INTERNATIONAL URBAN COOPERATION
European Union

A European Union
Programme

City-to-city and region-to-region cooperation fostering sustainable development on a global scale

Best practices from the
International Urban Cooperation programme

www.iuc.eu

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1.

Why must urban and regional development become more sustainable?

Across the world, the rate of urbanisation is increasing rapidly. This has put many cities under significant strain, with local governments struggling to meet the higher demand for services in fields such as energy, sanitation, health and transport. At the same time, as the majority of people live and work in cities, urban areas are increasingly acknowledged as the arena in which solutions to major societal, economic and environmental challenges are innovated and must be implemented.

Cities still, of course, remain extensively linked to the regions surrounding them. In many cases, the dynamic is one of dual-dependence, with cities requiring resources from beyond their jurisdictions and regions being reliant on their main cities as socio-economic focal points and drivers of innovation. This means that regional governments are also subject to the push and pull of urbanisation.

Cities and regions are deeply embedded in a common system, and they must progress together on multiple fronts to remain on a path towards sustainability.

What does international cooperation bring to sustainable development?

Sustainable development requires innovation and testing of diverse solutions. Though it is not always achievable in as smooth a manner as one would hope – due, for example, to conflicts of interest (e.g. a need to update buildings via energy retrofits, while also wanting to preserve the historic value these spaces hold) – a willingness to adopt new perspectives often helps overcome such challenges. By sharing their experiences, cities and regions can work together to discover exactly which solutions will and will not work across various contexts, and to learn from each other's local trials.

The International Urban Cooperation (IUC) programme of the European Union (EU) has shown that city-to-city diplomacy and collaborative regional efforts can overcome obstacles. The programme, financed under the Partnership Instrument of the European Union, is an opportunity for local governments to learn from each other and set ambitious targets.
It successfully demonstrates that cooperative approaches to sustainable urban development and regional innovation are crucial to support on-the-ground implementation of the United Nations' (UN) Sustainable Development Goals (SDG), using solutions aligned to the New Urban Agenda, while also facilitating cities and regions contributing to the Paris Agreement.

