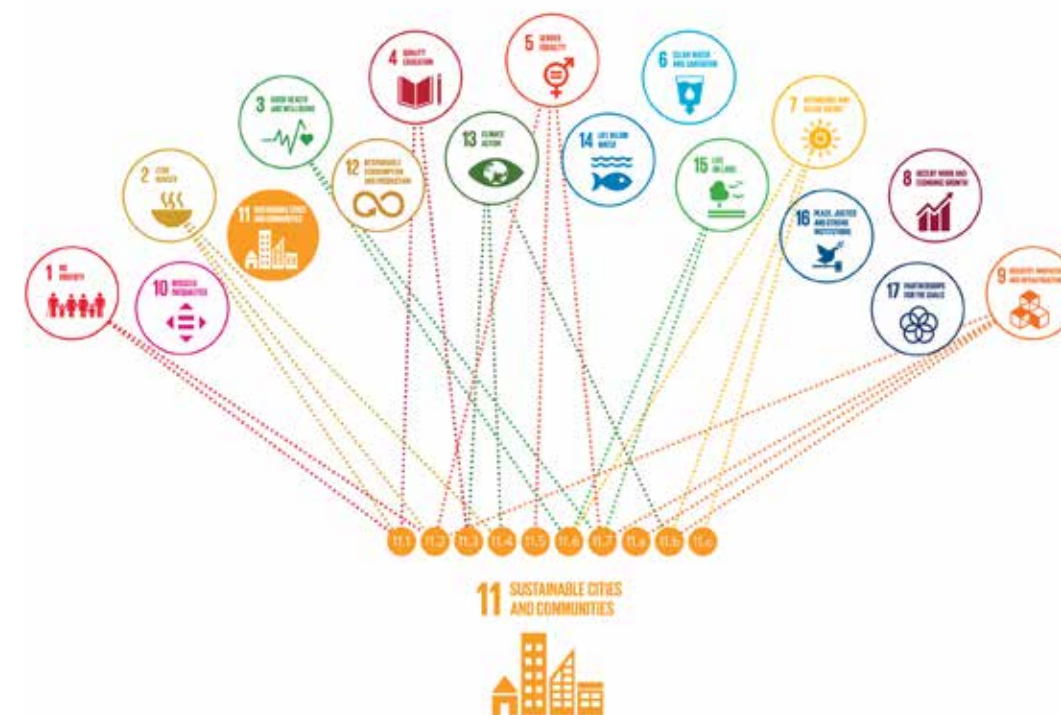


Figure A9: SDG 11 as the entry point to the SDGs overall

5 Kabisch et al. (2018)

UN-Habitat's New Urban Agenda: Rethinking global urban policy

The aim of the New Urban Agenda is to guide the efforts of actors and stakeholders on urban development representing nation states, city administrations, civil society, the research and innovation sector, funding organisations, etc. for the years 2016–2036. Although non-binding, the agenda provides important guidelines for policy makers, researchers, innovators, politicians, etc. on global urban development. It highlights a vision which strongly connects urbanisation with sustainable development and thus, asks for urban transition.

The principles set out to achieve the vision of the New Urban Agenda resonate with JPI Urban Europe's approach and thematic orientation. The transformative power of urban areas have been recognised as driving force for integrated global sustainable development. This is done by leveraging agglomeration benefits, high productivity, competitiveness, and innovation; environmental sustainability is also achieved through the promotion of clean energy and the sustainable use of land and resources.

Research and innovation play a significant role in the implementation of the New Urban Agenda, and JPI Urban Europe can contribute using evidence-based knowledge and experiences stemming from co-creative, transdisciplinary research projects. JPI Urban Europe provides the science-policy interfaces in its research projects and other activities which help meet the vision laid out in the New Urban Agenda.

The Pact of Amsterdam: An Urban Agenda for the EU

The Urban Agenda for the EU (UAEU) is the European Commission's approach to better connect urban dimensions with EU and national policies. JPI Urban Europe is mentioned in the Pact of Amsterdam, the resolution signed by the member states ministers responsible for urban development, as a provider of scientific knowledge and expertise which 'will be used to promote and exchange evidence based proposals for urban policy and urban projects'.⁶ In the scope of urban development, UAEU focusses on the three pillars of EU policy making and implementation: better regulation, better funding and better knowledge.

