Preparation of the European Partnership

DRIVING URBAN TRANSITIONS

Report on the Online Consultation

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Driving Urban Transitions

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CONTENT


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INTRODUCTION

1.1 THE DRIVING URBAN TRANSITIONS PARTNERSHIP IN CONTEXT

As part of the preparation of the European Research and Innovation Framework Horizon Europe European Partnerships are developed between the European Commission and Member States. One of the partnership candidates was proposed by JPI Urban Europe on Driving Urban Transitions Towards a Sustainable Future (DUT).

Our future relies on tackling complex societal challenges here and now, many of which must be addressed within cities and by urban communities. The DUT partnership addresses this complex set of urban challenges with an integrated approach to offer decision makers in municipalities, commercial actors and society at large the means to act and enable the necessary urban transformations. The partnership will create a portfolio of measures and critical mass beyond joint calls to enhance its impact, build capacities in all stakeholder groups and contribute to European policies, in particular the Green Deal, the Leipzig Charter, the European Urban Initiative and the European mission on climate-neutral and smart cities.

1.2 AIMS OF THE SURVEY

The DUT proposal was developed by JPI Urban Europe, building upon its Strategic Research and Innovation Agenda 2.0 as well as the experiences of the partners in implementing the JPI Urban Europe programme. However, as the DUT partnership aims to build capacities among all stakeholder groups and address critical urban issues, the stakeholders' view on priorities, needs and potentials is essential for the design of the partnership as well as its implementation. Thus, the DUT proposal was put forward to a public consultation with the aim to:

- Raise awareness of the DUT partnership and its general intentions
- Receive feedback on the strategic and thematic orientation of the DUT programme
- Identify gaps and potentials for the further development of the DUT programme, its pillars and implementation measures
- Start aligning with other networks, initiatives and neighbouring partnerships

1.3 STRUCTURE OF THE SURVEY

The survey was structured along the draft concept of the Driving Urban Transitions partnership to allow feedback along all aspects of the partnership concept. Primarily, the survey was assembled by the following parts:

- Personal Information
- Reflections on Driving Urban Transitions' Vision
- Ranking and reflecting upon the objectives of DUT according to their perceived importance and stating missing ones
- Reflections on the proposed four priority areas (dilemmas of JPI Urban Europe's SRIA 2.0) through the three pillars:
  - Positive energy districts
  - Urban mobility transitions through accessibility and connectivity
  - Urban circular economies through sustainable urbanisation
- Open box for additional thoughts
- Personal information


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STATISTICS

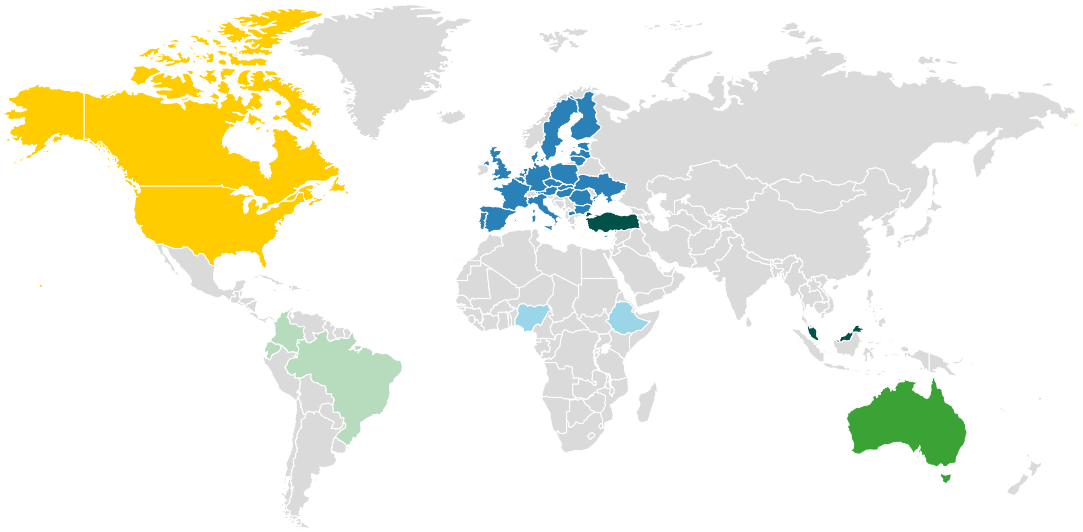
In total 311 people followed the invitation and participated in the public consultation. Despite the fact that not all of them shared details about their professional backgrounds and countries of origin, some key metrics are analysed in the following.

2.1 GEOGRAPHICAL DIVISION

Overall representatives from 40 different countries contributed to the survey. Almost 90 % of the participants were based in Europe (Figure 1). However, 31 participants with a non-European background took the chance to share their perspectives on challenges regarding sustainable urban development. The distribution of respondents across countries is summarized in Figure 2.

2.2 PROFESSIONAL BACKGROUNDS

In Europe as well as in the other regions, the vast majority of respondents provided their input from a research/university point of view (44 %, Figure 4). However all relevant stakeholder groups are represented in the consultation, local urban administration and business with rather equal shares of 11%, followed by national public authorities (9%) and civic society organisations (7%). The detailed national distribution of respondents across stakeholder types is given in Figure 5.



Backgrounds of the respondents

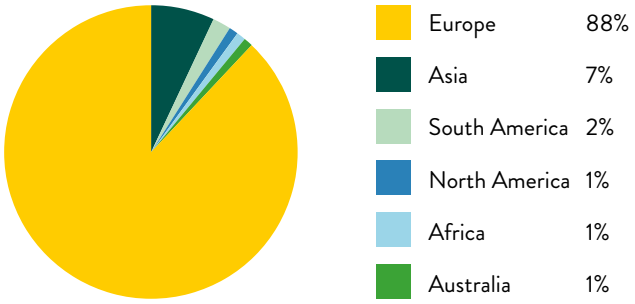


Figure 1: Indicated origin of stakeholders responding to the survey (n=285)

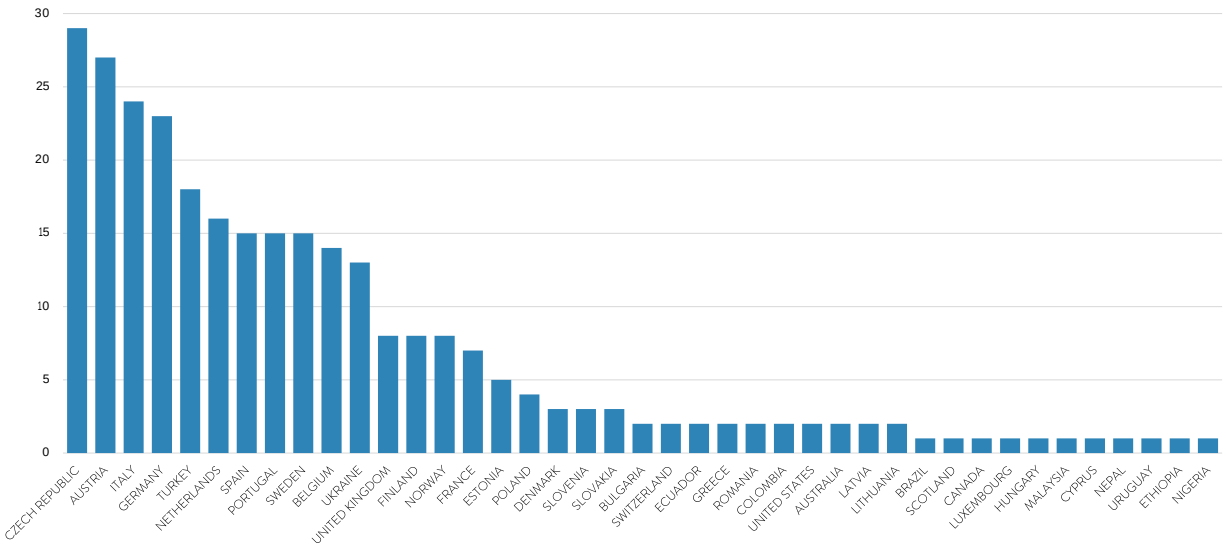


Figure 2: Number of respondents per country. As shown in Figure 3, stakeholders from in total 133 cities from 29 European countries provided input and actively engaged in setting the goals and objectives of the future programme.