IUC
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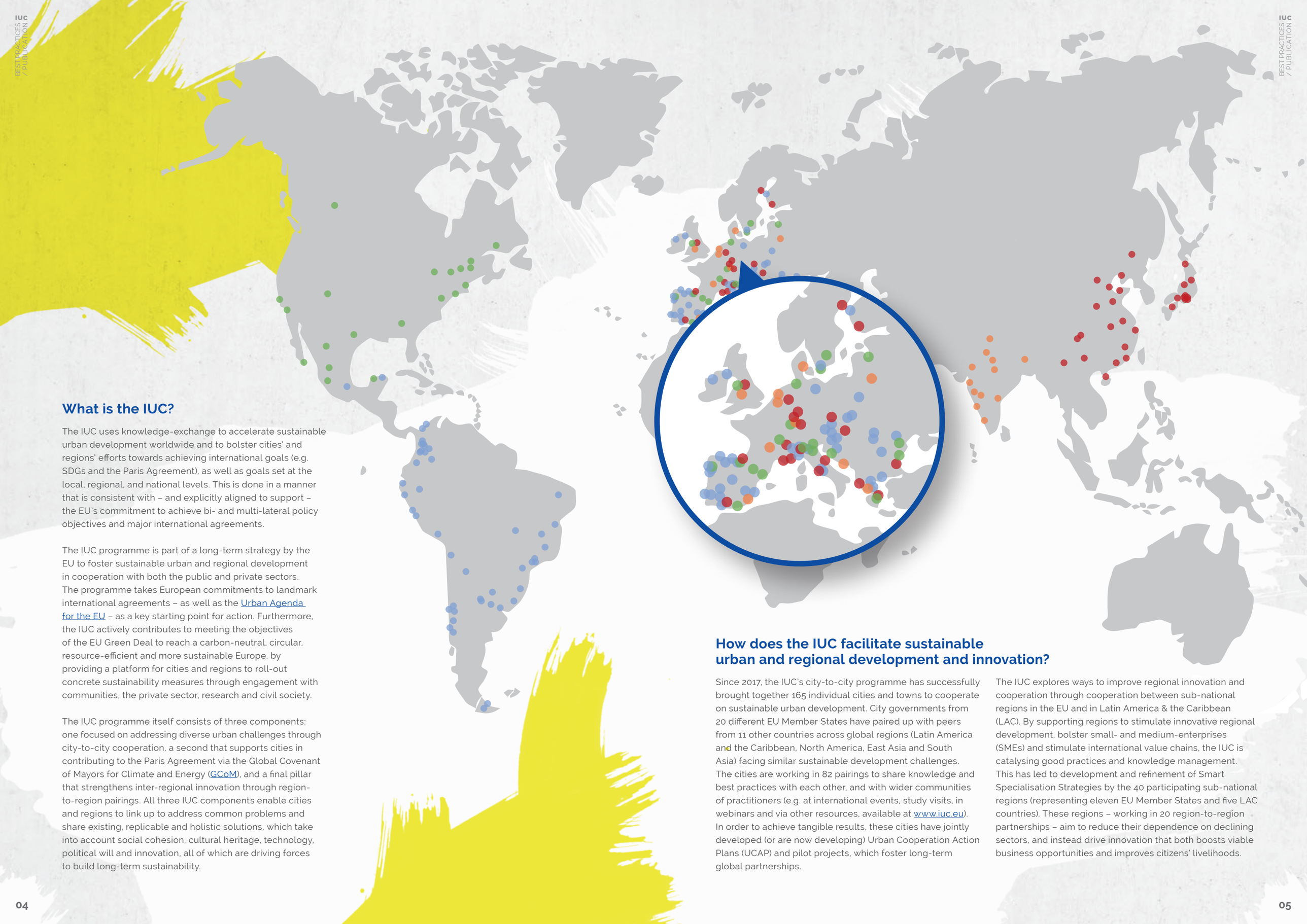


What is the IUC?

The IUC uses knowledge-exchange to accelerate sustainable urban development worldwide and to bolster cities' and regions' efforts towards achieving international goals (e.g. SDGs and the Paris Agreement), as well as goals set at the local, regional, and national levels. This is done in a manner that is consistent with – and explicitly aligned to support – the EU's commitment to achieve bi- and multi-lateral policy objectives and major international agreements.

The IUC programme is part of a long-term strategy by the EU to foster sustainable urban and regional development in cooperation with both the public and private sectors. The programme takes European commitments to landmark international agreements – as well as the Urban Agenda for the EU – as a key starting point for action. Furthermore, the IUC actively contributes to meeting the objectives of the EU Green Deal to reach a carbon-neutral, circular, resource-efficient and more sustainable Europe, by providing a platform for cities and regions to roll-out concrete sustainability measures through engagement with communities, the private sector, research and civil society.

The IUC programme itself consists of three components: one focused on addressing diverse urban challenges through city-to-city cooperation, a second that supports cities in contributing to the Paris Agreement via the Global Covenant of Mayors for Climate and Energy (GCoM), and a final pillar that strengthens inter-regional innovation through region-to-region pairings. All three IUC components enable cities and regions to link up to address common problems and share existing, replicable and holistic solutions, which take into account social cohesion, cultural heritage, technology, political will and innovation, all of which are driving forces to build long-term sustainability.

How does the IUC facilitate sustainable urban and regional development and innovation?

Since 2017, the IUC's city-to-city programme has successfully brought together 165 individual cities and towns to cooperate on sustainable urban development. City governments from 20 different EU Member States have paired up with peers from 11 other countries across global regions (Latin America and the Caribbean, North America, East Asia and South Asia) facing similar sustainable development challenges. The cities are working in 82 pairings to share knowledge and best practices with each other, and with wider communities of practitioners (e.g. at international events, study visits, in webinars and via other resources, available at www.iuc.eu). In order to achieve tangible results, these cities have jointly developed (or are now developing) Urban Cooperation Action Plans (UCAP) and pilot projects, which foster long-term global partnerships.