So far, twelve thematic partnerships have been launched which bring together various governmental levels and stakeholders. These partnerships are coordinated by cities, which voluntarily work together on the priorities laid out in the Pact of Amsterdam: jobs and skills in the local economy, urban poverty, housing, inclusion of migrants and refugees, sustainable use of land and Nature-Based Solutions (NBS), circular economy,

6 EC (2016), p. V.

climate adaptation, energy transition, urban mobility, air quality, digital transition, innovative and responsible public procurement. Two new partnerships are under development.

Four main European transitions – the BOHEMIA project

Starting from the SDGs, the BOHEMIA project investigated future requirements for European research and innovation policy to support transformative change.⁷ They identified four main transitions Europe needs to manage in order to achieve the SDGs:

- ▶ • Social needs: Providing for the needs of people;
- The biosphere: Safeguarding a hospitable planet;
- Innovation: Harnessing the forces of change;
- Governance: Joining forces for a better world.

While the urban challenges are seen as part of the Innovation transition, an urban dimension is enclosed in all the four transitions, in particular with regard to

- ▶ • An improvement in the quality of people's lives, *ensured through access to public services and reduced inequalities of various kinds*. Whether it be access to food, housing, health systems, water supply, safety/security, social security, infrastructure, all these issues are a concern in cities as well as on a regional or a national scale.
- The environmental sustainability of our economic model, dealing with the nexus of energy, climate and environment. Ecosystems resources and services, circular and low-carbon economies, climate change mitigation measures or land management are all issues urban development and planning has to face.
- Cities and urban areas as spaces where change happens in how societies relate to innovation; where social and economic dynamics can unfold as cooperation and co-creation can easily occur; referring to '*truly smart cities*' that '*can become laboratories for the study of new models of urban development*'.
- Shifting towards governance systems where decisions are built upon cooperation and collective global values, where strategies and actions of major actors are coherent and aligned, applying long-term, *reflexive, participatory and anticipatory governance models*, that also apply for urban governance.

7 Weber et al. (2018).

ANNEX 5: TOPIC EXAMPLES AND EXPECTED POLICY IMPACT OF DILEMMAS

This Annex provides additional information on the dilemmas regarding topic examples, connections to SRIA 2.0 and the expected impact for the Urban Agenda for the EU and SDGs.



DIGITAL TRANSITIONS AND URBAN GOVERNANCE

Topic examples

The sociotechnical scope of digitalisation

How can urban governance enable synergies from smart city, big data, and new conceptualisations of urban planning that include diversity and inclusion, highlighting gender issues, and urban agriculture as key drivers for sustainable urbanisation and transformations?

The topic would include remedies to the current lack of overview of what new ICT technologies might mean for European city authorities, urban areas and their citizens (robotisation, further digitisation, autonomous vehicles etc.). Adopting new kinds of governance for sustainability based on synergies may lead to successful collaboration on urban sustainability.

What are future development in digitalisation and urban diversity in terms of who is driving digitalisation for whom and in what way? Who actually benefits?

Urban public innovation governance

How can city authorities and urban public innovation governance make use of collective learning and capacity building to tackle their (SDG) challenges and work towards increased quality of life across all types of urban areas? How to boost the just city and the right to the city in digital transitions?

Urban public service innovation for integrated urban development aim to tackle the dilemma when involving new technologies, data access and behavioural patterns to changing services and infrastructures in order to reinforce the means of urban planning.

Urban digitalisation and challenge-driven co-creation

How can digital transitions enhance transparency, legitimacy, and accountability, as well as increase citizen participation in urban governance and challenge-driven co-creation of urban planning among a broad set of stakeholders?

Urban collective intelligence for liveability

How to increase/foster urban development and its various actors to align around and co-create common good? How to operationalise new financing models to increase urban governance capacity to guide transitions in these uncertain and complex settings?

This topic also includes approaches to move from technocratic solutionism towards challenge-driven and transdisciplinary urban R&I.