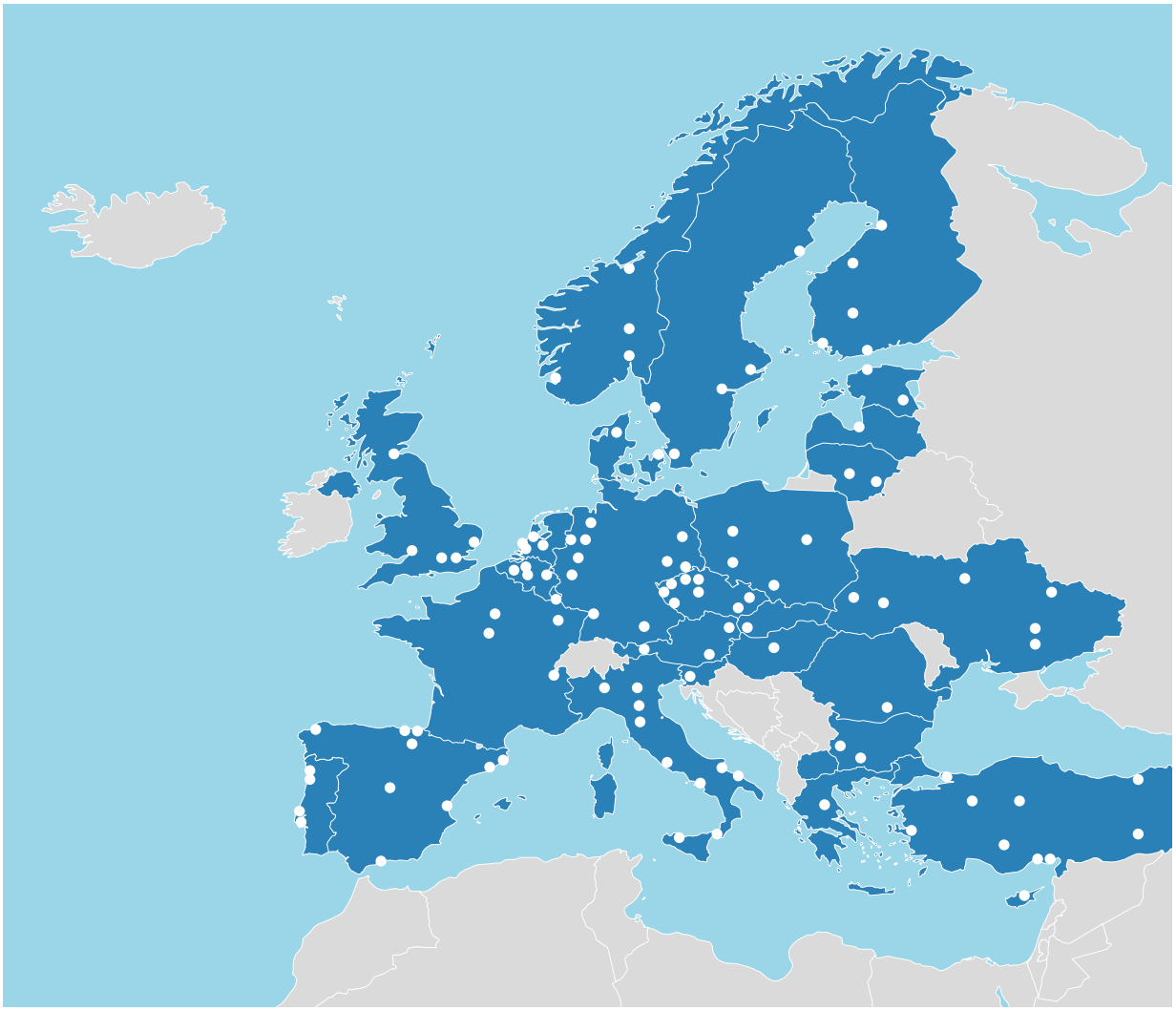


Figure 3: Stakeholders from 133 cities from 29 European Countries answered to the consultation (n=285)

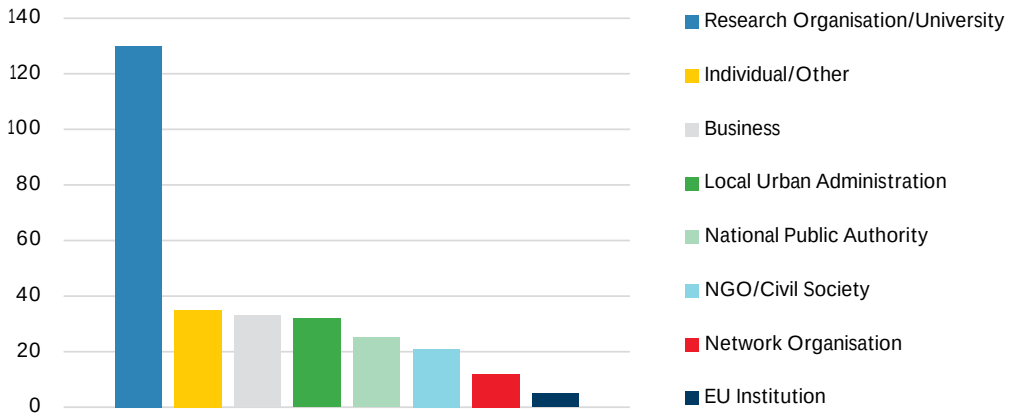


Figure 4: Overall representation of stakeholder types in the consultation (n=289)

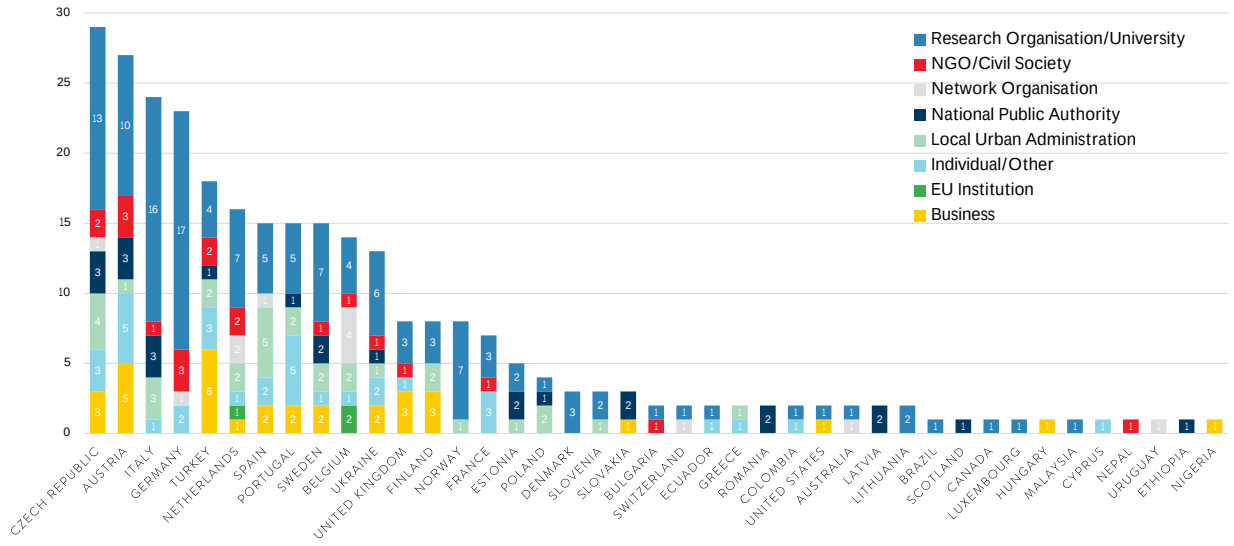


Figure 5: Representation of stakeholder types per country

REFLECTIONS ON THE DUT VISION

The Driving urban transitions to a sustainable future (DUT) vision:

> *The DUT partnership steps up the game to tackle urban challenges. We enable local authorities and municipalities, business and citizens to make global strategies into local action. We develop the skills and tools to make urban change happen and boost the urgently needed urban transformations.*

The stakeholders where asked in how far (in percent), the suggested vision reflects their professional / personal ambition. The average value among 203 responses is 76. 90% of the respondents answered that the vision reflects their ambition by more than 50%, for 68% of the stakeholders the vision matches by more than 70% (Figure 6).

Besides reflecting upon the vision quantitatively, the respondents had the chance to submit key words to highlight those aspects which appear of particular relevance for the vision of DUT. Figure 7 highlights the top 100 words provided in the responses.

SHORT SUMMARY

Besides thematically specific issues such as logistics, multimodality, internet of things, a reoccurring issues which the participants found missing was inequality and socially just cities. The submissions span across thematic orientations. It has been stated that inequality spans across topic and is an issue on a local but also European scale. Connected to inequality are the mentioned aspects of social inclusion, social innovation, fairness, citizen science and accessibility of urban development processes.

Responses stressed that the vision should be more ambitious, e.g. urban transitions towards an ecological civilization that includes natural and built environments, health, education, equity, ethics, safety, justice, beauty, technologies etc. In addition statements reflected strongly on the practical aspects of urban transitions, including skills, tools, local actions, education and capacity building.

Participants commented on the notion of "enable" and stressed that "empowering" might be a better choice to emphasise the transformative ambition of the programme. Connected to this point, responses underlined the importance to ensure that all kinds of actors and urban areas of various scales are addressed with DUT.

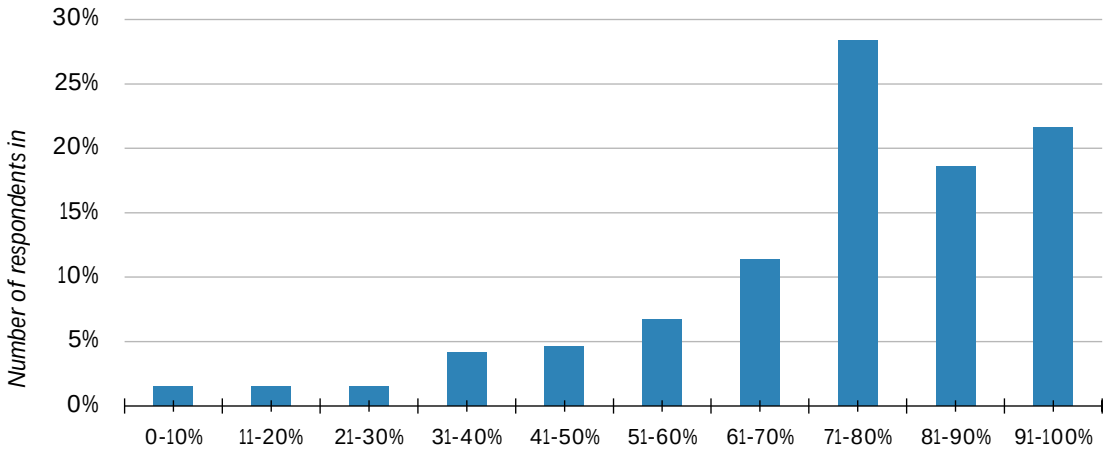


Figure 6: Stakeholder view on how far the vision reflects their ambitions and priorities

Figure 7: collected key words, describing aspects of particular importance for the DUT partnership

In addition, some statements have been selected describing such perspectives in more detail:

- *"The proposal successfully covers most of the priorities established by the president Von der Leyen (Green Deal, Digitalization, new tools for governance and citizen participation...). Despite this, some aspects can still be improved, particularly in the social domain. (....) The Agenda 2030 motto "leaving no one behind" will only become a reality if we pay attention to the social dimension of the urban life, from the aforementioned inequality and social resilience challenges to other social justice issues."*
- *"Concretely, what we feel to be missing is a clear reference to the science-policy-society cooperation – and the ample evidence it has already generated, but which needs to be valorised much more thoroughly to inform and inspire local-level action."*
- *"Cross-sectoral and inter-silo connections and knowledge for integrated urban development."*
- *"Integrated approach; the transmission of the global challenges into local action on the level of the neighbourhood; public spaces; spatial transformation."*
- *"Reviewing and updating urban challenges and priorities in light of this unprecedented global health crisis."*
- *"In my opinion, the proposed vision is not explicit enough on the need for socially fair and ecologically sustainable cities."*
- *"'Empower' rather than 'enable'"*
- *"I would also put the emphasis on the importance of having cities of all sizes on board (incl. Small and Medium-Sized cities, which often are confronted with issues that bigger cities do not face, and reverse)."*

REFLECTIONS ON CHALLENGES AND OBJECTIVES

For the DUT partnership an intervention logic has been developed that defines challenges, objectives on strategic and operational level as well as expected impacts. The operational objectives have been put forward for reflections of stakeholders. According to the received feedback, the intervention logic has been further developed and focused.