The IUC explores ways to improve regional innovation and cooperation through cooperation between sub-national regions in the EU and in Latin America & the Caribbean (LAC). By supporting regions to stimulate innovative regional development, bolster small- and medium-enterprises (SMEs) and stimulate international value chains, the IUC is catalysing good practices and knowledge management. This has led to development and refinement of Smart Specialisation Strategies by the 40 participating sub-national regions (representing eleven EU Member States and five LAC countries). These regions – working in 20 region-to-region partnerships – aim to reduce their dependence on declining sectors, and instead drive innovation that both boosts viable business opportunities and improves citizens' livelihoods.

What have the pairings focused on?

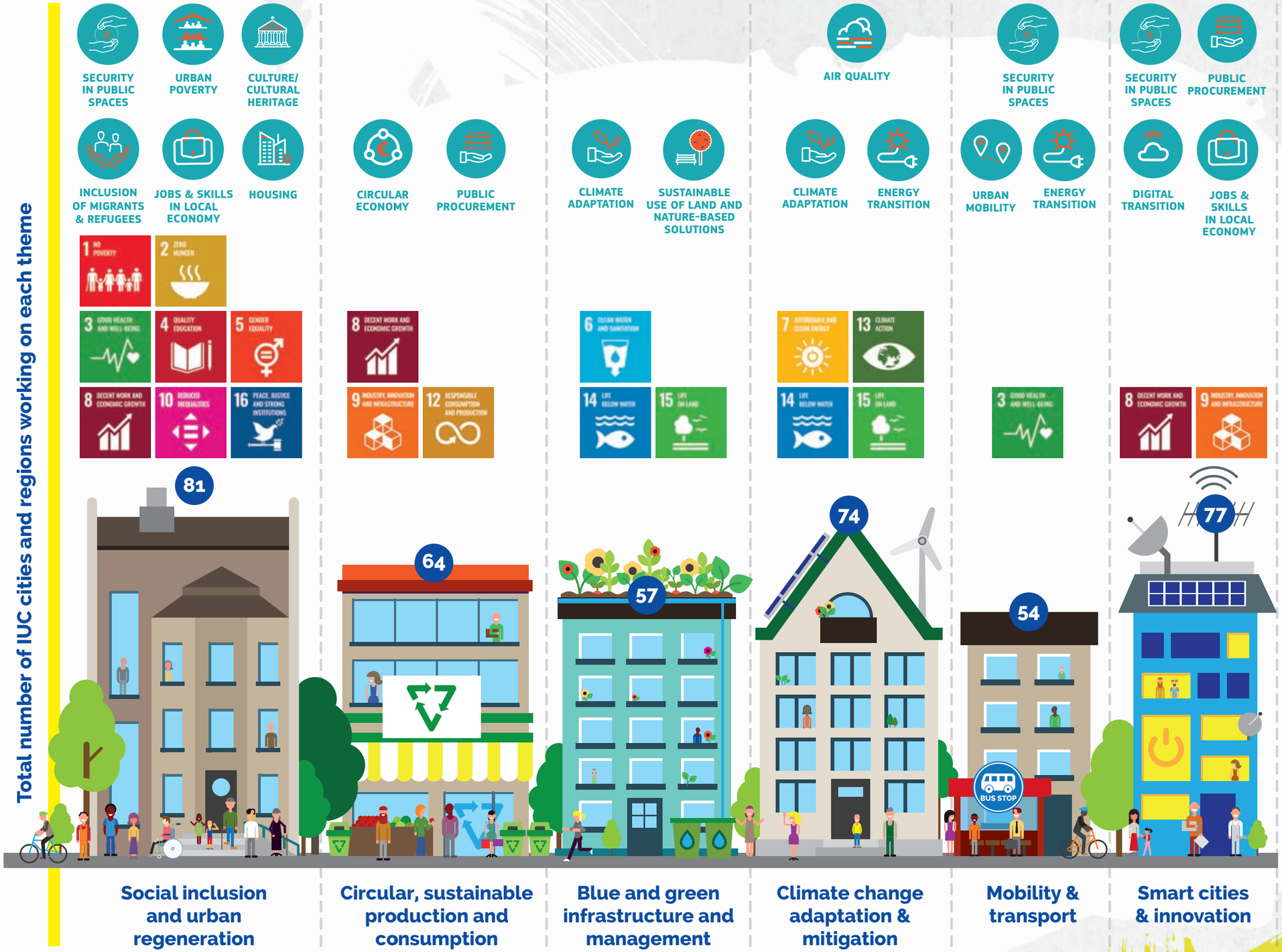
A few common threads can be identified across the work conducted by the 82 city-to-city pairings (representing 34 countries, including 23 in the EU) and 20 region-to-region pairings (representing 17 countries, including 11 in the EU). These can be clustered into six themes, which speak to the SDGs and EU Urban Agenda topics.