SRIA 2015 legacy

Thematic priority carry-over:

- Vibrant urban economies: Uneven development among European (and global) cities and urban areas; impact on living conditions and employment opportunities; labour market turbulence consequences; new urban economies in collaboration across sharing cities.
- Urban welfare and finance: social entrepreneurship, local sharing economies and changing roles of public services in collaboration with community-based activities; participatory budgeting and policy-making; new business models for urban transitions and smart city development.
- Urban governance and participation: governing transitions depend on collaborative processes among a broad range of stakeholders; increased use of big data and digital support; governance in the face of genuine uncertainty and proliferation of wicked issues; participatory devices and infrastructures; ICT support in urban governance and planning; innovation-driven transitions to improved resource efficiency to go hand-in-hand with public participatory approaches.

Expected impact in policy context

By tackling this dilemma, Urban R&I will support city authorities' transition work by harnessing digitalisation towards sustainable urbanisation. Support urban and innovation policy by shaping better understandings of the pertinent challenges to urban digitalisation processes and local/urban innovation eco-system.

Contributions to the following SDGs and the UAEU priorities are expected:

UAEU RELATED

- 10.11** Digital transition.
- 10.12** Innovative and responsible public procurement
- 12.1** Effective urban governance, including citizens participation and new models of governance.
- 12.2** Governance across administrative boundaries and inter-municipal cooperation: urban-rural, urban-urban and cross-border cooperation; link with territorial development and the Territorial Agenda 2020 (well-balanced territorial development).
- 12.4** Integrated and participatory approach.
- 12.5** Innovative approaches, including Smart Cities.
- 12.6** Impact on societal change, including behavioural change, promoting, among other things, equal access to information, gender equality and women empowerment.
- 12.10** Provision of adequate public services of general interest (within the meaning of Article 14 TFEU in conjunction with Protocol Number 26).

SDG RELATED

- 11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums
- 11.3** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- 11.a** Support positive economic, social and environmental links between urban, periurban and rural areas by strengthening national and regional development planning



**FROM URBAN RESILIENCE
TO ROBUSTNESS**

Topic examples

- Robustness as integrative principle*
How can climate change adaptation and mitigation be integrated in the overall urban sustainability transformation while improving liveability? How to e.g. develop manageable and non-gentrifying financial models to retrofit housing for urban energy transitions? How to make use of the energy/environmental transition as a catalyst for urban sustainable transformation?
- How to equip cities and urban authorities with skills to explore the merits of several solutions tackling mitigation and adaptation of climate change and circularity? How to enable more pro-active approaches? How to develop the toolboxes and new arenas for urban development by co-design?
- Tackle the lack of progress in transition to clean, affordable and secure energy systems and circular economies, while keeping a healthy basis of local economies. As a result, the adverse effects of climate change and pollution are insufficiently combatted.
- This priority can support energy transition-sensitive urban design and green infrastructure, e.g. Nature-Based Solutions (NBS), including interaction between local environmental requirements, for instance on air pollution, and long-term strategies of the energy transition. Trials of innovative business models for funding energy transition and other urban sustainability aspects, e.g. as developed by Climate-KIC programme (towards a post-carbon society).
- Transitions and renovations related to other natural and socio-economic circumstances? How can specific socioeconomic and cultural factors of urban areas (e.g. industrial traditions, pioneering spirit, history of innovations ...) be integrated into new and more flexible urban development and regeneration strategies?
- Global urbanism and planetary boundaries around the corner and in new urban economies*
How to reconcile urbanisation pressure, inequality due to the perceived belonging to a certain social category such as gender, class and ethnicity, and poverty reduction with global ecologies and resilience for a safe operating space in terms of planetary boundaries? How do urban areas cope with increasingly unpredictable turbulent economic and environmental conditions? Is the ability to manage turbulence a competitive advantage? How to discern diverse types of values, when value creation is beyond money and more about leading a meaningful life?

Sustainable production-consumption relationality as well as circular economy and Smart Cities (including focus on medium-sized cities) can result in new business models, the exploitation of economic opportunities, and social innovation for urban transitions pathways. Urban frugal innovation might become a new global trend.

In and around issues of information and education is the issue of how to increase interoperability between data at city scales? Furthermore, what are the incentives for new businesses with social and environmental benefits in this respect?

More-than-human and diverse urban functional areas

How to engender synergistic relations between urban and rural areas in proximity or within functional regions including the wellbeing and liveability across many hybrid forms in-between?