4.1 CAPACITY AND COMMUNITY BUILDING FOR URBAN TRANSFORMATIONS

The following key issues were identified by stakeholders for achieving the objectives:

Education as a key element for transformation
Education is seen as a key element to build capacities in all stakeholder groups and achieve transformations. While academic careers are traditionally supported through research and innovation programmes, education and training of all other target groups are usually less well covered. Stakeholders recommend to include education of public officers, regional authorities, politicians and other target groups as well as education of society to empower people to engage. Such measures could comprise trainings as part of projects' dissemination efforts, peer-to-peer learning, site visits, or sharing of good practice across communities. In addition, emphasis should be given to cover urban transformation issues in cross-curriculum programmes at universities to promote interdisciplinary approaches and advance academic education. A prerequisite for education and training is the accessibility of information and results. Appropriate dissemination measures to share good and bad practice and to support knowledge transfer are called for. Scale-up of existing knowledge of NGOs as well as enhancing SME capabilities should be addressed as well to cover the entire innovation ecosystem.

Capacity building must be inclusive
In order to leave no one behind in urban transformations, such developments must aim to include all groups of society, also those that are usually not considered in co-creation projects. Stakeholders highlight the importance of approaching and including vulnerable and marginalised groups, children and the eldery, bridge the gap between experts and non-experts and establish a dialogue platform for all stakeholders. Tools and formats should be investigated to achieve effective inclusion of resident communities and ensure public involvement in policy making.

On the other hand the diverse spectrum of stakeholders must be considered and managed in multi-stakeholder interaction and decision making processes. Real estate, landowners, construction companies, investors, infrastructure providers, architects, designers as well as local action groups must be involved to create a shared understanding of issues. Monetary and non-monetary incentives are required to support and activate stakeholders.

Create new power balances and overcome political lock-ins
The role of politicians, public authorities and those owning urban resources in driving or hindering transformations is strongly emphasised by the stakeholders. Thus, creating political awareness of concrete solutions, empowering local authorities and building capacities of decision makers and public officers is seen as key. At the same time, ways to increase public influence in decision making and a shift of power to local initiatives is called for. The right of ownership versus the right to the city must be addressed in order to deconstruct unsustainable systems and achieve change on all levels. Focus should be given to issues related to justice, legitimacy and empowerment in different socio-cultural and legal context. In this regard also legal, regulatory, institutional and administrative barriers need to be investigated and addressed with the aim to simplify regulations

Figure 8: Challenges and operational objectives according to the DUT intervention logic (first version from Feb 2020)

on the one hand and create new standards, guidelines, and recommendations on the other hand.

Shape environments to improve science-policy cooperation
The importance of science-policy/society cooperation is well acknowledged but cooperation of universities and municipalities is still not well established in general. An understanding of the institutional landscape is needed to improve science-policy cooperation and support uptake of R&I results. Regional partnerships between universities and city authorities are suggested to support local developments and ensure knowledge about regional contexts. Synergies between R&I projects and cities' policy priorities are call for to ensure relevance for urban actors and public authorities.

Strengthen capacity building for action
The importance of experimentation and public-private-people partnerships are highlighted by stakeholders. Not only the involvement of local action groups is needed but the aggregation and moderation of local knowledge towards international policies as a means to trigger collective action and learning to achieve the global goals. Urban Living Labs are welcomed as a format to support experimentation but other forms are called for as well to strengthen take-up of results and create examples of change. City authorities should be encouraged to activate labs, and practice and experimentation that creates opportunities for all should be promoted, especially in widening countries. Cooperation with other partnerships and networks should be strengthened and the potential to scale up and across existing initiatives should be exploited.

4.2 INTEGRATED APPROACHES TO TACKLE COMPLEX URBAN ISSUES

The following key issues were identified by stakeholders for achieving the objectives:

Create knowledge about complex transformation processes
Urban transformation requires systemic approaches in public administration and policy making. A better understanding is demanded on barriers for complex urban transformation processes and the systemic context of multi-actor collaboration. New urban imaginaries beyond solutionism and traditional growth models should be connected to social responsibility and inclusiveness and form the core of such transition processes. Reflexive research could provide insights into the impacts of new solutions, ideas, business models, etc. for society and environment. On the other hand, tools fit for integrated planning and decision making should be developed.

Open, democratic, responsible and participatory R&I to meet needs of municipalities and society
Stakeholders strongly advocate for challenge-driven, practice- and output-oriented research and innovation. Inter- and transdisciplinary R&I approaches are essential in this regard to achieve innovative, open and inclusive results. Diversity should be considered as a criterion for project evaluation and strong

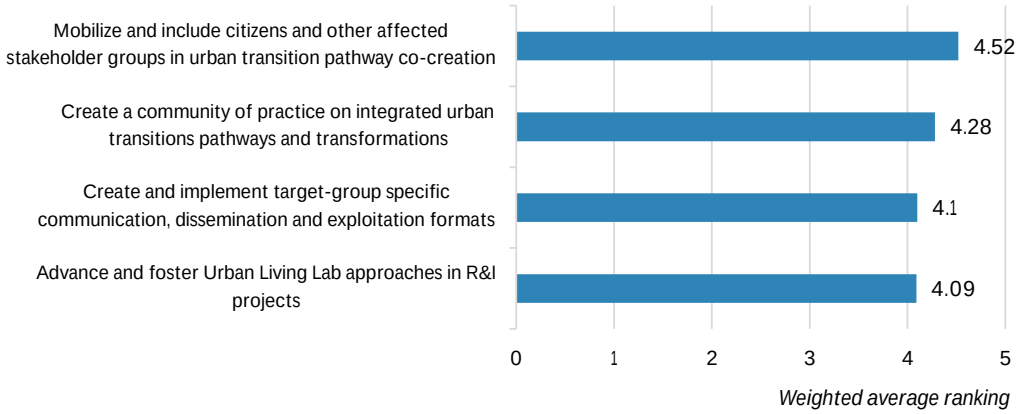


Figure 9: Ranking of objectives according to their importance for addressing Capacity and Community Building for Urban Transformations (weighted average, 5 – high importance, 0 – no importance)

emphasis should be given to open, democratic and participatory R&I. The Sustainable Development Goals are referred to as a framework to deal with such complexity and foster integrated approaches. At the same time the R&I programme should not be too scientifically ambitions and face real-life problems.

In addition the importance of power balances and multi-level governance is addressed by stakeholders to ensure that R&I results can be implemented. The involvement of political leaders and business is encouraged, also in terms of the development of new values and shifts of power - from politicians or corporations to stakeholders and citizens. R&I needs to consider and support multi-level governance and address the appropriate level of policy making. The link between national strategies and local actions must be considered and science-policy cooperation is seen as an important element to create trust between science and policy. Appropriate incentives might be needed for such science-policy cooperation.

Science-policy-civil society cooperation to tackle real-life challenges

As indicated already under the objective Capacity building, the creation and use of multi-stakeholder dialogues and platforms should form an essential prerequisite for integrated research and innovation approaches. Dialogues with civil society, policy, business and R&I is seen as essential to drive transitions. This requires the establishment of level playing fields for civil society and experts, including CSOs and other stakeholders. New formats of collaboration beyond dialogues are requested to strengthen quadruple helix approaches and avoid that dialogues turn into bureaucracy. Cooperation with other initiatives and networks, such as the City Science Initiative or KICs, offer potential to reach out to a diverse set of stakeholders from policy, business, innovation and education. The availability of funding for all these stakeholder groups, in particular city representatives and societal actors, is seen as an important condition for such multi-stakeholder engagement.