Few IUC pairings work exclusively within a single thematic stream and many overlaps can be found between themes (e.g. socially-inclusive mobility and blue/green infrastructure help cities adapt to climate change). This is wholly logical, given that sustainable development is necessarily highly cross-cutting: the financial, social and environmental challenges faced by local governments require innovative solutions to be developed and implemented across levels of government and across sectors, to ensure their benefits are accessible to all.

Multi-sectoral actions and holistic approaches are key ingredients to drive forward sustainable urban development. The challenges faced by cities are unequivocally interlinked – decarbonising the energy system impacts the quality of air, water, and soil, while providing access to cleaner and safer mobility restores biodiversity and boosts local resilience – and thus require integrated actions that engage different sectors within local government and across the economy.

Working holistically ensures the implementation of impactful solutions, and that cities can fully reap the co-benefits of measures. In addition, as highlighted by the EU Green Deal, engagement of all stakeholders across sectors is needed to guarantee adequate investment in environmentally-friendly technologies, to generate and support innovation, and to implement ambitious environmental standards across production and consumption.

IUC pairings develop and implement their UCAPs using a "quadruple helix approach" that engages academia, industry, civil society, and government stakeholders. This supports pairings to work in the inclusive, cross-sector manner vital to effective action.



In the following sections, further descriptions about the six identified thematic streams are presented, alongside insights into the accomplishments of the cities and regions that principally focused on each theme as part of their IUC pairing. Though there are countless cases that could represent any given thematic stream, a select few are featured in this publication, and serve to highlight some of the most interesting, innovative and/or replicable examples of best practices.

2.

Social inclusion and urban regeneration

Though cities are, first and foremost, communities of people, it should come as no surprise that, as they become larger, the diverse needs of their residents become more complex and certain people may fall through the cracks.

Luckily, it is also in the hands of cities and regions to offset these trends. IUC cities and regions are developing inclusive solutions that integrate marginalised groups, renovate neglected neighbourhoods, build up educational opportunities to help reduce inequalities, mainstream anti-discrimination efforts, contribute to peaceful solutions, celebrate shared heritage and engage citizens in communal decisions.

GWALIOR <> LEUVEN

Engaging citizens for heritage protection

Gwalior (IND) and **Leuven (BE)** each have a number of culturally-important buildings, including some under private ownership that are not well-preserved. Leuven is passing on its knowledge in the field of heritage protection to help Gwalior improve relevant regulations and mechanisms, including identifying key policy gaps and applicable solutions (e.g. cultural funds or smart technologies), which also tap into the perspectives of local stakeholders. By stimulating active public participation, the cities hope to make Gwalior's owners, tenants, shopkeepers, tourism businesses and other actors aware of the value of maintaining cultural heritage and the benefits of helping to conserve it – a model they aim to replicate across India.