How to provide public goods of sufficient quality, such as transport, medical services e.g. midwifery, education, in small and midsize cities and sparsely populated urban settings whilst keeping the local economies vital?

This also connects to the lack of protection of biodiversity, national and cultural heritage, and identity of areas, not only in Europe, but also in other parts of the world, as both directly and indirectly affected by European consumption and urbanisation.

The topic includes approaches to the development of new requirements to conventional administrative structures facing the transitions of the urban-rural interaction, with the aim of fostering sustainable development. For instance, in mapping/characterizing sustainable urban performance; and changing roles of public services related to health issues.

SRIA 2015 legacy

Thematic priorities carry-over:

- Vibrant urban economies: disruptive innovation and new urban economies; labour market and other turbulences affect quality of life and city attractiveness.
- Urban governance and participation: ‘real-time’ events and less predictable conditions.

Expected impact in the policy context

City authorities and local level governance work with climate actions as well as with overall urban robustness, including governance issues in terms of decision-making procedures, democratic deficits and representation for various publics and concerns (such as gender), will be supported by urban R&I.

UAEU RELATED

10.5 Circular economy.

10.6 Jobs and skills in the local economy.

10.7 Climate adaptation (including green infrastructure solutions).

10.8 Energy transition.

10.9 Sustainable use of land and Nature-Based solutions.

12.2 Governance across administrative boundaries and inter-municipal cooperation: urban-rural, urban-urban and cross-border cooperation; link with territorial development and the Territorial Agenda 2020 (well-balanced territorial development).

12.8 Urban regeneration, including social, economic, environmental, spatial and cultural aspects, also linked to the brownfield redevelopment with the objective of limiting greenfield consumption.

12.9 Adaptation to demographic change and in- and out migration.

12.10 Provision of adequate public services of general interest

SDG RELATED

11.b By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, and develop and implement, in line with the Sendai Framework for Disaster Risk Reduction 2015–2030, holistic disaster risk management at all levels

11.5 By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water related disasters, with a focus on protecting the poor and people in vulnerable situations

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management



SUSTAINABLE LAND USE AND URBAN INFRASTRUCTURES

Topic examples

Integrated urban infrastructures planning

How to integrate seemingly competing land-use approaches by silo and sectoral policy and action in urban areas?

A need to pick up the challenge of inertia in the built environment and lack of systems thinking, since these are counterproductive to sustainable urbanisation. Insight into changing population dynamics and its impacts and relevance to urban form, resulting in highly divergent urban transformations, and different consequences for infrastructure and use of local resources, social status, equality, and accessibility.

How, in times of increasing urban socio-economic polarisation, can better access to jobs, services, and affordable housing be fostered?

Urban equity in sustainable urbanisation

How can cities provide affordable housing and commuting integrated in and across city administrative territories while at the same time decrease private car use and decarbonise urban mobility? How to promote sustainable urbanisation in line with equity and equality among diverse groups and communities?

This topic tackles for instance congested, crowded and cluttered cities, in particular for mobility and accessibility, poor quality of local living environment and public space, and unaffordable housing. Also ‘scale Jumping’ to increase quality of life by connecting neighbourhoods. Urban planning issues such as tackling the norm of the privately owned car in urban settings.

Challenges in and around sustainable mobility are e.g. how to externalise internal costs, e.g. budgeting reserves (redundancies) for unplannable events, e.g. monetarize transport delays (e.g. TGV pricing model, road tolling); create redundancies through multi-modal offers; urban Infrastructures – ‘Grey-to-Green’ transition through NBS.

Intersecting infrastructures and NBS

How can urban areas develop green infrastructures and urban agriculture in an NBS mode during increased urbanisation and functional area densification?

Regarding land-use and urban infrastructures, there is a strong potential for the Global North to learn from Global South’s developing regions and their management of the temporary city and maintenance of urban infrastructure and facilities by frugal innovation.

Increasing polarization between urban and rural areas, where most attention goes to growing cities and demographic unbalance is not taken into consideration. Transition policies need to overcome invisible barriers and to find a best and common model for different cities.