Foster challenge-driven approaches to strengthen institutional transformation and support public sector innovation

Innovation is needed to transform organisational structures to allow a better uptake of new ideas in municipalities and city administration. Challenge-oriented approach support cross-silo cooperation in city administration, also in terms of the involvement of policy makers responsible for crosscutting issues like gender, environment, etc. Stakeholder indicate

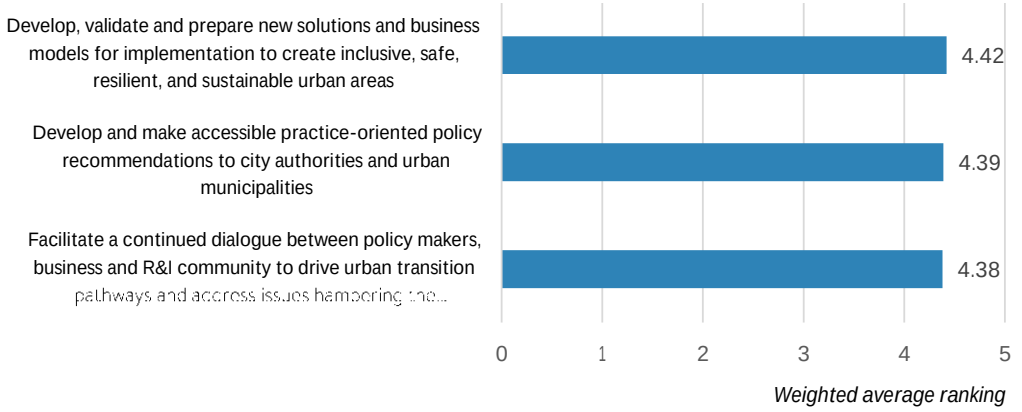


Figure 10: Ranking of objectives according to their importance to address Integrated Approaches to Tackle Complex Urban Issues (weighted average, 5 – high importance, 0 – no importance)

different research and innovation needs, e.g. support to get quadruple helix structures working in cities, develop roadmaps and pathways for uptake of new approaches and solutions, strengthen nexus thinking in planning and governance, investigate new regulations and financial frameworks. The development and testing of innovative policies should be encouraged and transparent process should be designed with cities that are understandable for all. Such research and innovation needs to build upon long-term visions of cities and consider public procurement and planning processes. Research and innovation projects should furthermore go hand in hand with education of municipal authorities and support peer-to-peer learning.

Place-based research and innovation to come from data to evidence and learning

Urban development is place-based and thus research and innovation should create concrete evidence on local cases and connect to implementation in the physical fabric. Validation of place-based results and cases as well as piloting is needed to create evidence of new approaches. R&I should involve in such piloting and demonstration projects and create policy recommendations and guidelines for replication of good practice.

Access to data on neighbourhood, district or city level and sense making of such complex sets of data define an essential condition for urban R&I. Data science and artificial intelli-

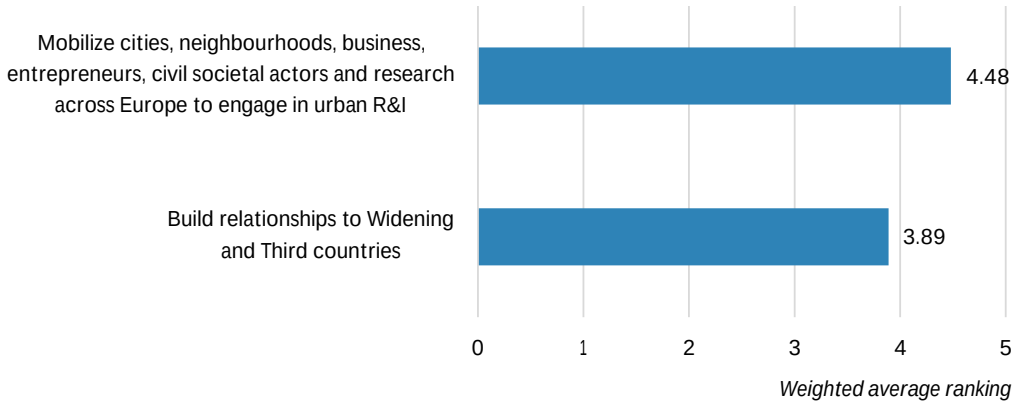


Figure 11: Ranking of objectives according to their importance to address Joining Forces to Tap the Full Potential of Urban R&I (weighted average, 5 – high importance, 0 – no importance)

gence offer new opportunities that should be exploited also towards policy making. Open software platforms could form an important element also towards bottom-up and user-driven approaches. Data-driven monitoring tools are needed to assess impacts and changes. For sustainable urban development new business models are needed that consider social and environmental dimensions. Urban Living Labs allow innovative spatial and new actor constellations and thus provide environments to experiment with business models.

4.3 JOINING FORCES TO TAP THE FULL POTENTIAL OF URBAN RESEARCH AND INNOVATION

The following key issues were identified by stakeholders for achieving the objectives:

From local, small scale action to regional and global impacts
Local contexts and national frameworks matter when dealing with urban transformations. Appropriate formats should be put in place to facilitate multi-stakeholder cooperation and concrete action on small scale (local level) as well as to connect stakeholders and moderate knowledge exchange on big scale, across Europe. Pilot projects across Europe would allow to share knowledge across countries and bring knowledge, insights and experiences from local to regional and global level.

Benefit from international cooperation
International cooperation allows to benefit from good examples made in Europe or elsewhere, synthesis existing knowledge and mainstreaming new approaches and solutinos. An international platform for sharing the best practices within and outside the EU is suggested to foster international cooperation and enhance impact. This could be used to exchange with other regions on their solutions, invite testimonials and present best-in-class solutions as part of the learning and education process.

Let research and innovation get inspired by the specifics of Widening countries to create wider impact
Stakeholders encourage to let Widening and third countries inspire research and innovation and help create new ideas. The partnership should consider local specificities of widening countries and at the same time keep bureaucracy of funding programmes low to allow smaller actors and less advanced partners to join and get access to funding.

Create communities of practice to bring results into implementation
Concepts are needed to come from experiment to full scale implementation of technologies, tools, approaches. Communities of practice could support this and foster focused exchange, mobilise and empower actors in the local context. A platform could be created to moderate interaction of actors and tackle conflicts caused by contradictory aims and interests.

Such communities of practice also allow to build relationships to existing organizations, such as Global Parliament of Mayors or the Covenant of Mayors. In any case, the partnership should bring together local governments, academia, industry and inhabitants to collaborate in identifying and answering urban challenges. Jointly tools and routines should be developed and implemented for exchange, scaling-up and implementation on new approaches and solutions.

DRIVING URBAN TRANSITION'S DILEMMA APPROACH

To achieve the objectives and impacts the programme builds upon the Strategic Research and Innovation Agenda 2.0 developed by JPI Urban Europe. This document indicates key areas for action. It introduces an approach to identify critical issues for urban transition pathways and to achieve sustainability targets, the dilemma approach. Concretely, an urban dilemma is defined as two or more competing goals, such as stakeholder interests and related strategies which potentially fail to achieve their aims as implementing one strategy hampers or prevents the achievement of another. Identifying and tackling such dilemmas is thus key for sustainable urban development. Four key themes/dilemmas have been identified as priorities related to urban transitions.

5.1 FOUR KEY DILEMMAS

Digital Transition and Urban Governance: Digitalisation offer potential for economic development and innovative urban planning such as i.e. innovative digital-based and people-centred governance approach to support urban regeneration. Digital transition shall be the nears to make change in the Public Administration (PA) on one side, and the Community on the other, and face, together, the complexity, promoting a new role for PA as process enabler. Digital transition needs to support, explore and resolve the theme of urban data in terms of big data. Digitalization is implemented in an accelerating pace across Europe and in many parts of the world's urban areas.

From resilience to urban robustness: Cities and urban areas need to drive sustainable urban development and realise green agendas, as well as tackle climate change and safeguard urban eco-economies. A widespread recognition of good practice, clean- tech development, rewards, awards, and business models that fully address social and environmental targets is central in this respect. As the world turbulence and global disruptive events probably will increase even if +1.5C climate change is achieved – both in numbers and instensities, urban systems require response paradigms built on 'safe to fail' adaptability principles as a baseline for urban resilience rather than efforts at conserving ill-suited linear systems.

Sustainable land use and urban infrastructure: Cities and urban areas in general attract people and create positive effects out of agglomeration, density, and diverse and intersecting infrastructures and facilities. At the same time there are also risks involved and currently increasingly wicked problems around e.g. congestion and accessibility, transformation of the built environment and the urban energy system, loss of identity or demand/waste of natural resources. Added to this, increased spatial and social inequalities between different types of urban areas may be caused by increasing economic polarisation, segregation and gentrification dynamics, suburban sprawl, and shrinking cities in functional regional contexts.

Inclusive public spaces: Public spaces should be ideally attractive to all, as these are spaces for wellbeing and health (stimulating people to move), increasingly green public and shared places for people, where different groups and communities meet, preconceived ideas of the Other are challenged, and where citizens control their streets and shared spaces. Urban development and planning can be used to increase urban quality of life by design, public space management, walkability and cycling. A high quality, accessible and reliable public transport system is key to reducing car traffic, congestion and related emissions. A dilemma regarding everyone's right to the city is that public spaces are constantly influenced by power balances and the needs of different groups and communities.

5.2 THREE PILLARS

These key dilemmas play out in different ways in the various sectors and areas of urban development. For that reason, the

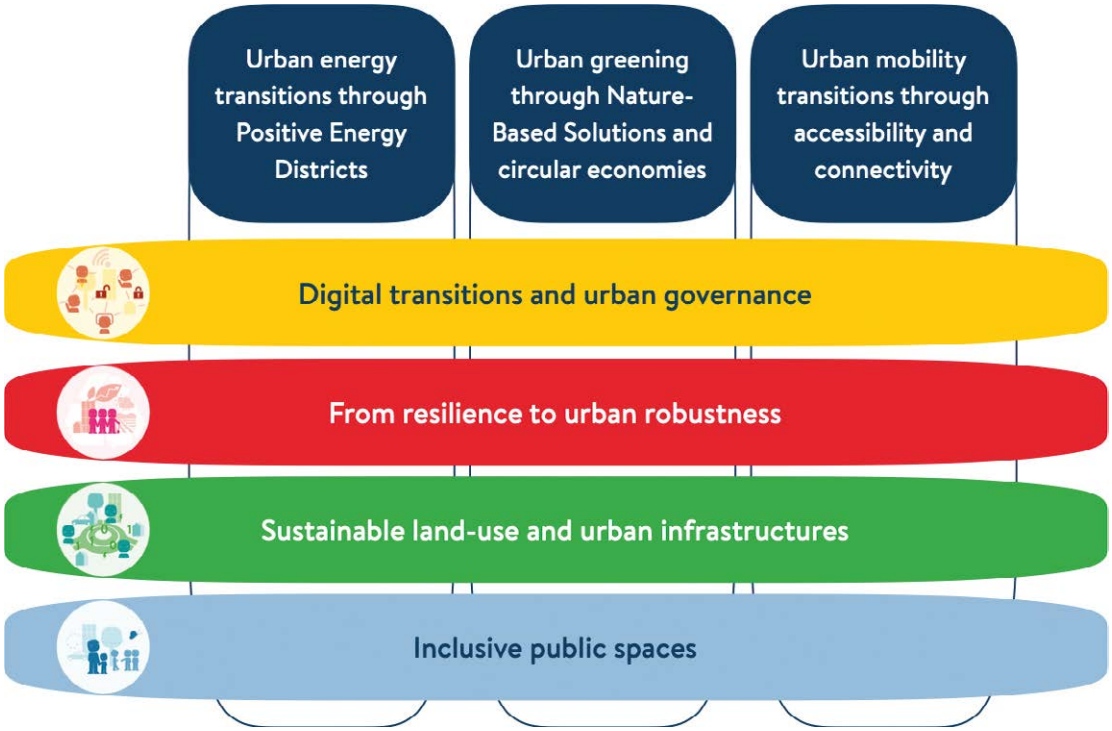


Figure 12: Sectoral priorities and identified key issues for urban transitions.