Fighting insecurity through sustainable housing policies

Both **New York (USA)** and **Barcelona (ES)** are facing the challenge of housing (un)affordability. Many residents are unable to afford living in the city, which leads to short-term rentals and loss of community, not to mention increased poverty and even homelessness for longer-term residents. Both cities are pursuing measures to ensure that housing remains as just and affordable as possible. By increasing protections for tenants, preventing unjustified evictions, establishing community land trusts, regulating rents and establishing mechanisms to support lower-income residents and social housing, the hope is that these world-famous cities will serve as role models for how cities can take charge of housing affordability as a means of realising social sustainability.

Removing barriers to achieving gender equality

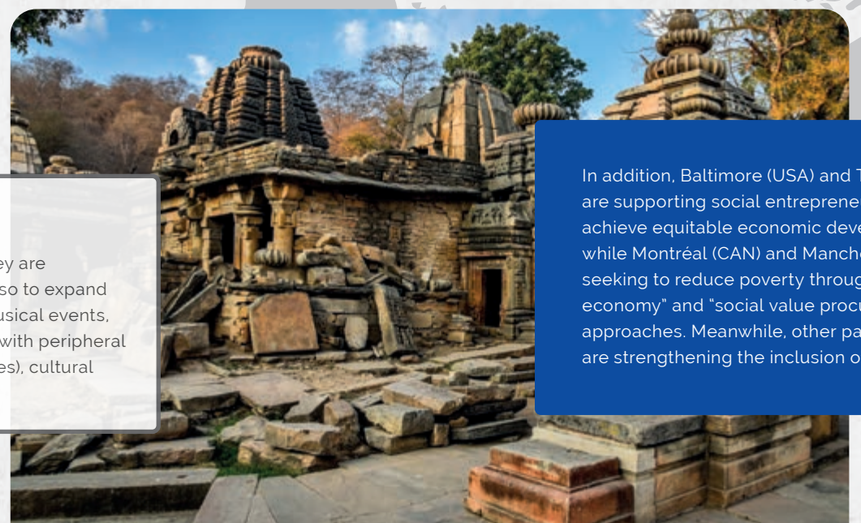
Fredericton (CAN) and **Parma (IT)** are developing tools and methodologies to investigate barriers that hold women back from pursuing advanced careers in municipalities, as well as mechanisms to help overcome (gender) discrimination. Their work has identified gaps, challenges and solutions most applicable to their two cities. However, they have also kept in mind the importance of replicability of such social inclusion measures on a wider scale, and have aimed to make sure their approach is transferable to other countries, and can even be applied to other commonly-marginalised groups.

Driving urban regeneration via cultural heritage

Miraflores (PER), a district of Lima, is working with **Larissa (GR)** to apply a cultural heritage lens to other sectors. They are exchanging knowledge as they each work to recover public spaces, not only to preserve heritage landmarks, but also to expand green spaces, create heritage routes, and stimulate tourism through cultural enrichment (e.g. artistic exchanges, musical events, etc.). They are also using heritage as a driver for more sustainable mobility planning – by decreasing car traffic (e.g. with peripheral parking zones) and increasing green mobility options (e.g. public transport hubs, cycling networks, pedestrian spaces), cultural value and public spaces can be enhanced and better enjoyed.

Ensuring inclusive urban regeneration in post-conflict areas

Cali (COL), alongside the city of **Medellín**, is developing innovative solutions and measures with **Belfast (UK)** that drive socially just urban development in post-conflict contexts. The three cities are testing ways to proactively prevent further violence through innovative methods, such as developing social enterprises, supporting community mental health and stimulating skills development, especially among youth. Creative solutions – such as using street art as a tool for reconciliation – are also being applied. These efforts necessitate significant community engagement from the cities; all are finding it worthwhile to follow this path to attain restorative justice and build up social cohesion for long-term stability.



In addition, Baltimore (USA) and Torino (IT) are supporting social entrepreneurship to achieve equitable economic development, while Montréal (CAN) and Manchester (UK) are seeking to reduce poverty through "solidarity economy" and "social value procurement" approaches. Meanwhile, other pairings are strengthening the inclusion of specific demographics within their cities, such as the blind in Ikoma (JPN) and Ancona (IT), the elderly in Yangzhou (CHN) and Granada (ES), and recent migrants/refugees in Barranquilla & Soledad (COL) and Velletri & Rome (IT).