SRIA 2015 legacy

Thematic priorities carry-over:

- ▶ • Urban environmental resilience: reduced emissions through long term planning for climate change adaptation, improve water and air qualities, and ecosystem services; near carbon neutral and increased circularity in urban metabolism throughout food, water, and energy networks and their intersections; NBS in the built environment and infrastructure development.
- Urban accessibility and connectivity: improved accessibility through better network connectivity; multi-modal or combined mobility (Mobility-as-a-Service (MaaS) supplant a dominant transport mode of privately owned single person car use in most cities and urban areas; increase accessibility, but not always equalling more personal mobility; increase connectivity, but not always increase velocity; cater to travellers’ needs.

Expected impact in the policy context**UAEU RELATED****10.2** Air quality**10.4** Housing**10.7** Climate adaptation (including green infrastructure solutions)**10.8** Energy transition**10.9** Sustainable use of land and Nature-Based solutions.**10.10** Urban mobility**12.2** Governance across administrative boundaries and inter-municipal cooperation: urban-rural, urban-urban and cross-border cooperation; link with territorial development and the Territorial Agenda 2020 (well-balanced territorial development).**12.3** Sound and strategic urban planning (link with regional planning, including 'research and innovation smart specialisation strategies' (RIS3), and balanced territorial development), with a place-based and people based approach.**12.8** Urban regeneration, including social, economic, environmental, spatial and cultural aspects, also linked to the brownfield redevelopment with the objective of limiting greenfield consumption.**12.9** Adaptation to demographic change and in- and out migration.**SDG RELATED****11.7** By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities**11.2** By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons**11.1** By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums**INCLUSIVE
PUBLIC SPACES****Topic examples***Place-making in times of strong urbanisation*

How to foster and develop urban place-making including cultural heritage and tackle gentrification and segregation in times of strong urbanisation including tourism pressure on urban centres and everyday life?

Urban communities and public space to enhance liveability

How can urban communities and public spaces (physical, digital, open hybrid spaces) facilitate liveability and provide possibilities beyond citizenship to participate in urban governance and tackle democratic deficits? How to secure liveability in urban shared spaces also considering demographic issues, e.g. elderly people in poverty?

Open urbanity

How to design and maintain open public spaces accessible to all people?

How to foster access to infrastructures, tools and information to tackle the current risk of exclusiveness and to increase inclusiveness both in terms of urban governance and for various demographic groups?

Liveability in sustainable urbanisation

How to develop and provide liveability during increased urbanisation and density in urban areas? How to safeguard liveability in urban and peri-urban areas loosing populations in current migration?

How to approach urban (de)densification taking into consideration the subjective and objective perceptions of citizens regarding liveability? How to improve liveability in less dense urban environments, especially small and medium-sized cities or peripheral urban areas outside of traditional urban agglomerations.

Furthermore, as liveability and quality of life may have different meanings to different groups (for instance along gender lines) and communities, this diversity requires inquiries on their own terms to support integrated sustainable urbanisation.

SRIA 2015 legacy

Thematic priorities carry-over:

- Urban welfare and finance: innovation in design and delivery of public services such as green and more vibrant public spaces to improve urban liveability; placemaking with attention to inclusive urban spaces and design in demographic change by increased diversity, migration and forced displacement, and ageing; urban planning, design, and governance to support creative and inclusive communities.
- Urban governance and participation: increase trust in urban societies at large by transparent and open governance approaches; support for political infrastructuring and cohesion by participatory devices.

Expected impact in policy context

UAEU RELATED

- 10.1** Inclusion of migrants and refugees.
- 10.3** Urban poverty.
- 10.11** Digital transition.
- 12.1** Effective urban governance, including citizens participation and new models of governance.
- 12.4** Integrated and participatory approach.
- 12.5** Innovative approaches, including Smart Cities.
- 12.6** Impact on societal change, including behavioural change, promoting, among other things, equal access to information, gender equality and women empowerment.
- 12.9** Adaptation to demographic change and in- and out migration.

SDG RELATED

- 11.3** By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries
- 11.4** Strengthen efforts to protect and safeguard the world’s cultural and natural heritage
- 11.7** By 2030, provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities

ANNEX 6:
URBAN LIVING LABS

Urban Living Labs (ULL) can change the way in which we think of urban planning and development. Urban living labs are testing grounds for innovation and transformation in a real-world environment. They can play an essential role in developing new urban solutions, and applying them on a broader basis. They are a place and mode for experiments involving multiple stakeholders and on different suitable scales.