DUT partnership aims to identify the top issues related to these four themes in three sectors that are seen most critical for urban transitions:

Urban Energy Transitions Through Positive Energy Districts: Positive Energy Districts (PEDs) are key tools to urban energy transition. PEDs are a subsystem within cities that aim towards energy efficiency and generation of an energy surplus. As an integral part of comprehensive sustainable urbanisation strategies, PEDs shift the focus from the individual positive energy building towards neighbourhoods and thus a comprehensive level of impact on sustainable urban development and the energy transition process.

Urban Mobility Transitions Through Accessibility and Connectivity: Mobility and freight transport are essential for individual development opportunities, access to work, education, social contacts, health provisions, a variety of amenities and access to products. This way mobility is essential for the social and economic essential aspects of sustainability. But physical transport of people and cargo need infrastructures, vehicle movements and all kinds of supporting systems and services which need energy, space and cause noise, emissions and safety effects. This has impact – directly and indirectly [2] on liveability, health, spatial and air quality and other aspects of the living environment.

Urban Circular Economies Through Sustainable Urbanisation: Although European urban areas nourish a relatively high degree of biodiversity (sometimes higher than in surrounding, non-urban landscapes), from a regenerative point of view they are still fragile and not nearly as 'green ' as needed to support human and planetary well being including climate action. Contemporary cities and urban areas, in Europe and beyond, are vulnerable to disruptions of various kinds, be it through heat waves or other weather events, by food scarcities, financial turbulence, mobility disruptions, etc.. As cities and urban areas urgently need to increase the circularity of their economies at a faster pace, Incentives are needed. The focus and behaviour of producers, suppliers and consumers must change for our society to move towards more circular ways of making and consuming. When waste becomes a resource, this will change existing business models and value chains.

In the public consultation, the participants were asked to reflect at the connections and interlinkages between the four key dilemmas and the three pillars.

[2] *Cf. EC (2020) 'Natura 2000 in Cities', < https://ec.europa.eu/environment/nature/natura2000/management/pdf/Natura_2000_in_cities.pdf >, p. 7.*

REFLECTION ON PILLAR 1 – URBAN ENERGY TRANSITIONS THROUGH POSITIVE ENERGY DISTRICTS

As city authorities play a key role in achieving energy transition ambitions, there is a wide consensus on the need to integrate respective actions into urban policies. Stakeholders responding in the consultation process confirmed the significance of Pillar 1, as it strongly matches with their perspectives on urban transitions priorities (see Figure 12). Positive Energy Districts (PEDs) are being acknowledged as an appropriate strategic tool supporting urban energy transitions. Key messages by stakeholders have been summarized according to the four dilemmas proposed in the concept for the DUT Partnership.

6.1 DIGITAL TRANSITIONS AND URBAN GOVERNANCE

Digitalisation needs to bring forward "digital democracy".
Engaging consumers through digital services in the energy transition has to be a priority highlighted in the programme. It is of utmost importance that to recognise that successful digitalisation requires strong participation from the people for whom the digitalisation is taking place, and move from a technology push to a technology-embedding phase in which citizens directly participate in the design and implementation of digital solutions. The deployment of smart meters, collection of data, the development of connected devices mean that the digital and energy sectors will interact more than ever before and consumers have to be part of it. Innovative digital-based governance must be citizen-centred, explore improved community participation, inspire new patterns of people behaviour and support urban regeneration through (local) job creation and boosting of local businesses. Open data needs to be accessible not only as raw but also as re-worked and visualized data. The promise that Big Data has offered for many years has not materialized despite that much of the data has been provided to big tech more or less for free. Digitalisation also needs to support democratization of the energy production (e.g. solar panels).

Smart energy management requires a re-consideration of vertical and horizontal integration of governance levels.
Smart energy management is of major importance in distributed energy production. Energy management needs to move from centralized to decentralized energy models. Planning of districts as self-contained energy islands, but ensuring smart interconnections with others and a coordination of interlinkages of multiple PEDs within a city/urban environment for back-ups and evening-out the supply and demand curves. Key issues include the "links", relations and interdependences between smart grids, smart cities and smart buildings. In general, the legal frameworks need to be made more flexible and perhaps be standardized at EU level. The development of PEDs must be aligned with specific administrative and regulation procedures facilitating that, some at Local level but many at National level, such as the regulations relating energy distribution or the different roles that exist in the energy market (utilities, suppliers, aggregators, etc.).

Digitalisation is no end in itself, but a tool to bring forward sustainability.
Digitalisation should only be implemented in those areas and only as much as it is necessary to achieve the sustainability goals. Digital tools must enhance the environmental performance of a neighbourhood/city through effectively adopting digital technologies to address urban sustainability issues.

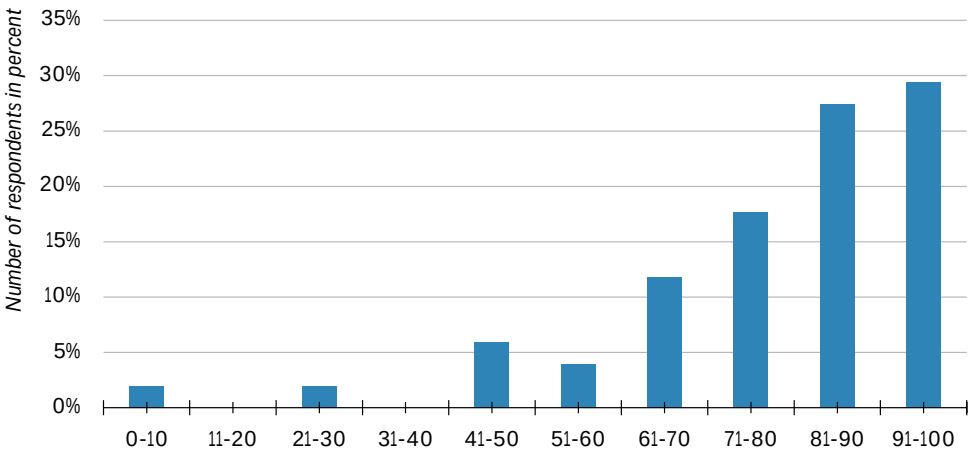


Figure 12: Stakeholders' assessment on how far the pillar on urban energy transitions matches with their perspectives

Developing digital twin cities might be useful for addressing sustainability issues in a comprehensive, data-based way.

With digitalisation, capacity-building, data monitoring and management are key.
Availability of data and data protection issues (especially when it comes to the consumption data of private households) are key. It would be good to have transparent real-time information on energy production, movement and consumption, so that society, companies, public entities, etc. can see and understand it. On the other hand, the data generated within PEDs needs to be protected. Ways of anonymizing and protecting the private realm of the energy users need to be considered. Therefore, capacity building of local administrations to work with urban data is a key issue. The underlying question always needs to be: "How does this serve society as a whole?"

6.2 FROM RESILIENCE TO URBAN ROBUSTNESS

Neighbourhood-focused policies enhance urban robustness, not only in terms of energy supply.
Studying and knowing in a detailed way the main social and economic features of each district, in order to know how civil society can be involved in each of them. PED cannot be a standardized tool, it must be tailored to the specificity of each district. Therefore, enough resources should be allocated by the Local Authority to transform it through PEDs: resources for capacity building for all stakeholders involved, for specific studies and for specific investments, also to integrate ICT, to manage the result and to coordinate all PEDs. Make sure that the technical aspects of the PEDs remain localized in the competence of local stakeholders. The infrastructure should be locally owned (citizen solar plants etc.), ownership (and data generation) by large corporations should be prevented. Also, reparability and existing capacity for service and repair should be considered locally (green jobs!).

Security of energy supply is a key issue for urban robustness.
Increasing resilience and is tightly linked to energy infrastructures that more and more rely on local and regional sources, and less on fossil fuel imports (gas, oil, electricity). Heat networks can play an important role to provide flexibility and storage in the energy system of the future where electricity systems struggle with fluctuating renewables and can overall increase urban resilience by promoting self-reliance. Increasing energy independence of neighbourhoods increases urban robustness. Urban robustness is closely connected to mitigating climate change effects, especially when unexpected challenges (such as severe climate phenomena) arise. With particular reference to climate change, resilience scenarios must be considered and an emergency plan for a set of risks for cities should be designed and regularly updated, risks as blackouts from storms or heat waves and related health emergencies. In this regard, energy storage will play an important part as well as the types of back-up systems that are available. Solid-state batteries, when commercially available, should hopefully contribute significantly towards offering improved energy storage solutions. Transforming the energy system to 100% renewable sources is a huge challenge, as a 100% renewable energy system will come with higher levels of complexity and hence many new risks and side effects.
Urban robustness comes with social and economic resilience.

Without an active role of society, urban robustness cannot be achieved. Public participation is an imperative for supporting urban robustness. Understanding that energy and climate change action requires an integrated approach which facilitates more liveable cities for people. To achieve robustness, links between energy-producing and energy-consuming activities must be made (circular economy of energy). There is a tendency to follow business-as-usual models. The scaling up of innovative cooperation models is often challenging, also due to cost/price reasons. The role that energy and energy conservation has on the overall resilience of urban areas and communities needs to

be explained in a simple manner to all stakeholders involved and always be included in the conversation.

6.3 SUSTAINABLE LAND USE AND URBAN INFRASTRUCTURES

For sustainable land use, energy issues need to be a crosscutting topic for land use policies and be strongly connected to climate action.

It is a key issue is to make the corresponding normative changes in order to enable multiple land uses. That way, energy production can be incorporated in there and make it compatible with other land uses. Secondly, it is important to conceive green infrastructures as a tool to mitigate climate change and consequently, energy demand. It is key to enhance these urban spaces in order to improve the liveability of the community while facing climate change at the same time.

For driving the energy transition, new uses and infrastructures are needed.

Energy transition might involve the inclusion of renewable energy production installations. Those installations should be done taking into account a sustainable use of land and of Urban Infrastructures. For this topic, city and district planning has to be considered, especially with regards to heat demand and source mapping. Renewable heat sources often require a lot of space (e.g. solar thermal plants) but there are shared land-use examples where urban gardens integrate solar thermal installations. The land use is competitive in urban areas, there is not enough room for energy sources (solar panels, windmills and so on). The relation between PED and urban infrastructures should be based on smart buildings, smart roads and smart land use.

6.4 INCLUSIVE PUBLIC SPACES

Public spaces need to be designed to influence people's behaviour.

Physical design of public spaces is a means for influencing people's behaviour in terms, especially in terms of energy efficiency. We have to include the design of public space (including the adjacent buildings and their programming) in order to move beyond the mere temporal place making - create truly inspiring and active public spaces. Transparency and informed citizens in relation to energy use can help reduce energy use. Mobility plays an important part through designing public spaces moving away from motorized traffic towards shared mobility and services. Shaping urban structures that promote reduced need for mobility also support energy efficiency goals.

Including energy issues in design of public spaces must ensure diversity and plurality of users while preventing gentrification.

The existence of PEDs should be guaranteed in the whole municipality once the transformation has begun. Otherwise potential gentrification processes might arise. Therefore, PEDs must ensure the prevention of gentrification, must guarantee that no one is left behind by implementing capacity building, information and specific support to citizens, especially those more vulnerable. PEDs also should prioritize acting with low income dwellings and should address energy poverty. Green infrastructure for public spaces is a measure that combines the energy benefits with social benefits. Yet, if public spaces are only designed to be 'inclusive' they will not necessarily achieve other benefits. A detailed knowledge on the urban society, state of the art and future trends must serve as basis for design of public spaces.

REFLECTIONS ON PILLAR 2: URBAN MOBILITY TRANSITIONS THROUGH ACCESSIBILITY AND CONNECTIVITY

Mobility seems to be reduced to transportation in the DUT proposal. Mobility efficiency should be addressed more: the more it is possible to reduce the need for movement, the more pollution and adverse effects of urban life can be reduced. Mobility should be reframed as part of a new urban architecture and this is the chance to have this integrated planning approach envisioned many times in urbanism. To really create a mobility system that supports liveability, health, spatial and air quality, then there is a need to base all interventions on a sound basis of human centred and scaled urban active mobility, and then see how automated, digitized and electrified mobility innovations can be supportive. Hence, the DUT proposal should talk more about pedestrian and bike traffic or street design before talking about 'automation, digitization and electrification'. Although automation, digitization and electrification and social transformation will revolutionise the transport sector. Mobility management in workplaces will take more relevance, so that accessibility issues will need to convey more on the way people commute.

7.1 DIGITAL TRANSITIONS AND URBAN GOVERNANCE

Digitalization is not an end in itself – good governance is key

The challenges around mobility should be framed on how to shape cities for people, not cities for modes of transportation. There is currently often a mismatch in that urban governance focus on infrastructure while inhabitants in these areas focus on experience. In this human centred approach, digitalisation can be a barrier as well as a chance for inclusive mobility for all. There is a need to address the digital gap.

Low accessibility in peri-urban areas should be addressed in order to ensure equal mobility opportunities to people of all levels, age groups and gender. Furthermore, there are missing

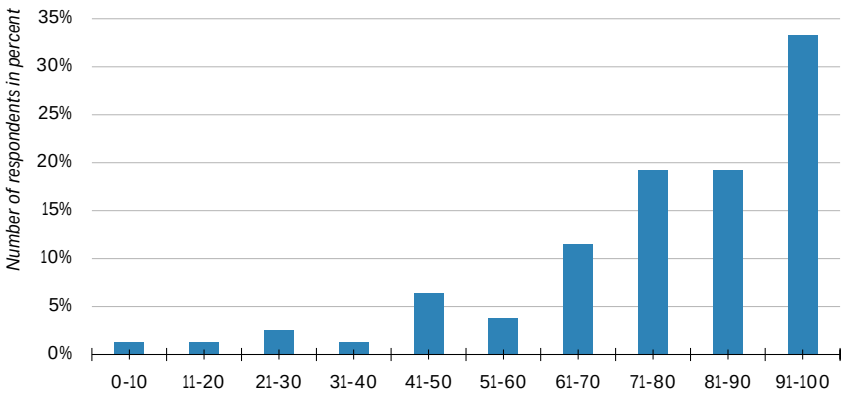


Figure 13: Stakeholders' assessment on how far the pillar on urban mobility transitions matches with their persepctives

concerns and issues regarding metropolitan regions and functional areas – the links to suburban areas and other cities needs to be addressed, including connectivity between municipalities and cities that are dispersed across a rural environment.

7.2 FROM RESILIENCE TO URBAN ROBUSTNESS

Do not build a city on business models but on (digital and analogue) public infrastructures

Important for resilience and robustness is to recognise good mobility practices that fully address social and environmental targets. For instance, cost-effective and environmentally friendly frugal innovation in infrastructure – that makes use of existing working solutions. But to fulfil the vision that "Cities and urban areas need to drive sustainable urban development and realise green agendas, as well as tackle climate change and safeguard urban eco-economies", a transition in transportation (greenification, change of behaviour, densification of cities...) is required. For example, climate-friendly mobility improves the traffic and environmental situation of cities but also the societal environment and public health.

However, this theme on mobility in the DUT focuses too much on environmental aspects. Urban robustness has much more dimensions which need to be considered (also in mobility): social coherence, health, security, etc. Robustness hereby being understood as the robustness created by the collective well-being of people. These issues relate strongly to social cohesion and social mobility, and, ultimately, the provision of equal opportunities for society to participate in (urban) amenities and services regardless of their place of residence and socio-economic status. It includes the challenges of dense settlement structures, short distances for active mobility, wide range of public mobility services.

Furthermore, the current global health crisis shows us the limits of today's mobility systems centered on the private car. The Covid-19 crisis shows that we need a localized urban structure where we can organize our lives in a non-motorized way. Walking and active mobility is very important for urban resilience and community resilience. So the partnership should address how to shape robust systems for walking as basis for the urban mobility system. It will improve public transport and create opportunities to capitalize on many co-benefits.

7.3 SUSTAINABLE LAND USE AND URBAN INFRASTRUCTURES

Make urban space more effectively support accessibility than being mainly unproductive parking space for cars

Regarding sustainable land-use and urban infrastructures, the contemporary unequal use of space between different types of traffic, and between traffic and non-traffic in urban areas should be addressed. Less cars on streets means more space for other uses (recreation, urban greening measures, etc.). There is a need to internalise the external value of space, e.g. the value of parking space. Sharing, sharing and sharing is the watchword for the urban mobility and accessibility transition.

To tackle this challenge, a strong perspective on urban planning and design is needed to develop compact cities instead of promoting merely technology driven approaches. This also relates to urban morphology, density and retrofit of industrialised cities and urban areas: density is critical to 21st century living, but sprawl still dominates. Particularly a challenge in peri-urban areas. The tension between real estate expansion projects and agriculture preservation is a dilemma to highlight in the urban-rural continuum.

Of course, clean tech has its place: energy efficiency in mobility and accessibility relates to the maximisation the benefits of rapid mass transit to reduce dispersed short distance travels. Furthermore, systems for smart charging and seamless connections at transit hubs are needed. And unmanned mobile vehicles may create a prospective fully-electric delivery system integrated with other urban infrastructures.

7.4 INCLUSIVE PUBLIC SPACES

Mainstream universal design in all urban public spaces!

Fair access for all to urban green and blue spaces, urban goods and amenities. Addressing the need for universal design in urban public space, the theme of mobility and accessibility, as it rubs up with dilemmas around inclusive public space, hence seems to call for place making approaches. Urban areas require a large number of shared spaces and meeting places where car traffic is subordinated (cf. 'Copenhagenization) or to prioritize car-free streets. They also require an urban design for human scaled neighbourhoods, and introduce quality street furniture, walking and cycling infrastructures, and overall active mobility in the form of pedestrian and bicycle-friendly planning prior to car-friendly planning approaches.

Inclusiveness also relates to the challenge around inner peripheries, segregation and marginalisation in and between dense urban districts. Public spaces may here be the way to connect land-use (urban function) and to make the whole urban fabric accessible and inclusive.