In the first JPI Urban Europe *Strategic Research and Innovation Agenda*⁸ an urban living lab is defined as: ‘A forum for innovation, applied to the development of new products, systems, services, and processes in an urban area; employing working methods to integrate people into the entire development process as users and co-creators to explore, examine, experiment, test and evaluate new ideas, scenarios, processes, systems, concepts and creative solutions in complex and everyday contexts.’ However, other definitions and concepts, especially in the different member countries of the European Union exist, and they also might be suitable in international context.

Urban living labs have been implemented in cities all over Europe. When considering the JPI Urban Europe projects portfolio, about half apply an Urban Living Lab approach. Some projects have explored the concept and mapped existing urban living labs. They generated new insights on what urban living labs are and when and how they can be used. Such results and recommendations have been summarized in reports, handbooks, games and a prototype inspiration kit for urban lab practitioners to guide and support interested actors in their endeavours to establish and run a living lab.

EXAMPLES FOR JPI URBAN EUROPE FUNDED PROJECTS
WHICH DEVELOP GUIDELINES, HANDBOOKS AND TOOLKITS
FOR APPLYING ULLS:

**GUST – Governance of urban sustainability transitions:
advancing the role of living labs**

Urban Living Labs in: Graz, Malmö, Newcastle, Rotterdam

GUST brings together leading European research partners and practitioners to investigate urban living labs and enhance their potential for contributing to sustainability transitions.

8 JPI Urban Europe (2015).

The project has studied a number of urban living labs in Europe in order to understand how they work across different national contexts and how we can scale-up their impact or share lessons across European cities. Outcomes include a handbook with practical knowledge and expertise for all parties that can be involved in ULLs including an introduction into the basic concepts and principles of urban living labs and checklists for the design, operation and evaluation of urban living labs.

WWW.URBANLIVINGLABS.NET

**URB@Exp – Towards new forms of urban governance and city development:
learning from urban experiments with living labs & city labs**

Urban Living Labs in: Antwerp, Graz, Leoben, Maastricht, Malmö

URB@Exp develops guidelines concerning types of problems for which urban labs are most suited, can best be organized, and how they can be integrated into urban governance systems.

Results show that urban labs shape critical space for experimenting with new forms of collaborative governance. Their hybrid position at the boundaries of local administration, research and society proves beneficial for activating and facilitating urban stakeholders. The insights have been translated into a prototype inspiration kit for urban lab practitioners.

WWW.URBANEXP.EU

**SmarterLabs – improving anticipation and social inclusion in living labs
for smart city governance**

Urban Living Labs in: Bellinzona, Brussels, Graz, Maastricht

The ‘Smart City Living Lab’ is an emerging approach in European cities. It brings together citizens, policymakers, businesses, and researchers to test smart, ICT-based solutions to urban problems in real-life contexts. By conducting action research in Urban Living Lab experiments in four cities (Bellinzona, Brussels, Graz and Maastricht) the project analyses urban mobility projects retrospectively. One of the projects results will be generic implementation guidelines for Smart City Urban Living Labs for addressing barriers to scaling up results and approaches. The project aims to overcome the citizens’ resistance to large-scale socio-technical change which might exist due to their exclusion in the development phase.

WWW.SMARTERLABS.EU

ANNEX 7: INTERNATIONAL DIMENSION OF THE SRIA

The challenge of sustainable urban development is a global one, recognised also by the United Nations by including an urban goal in the UN SDGs and creating a global framework for monitoring progress. Urban development is place-based and always embedded in the local context and specific urban situations. However, the multi-dimensional complexities of urban development are beyond any single geographic scope and thus international⁹ exchange and cooperation can offer benefits in terms of good practice, capacity building and overcoming lock-in thinking at local level.

In support of the European ambition to be a role model and play a leading role in sustainable development JPI Urban Europe can strengthen this case, gain international visibility for European activities and achievements, offer access to results internationally and team-up with and strengthen related efforts globally. In light of the SDGs, combining local research and practice with global learning and exchange is needed to benefit from different perspectives and diverse experiences. As an intergovernmental research and innovation network JPI Urban Europe is well equipped to position itself as a strategic partner on an international scale.

Since the JPI Urban Europe R&I priorities match broadly with the internationally agreed challenges for sustainable urbanization – integrated urban management, public sector innovation, participatory approaches, new urban economies, inclusive urban societies, socio-technical solutions driving urban transitions, etc. – JPI Urban Europe projects results could influence also international developments and debates. Opening up to international collaboration on urban transitions could help to validate European approaches under different conditions, benefit from integrating new perspectives and create additional scientific and economic gains. Co-creating and demonstrating new approaches under different local conditions is already one of the key principles of JPI Urban Europe projects. Extending this to international scale can be beneficial for the exploitation and spreading of such concepts and solutions, contributing commonly to the achievement of international strategies.

In this sense, the JPI Urban Europe strategy towards 2026 clearly indicates the international dimension and relevance of the JPI Urban Europe programme. Connecting the initiative to the urban aspects of the SDGs, SDG 11 in particular, opens the floor towards international cooperation in terms of

⁹ International cooperation here refers to cooperation between actors in European countries and regions with actors outside the Europe.

- ▶ influencing regional, national, European and international policies for urban development
- establishing and managing an international forum for co-creating, communicating and validating approaches and solutions for urban transitions pathways
- demonstrating and showcasing achievements and solutions for urban challenges of national and transnational research activities worldwide

To achieve this, the internationalisation strategy has the following aims

- ▶ foster multilateral international cooperation that adds value to existing bilateral partnerships of individual countries with international partners
- establish a strategic framework for international cooperation that supports relationship building and cooperation with selected countries and regions with a longer-term perspective and serves the needs of the urban research and innovation community
- connect European urban researchers and stakeholders to international ones to mutually inspire innovation
- promote JPI Urban Europe research results globally and support co-creation and validation of new approaches and solutions against different local urban situations
- offer a platform for city-city exchange and partnerships to benefit from different solutions and experiences

In implementing this, JPI Urban Europe is not building from scratch. Since 2013 JPI Urban Europe is active in building up international relationships, on the one hand with selected regions and countries, on the other hand with global research and policy networks. First international calls have been implemented with the Belmont Forum in 2016 and with China in 2018. Both experiences have shown that it is necessary that a long-term international cooperation has to consider three pillars as summarised in Figure A10.



Figure A10: The JPI Urban Europe framework for international cooperation

Along those lines JPI Urban Europe will continue its international outreach with the following priorities:

- ▶ • **Cooperate with global and international research funding networks** to (1) align strategies and priorities, (2) assess interests of international agencies to join certain JPI Urban Europe calls and (3) establish a platform for exchange on international policies and research. Using such global networks allows us to reach out to a large number of potential international partners. At the same time the established instruments and frameworks of such global networks provides an efficient starting point for multilateral cooperation. Such networks comprise in particular the Belmont Forum, Inter-American Institute, START,...
- Position JPI Urban Europe as network **creating scientific evidence and good practice for urban policy on international level**. Science-policy cooperation is at the core of the JPI Urban Europe's programme, not only on local level to support cities' urban transition efforts, but also on the European and International level to provide references for the Urban Agenda. Based upon established contacts to e.g. Future Earth, UN-Habitat or ICLEI, additional efforts will be taken to communicate results and policy recommendations to a wider international audience.
- Gradually **open up cooperation with new countries outside of Europe**, with particular focus on establishing entry points on all continents. Caution is needed to not dilute available capacities as the potential for international cooperation is huge. At the same time, the dynamics of urban development in Asia, South America and Africa makes it more interesting and relevant to explore cooperation opportunities. Therefore a step-by-step approach will be applied, assessing opportunities in different regions, identifying potential partners and programmes matching the JPI Urban Europe one. The cooperation framework and partnerships established in China will be continued, including an evaluation of the pilot activities to improve cooperation formats and frameworks. According to the longer-term roadmap, follow-up activities will be discussed. In addition, first contacts with Brazil already show the potential for a longer-term engagement. According to a survey among JPI Urban Europe funding agencies the top ranked regions and countries for a further outreach are Latin America as a whole, India, Middle-East and South Africa. Based upon existing bilateral partnerships between JPI Urban Europe countries and the mentioned international ones, interests and opportunities will be explored. For each selected country the three-pillar model will be applied and related priorities and activities defined.

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