REFLECTIONS ON PILLAR 3: URBAN CIRCULAR ECONOMIES THROUGH SUSTAINABLE URBANIZATION

Participants were asked to rate in how far the priority area of Urban Circular Economies Through Sustainable Urbanisation resonated with their perspectives on urban transitions in percent (Figure 14). Among all respondents, the average number is over three quarters (76.5%). 25% of the respondents answered that the priority area resonated with more than 90% with their perspective on urban transitions.

Urban Circularity can only be achieved by combined policy making on local, national and European efforts
Efforts on European scale are required to advance existing linear models and make them compatible with circular economy approaches. On a local scale, more experiments and living labs are required to test approaches, draw context specific conclusions and facilitate capacity building and learning. On regional level, stimulating regional resource and product flows is required. A combination of policies and implementation measures, from local to European are required to create awareness and critical masses. The combination of different scales of policies, but also flows of resources requires capacities to shape appropriate governance processes.

Urban Agriculture for circular and green urban areas
Urban agriculture (UA) will bring us closer to circular and green urban areas. As such, issues connected to urban agriculture include issues of urban governance, built environment (e.g. the use of rooftops), logistics and mobility, regulations, recycling of nutrients of (human) waste, etc. Overcoming rigid understandings of urban and rural functions can help in developing urban transition pathways. Innovations in governance and (land-use) regulations are required to tap upon the larger potential of urban agriculture for sustainable urban futures.

How does a circular urban area look like?
Visions of cities and urban areas could help to communicate

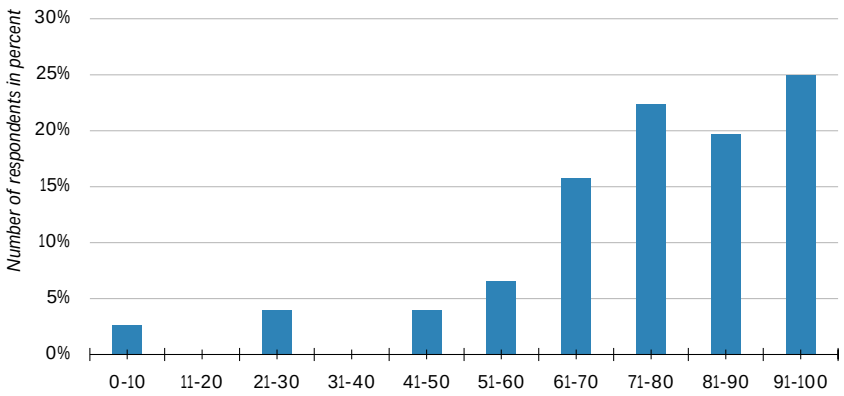


Figure 14: Stakeholders' assessment on how far the pillar on urban circular economies matches with their perspectives

how circular urban areas would look like. Issues to consider in this regard should include the effects on the mobility system, how one urban area connects to others in a network and what systematic changes are needed, which regulatory frameworks are required. Policy and politics need to work on these questions to implement a vision of circularity. Experimenting and small-scale implementation will help overcoming boundaries.

8.1 DIGITAL TRANSITIONS AND URBAN GOVERNANCE

Data and digitalisation facilitating urban circularity

Efficient collection and processing of circularity-facilitating data on the built environment is a prerequisite to develop and assess new approaches and advance concepts. Resource-conscious urban planning where material flows and life cycle impacts from urban redevelopment are considered as an integral part of the planning process are called for. Digitization is essential since it enables connectivity and it is necessary to manage circular economies at all levels. The reuse of materials, energy or other resources and its optimization needs continuous tracking and monitoring and smart managing systems, to detect demands and help production to meet these demands. Smart digital technologies support deconstruction and reuse that are seamlessly integrated with digital market places and modern BIM based design practices. Innovative ways to share and use public and private data on incoming and outgoing goods, resources and waste streams, waste management and waste logistics for research purposes is needed to develop, test and implement new collaborative solutions fitting an urban circular economy. Facilitating data and information can bridge between supply and demand of goods (including agricultural products).

Digitalisation and circular urban economy will not automatically lead to enhanced sustainability

Digitalization is one of the key enablers for transition to circularity in urban regions. However, it is important to recognise that digitalisation will not automatically lead to greater sustainability. Maximising the synergies between digitalisation and circular economy, and preventing negative externalities within the urban ecosystems would be one of the key issues. Data availability and reliability and privacy issues are to be studied. At the same time, the use of (residents) data needs to comply with individual and privacy rights.

8.2 FROM RESILIENCE TO URBAN ROBUSTNESS

Robustness to shocks requires flexible, adaptive, yet clear governance structures and linking economic development with ecological practices

The effects of the COVID-19 outbreak showed the vulnerabilities of urban systems to global shocks. The crises highlights how essential urban green, green-blue infrastructure as well as circular and local organisation of economies are for providing urban functions and services to the publics. Localizing supply chains and public spaces have to meet the residents needs while providing a safe environment with limited risks of contagion. At the same time, local production, including food supply, enhances the robustness in times of crises.

Circular urban economies are required for enhancing robustness of urban areas: for realising the full potential, capacity building measures are required

Local production and consumption patterns, as well as localisation of supply chains require the embedding of knowledge and communication about the benefits in urban public administration and society. Additionally, regulatory frameworks and governance models supporting circular systems are required to achieve robust urban systems. These governance models should reflect resourcefulness and should provide adaptability, flexibility to easily adapt in times of crises. Educating residents about the benefits of circular economy from an early age is required to reduce the dependencies on primary resources coming from other territories.

To fully achieve urban robustness, a radically linking economic development and ecological and socially sustainable practices is required.

This includes reusing, repairing and recycling, urban mining and sharing while supporting a local social economy. Capacities and governance models need to be in place reflecting these ambitions. Local traditions and knowledge (e.g. in manufacturing), often not practiced anymore and on the verge of being forgotten, can help linking progressive pathways with local urban identities.

Urban agriculture will enhance the robustness of urban areas

Local production of agricultural products will limit the dependencies to external supply chains. Local production of agricultural products can be powered by waste heat, building synergetic effects. However, land value and the competition for urban land and market forces are barriers for larger scale, commercial urban food production.

Embedding industrial traditions for circular economies

Europe has a strong tradition in industrial development. These histories shape the identities of many urban areas across Europe. At the same time, these industrial histories provide embedded, context specific knowledge(s). This knowledge can help enhancing the transformational capacities for realising circular economies while taking stock of the specific place-based urban identities and cultures.

8.3 SUSTAINABLE LAND USE AND URBAN INFRASTRUCTURES

Tacking stock of existing infrastructures and building stocks, activating underused buildings and spaces

Sustainable land use starts with taking stock of what resources (buildings, infrastructures, etc.) a certain urban area has. Repurposing underused spaces and buildings and transforming them to new use functions is essential for limiting soil sealing and its negative implications. In a circular city, the materials

hibernating in the building stock which cannot be transferred to new use functions need to be considered, recycled and reused. Material efficiency and reuse as well as carbon neutral construction is key.

Urban planning needs to adopt principles of circularity

Land use planning is the base of urban management. Depending on how the city is planned, on how infrastructures are placed and what type of infrastructures are built circular economies might be facilitated or, on the contrary, can have too many barriers to become effective. When planning the city, circular economy principles must be taken into account. This includes considering what type of economic activities can be placed in a specific area or not in order to foster resources recovery as well as what type of infrastructures will be needed in order to enable circular economies, such as heat recovery from industrial processes, use of regenerated water, specific materials recovery minimising transport, etc. Adopting principles of circularity in urban planning will contribute to minimizing urban sprawl and soil sealing with the goal of zero soil consumption.

Architecture, planning and design of adaptive and functional open/neutral infrastructures

Architecture, planning and design should be adaptable and flexible according to their functions. Urban areas are constantly changing and planning for future retrofitting and redesigning already from the beginning helps to keep negative externalities low. Additionally, new paradigms are required to include different use functions to the urban environment, for example, urban agriculture.

Preventing sealing of soil by flexible land use

Soil sealing and the degradation of land is a major challenge for many urban areas. The flexible use of (vacant) land and buildings can contribute to ease pressures on urban, non-built environments. This includes soil rendition for urban food production and the re-purposing of underused spaces and buildings for green and green-blue infrastructures. The focus should shift from low-level applications (waste management, downcycling, recycling) to high-level applications (life cycle extension, reuse, remanufacture, adaptable assets, resource sharing). Focus should shift from the production of new items to extending the use of already existing assets, i.e. sustainable stock management.

8.4 INCLUSIVE PUBLIC SPACES

Synergetic effects: Public spaces reflecting principles of green circularity

Public spaces build along principles of circular economy can help educating citizens and create awareness. Additionally, green and green-blue infrastructures in public spaces built with local resources might increase the health and wellbeing of the residents. Nature based solutions have a significant role to play. Public spaces must be designed including the principles of circular economies: prioritisation of renewable resources, preservation of existing resources, waste as a resource, eco-design of the spaces, cooperation with all stakeholders in order to create a shared value. A key issue is to use green public spaces as places for circular awareness towards society.


TOGETHER

REFLECTION ON THE PORTFOLIO OF IMPLEMENTATION MEASURES

A portfolio of implementation measures is proposed beyond the realisation of joint calls to achieve the partnership objectives (Figure 15). Stakeholders were asked to indicate the usefulness of these suggested portfolio (Figure 16) as well as rank the individual measures according to their relevance for the stakeholders' ambition (Figure 17). Overall, a clear support for the proposed measures can be observed. Nearly all measures rank above 4 (5 as maximum). Interesting enough, a multi-stakeholder community of practice is seen slightly more important even than the availability of funding in joint calls. This is closely followed by trainings, models for replication and synthesis of research results. All these measures pointing towards the importance of capacity building and making results available for wider exploitation. More detailed suggestions and reflections are summarized in the key messages.

Ensure openness and transparency for all stakeholders
JPI Urban Europe was able to develop a community across stakeholders. However, to achieve its objectives it must continue to be open although to newcomers, those stakeholders and partners that were not able to participate so far. Particular emphasis should be given to small municipalities as they need support in terms of education and knowledge to exploit the potential for urban transformation.

Develop innovative funding formats to meet urban stakeholder needs
Stakeholders reflected on the current situation of JPI Urban Europe calls and the fact that not all stakeholder groups are able to benefit from calls and joint projects across countries. Funding and appropriate funding rates are requested for small and medium-sized cities, NGOs and other urban actors. A mix of challenge-driven calls, scholarships and grants could encourage the development of innovative solutions. The implementation of different types of calls is suggested as well as options to prolong or follow-up with successful projects. Longer-term projects and a sequence of projects is seen as essential to bring research and innovation into action and larger-scale implementation. This should also include tailor made investment programmes.

A programme to connect research and practice
As already indicated earlier, stakeholders expect opportunities for co-designing the programme from the beginning and throughout its implementation. Cities should be given a particular role in setting the priorities and mobilising them for cooperation. The inclusion of alternative voices and a close dialogue with all stakeholder groups should support feedback loops to adjust the program according to achievements, changing priorities and anticipating unexpected developments. In order to bring research and innovation to practice, measures for capacity building are needed that support practitioners and experts in the cities. For achieving practical proven solutions, the programme must include real showcases based on practical knowledge.

Consider the territorial context from urban to peri-urban and urban-rural dimensions
Urban development takes place within its territorial context. The appropriate spatial scale, from neighbourhoods and districts to peri-urban and functional areas, has to be considered in the programme, its pillars and in single projects. Stakeholders strongly demand to take up urban-rural dynamics and the interrelationship of urban and rural issues and developments more prominently in the partnership. On the other hand, projects could be encouraged to establish to involve local and regional stakeholder and thus connect well to territorial agendas.

Create a European knowledge hub for good practice and data
The potential of developing a knowledge hub are reflected by stakeholders by raising various aspects or models for such knowledge hub(s). It is encouraged to look into topic- or

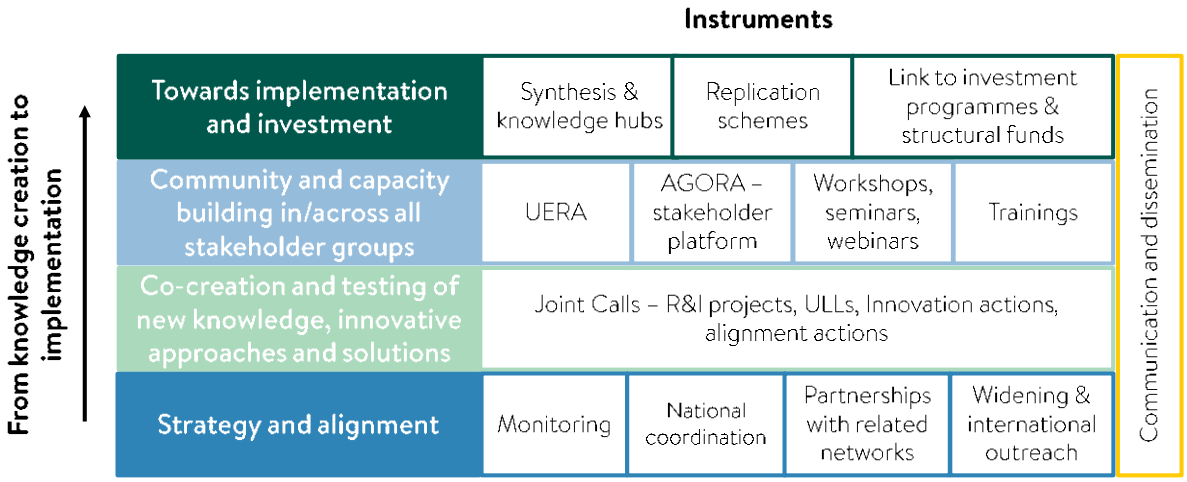


Figure 15: proposed DUT portfolio of implementation measures

pillar-related sub-hubs that can offer theme specific formats for exchange. The importance of data hubs, a real common platform for urban data, is highlighted. This is connected to the demand of professional and efficient data management and sharing, including open access or repository use to strengthen inter- and transdisciplinary research. A European hub for good practice is seen as necessary, at the same time, duplication of existing knowledge hubs must be avoided.

Consider training and education as essential elements of capacity building

Stakeholder suggestions regarding training and education comprise new forms of academic curricula as well as formats for local dissemination and learning. Stakeholders from research strongly emphasis to translate knowledge and experience gained in the DUT partnership into educational curricula. Trainings for future professionals in the private sector and city administration are needed, not only on new technologies but also new organisational requirements, process innovations, etc. While information and training formats should be inspired by projects and findings, the local context and language should be considered as well. Cooperation with existing networks or hubs, established for example by KICs, could strengthen such efforts.

Design innovative approaches and tools to make results accessible and support replication

Results must be made available and easily accessible for all stakeholders. Thus, interesting and effective communication with stakeholders is seen as key to inform and mobilise urban actors – through communication towards different stakeholder groups and non-experts using narratives, story-telling and simple language. Cooperation with existing city networks is encouraged to reach cities of different sizes all across Europe. Prizes for particular intriguing communication could be established as incentives for creative and inspiring approaches. This would also support replication and other ways to maximise economic, environmental and social impact. Urban Living Labs are mentioned as a means to not only co-design solutions but also towards replication. These could be possibly combined with other experimental formats for replication.

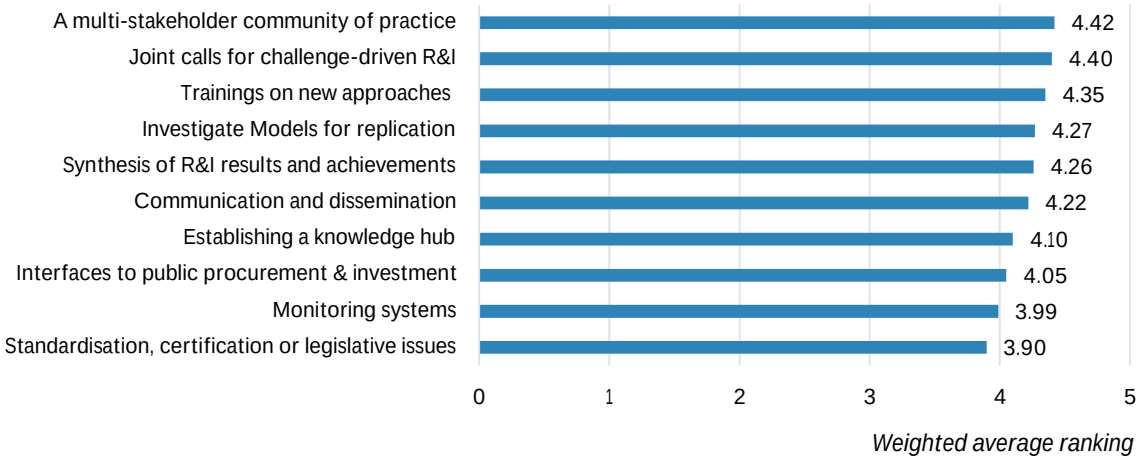


Figure 17: Ranking of the proposed implementation measures according to their relevance for stakeholders' ambition

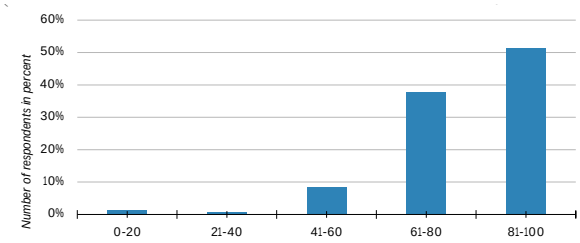


Figure 16: Indication of usefulness of the suggested DUT portfolio to achieve the partnership ambition, 0 – not useful, 100 – very useful

Strengthen the DUT impact through policy relations and international collaboration

While the DUT partnership is developed with a European focus, the international perspective is obvious. Stakeholders recommend collaboration with international organisations, such as UN-Habitat or OECD as well as other initiatives according to the defined pillars and focus areas. Through such cooperation, contributions to various policy agendas in Europe and beyond can be given. The importance of political decision making, the challenges to overcome unsustainable decision making and the resistance to change must be considered and addressed by the partnership. Alignment with and support to policy initiatives, such as the Leipzig Charter, the Urban Agenda for the EU or the Green Deal can significantly enhance the impact of the partnership activities.

CONCLUSIONS AND OUTLOOK

The public consultation offered an efficient way to raise awareness of the partnership under development and collect important feedback from all stakeholder groups. Although research represented the largest group of respondents, important inputs were received from city administration, business and civic society organisations as well.

Overall, a solid affirmation and positive attitude was recognized throughout all aspects of the survey. The vision and objectives, the defined pillars as well as suggested implementation measures are widely supported by the community. Several comments stress the relevance of such a programme and partnership, in particular when co-designed with all stakeholder groups.

The stakeholder inputs have been analysed, clustered and put forward for further discussion and conclusions with stakeholders in two AGORA dialogues. According to all these inputs, the partnership concept is further developed, the objectives and overall intervention logic sharpened, the pillars updated and translated into mission-oriented sub-programmes. The pillars and implementation measures are proposed to national delegates and DUT partners for decision making. They will be elaborated in more detail over the coming months to prepare the DUT implementation.

The latest version of the DUT partnership proposal is available at *https://ec.europa.eu/info/files/european-partnership-driving-urban-transitions-sustainable-future-dut_en*

The dialogue with stakeholders will continue to further specify the programmes for each pillar, design a multi-annual call agenda and a portfolio of implementation measures that strongly supports urban actors in their transformation efforts.

Additional comments and reflections by partners and stakeholders are always welcome and can be sent to info@jpi-urbaneurope.eu.

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