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Circular, sustainable production and consumption

Urbanisation is putting added stress on resources, leading circular production and consumption to become a crucial aspect of holistic sustainable development. Circular development also has key co-benefits, such as leading to added value in multiple sectors (e.g. farm-to-fork initiatives or waste-to-energy technologies). With growing awareness of the need for more responsible consumption and production practices, front-running cities and regions are institutionalising circular principles across sectors and encouraging industries, businesses and citizens to contribute to this shared responsibility.

Holistic approaches to circularity

The City of **Austin (USA)** and metropolitan **Bologna (IT)** have been cooperating on several circular economy concepts with broader implications in the fields of smart solutions, urban resilience, community engagement and business entrepreneurship. They are innovating ways to encourage circularity, such as workshops to teach people to fix their own gadgets, a "materials marketplace" to match surplus materials with those who can use them, sustainable-design labs, and specialty libraries where residents can borrow tools and household items, preventing everyone from needlessly buying their own. These and other solutions are included in the circular economy toolkit that Austin and Bologna are building to support their communities.

Data-based waste management

Kochi (IND) and **Vilnius (LT)** have been cooperating on a baseline study meant to help establish a comprehensive system for solid waste management. Vilnius is transferring its experiences to support Kochi in effectively tackling challenges like low collection efficiency and illegal landfills. They are demonstrating the advantages of having baseline data and future scenarios to guide cities in establishing proper waste segregation (e.g. recycling and composting), appropriate technologies to process waste and operation of landfills. They are also engaging residents to explore even more advanced techniques like waste-to-energy options (e.g. incineration and landfill biogas) and calculating greenhouse gas emissions connected to waste management processes.

Sustainable waste management planning

San Justo (ARG) and **Pavlos Melas (GR)** are working together to modernise their urban services, in particular with respect to dealing with solid waste. To develop viable waste management plans, they have been gathering extensive data about waste characteristics and forecasting future scenarios. They are not only looking at technological solutions, but also engaging the public, for example in recycling initiatives and in projects that target land-use and biodiversity concerns that arise due to waste management in expanding cities.

SAN PEDRO DE LA PAZ <> BERLIN-NEUKOELLN

Circularity through community participation

San Pedro de la Paz (CHL) and **Berlin-Neukoelln (DE)** aim to demonstrate that a community-centred approach to waste management can succeed on multiple levels. They are learning from each other how citizen participation can lead to long-lasting positive impacts on neighbourhoods. The municipalities are each engaging the public on topics like garbage collection and illegal dumping, as well as on tactics such as banning plastic bags and establishing community gardening, to show that residents can, and should, play a central role in neighbourhood decision-making.

Reaping the co-benefits of circularity

Obuse (JPN) and the nearby city of **Nagano** are working with **Turku (FI)** on strengthening their cities' approaches to circular economy. This IUC cooperation is exploring sustainable production and consumption processes across a wide spectrum of sectors, with a focus on the urban-rural nexus. These span agricultural innovations, wastewater treatment, sustainable wood-use, industrial waste management, biogas, district heating, climate neutrality/positivity, and more. Obuse, Nagano and Turku are demonstrating that striving for circularity is a key component to working across food, water, and energy fields.

Other IUC cities and regions working towards innovative solutions for circularity include the regions of Minas Gerais (BRA) and Silesia (PL), who are pursuing efforts to make mining processes more sustainable. Weinan (CHN) and Reggio Emilia (IT) are working on sustainable agriculture practices at the urban-rural nexus, while Shimla (IND) and Wolverhampton (UK) plan to use bricks made from recycled plastic to construct bus stops.

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4.

Blue & green infrastructure and management

More and more cities and regions are embracing their natural roots, ensuring that the environment gains prominence in community life. This comes from an understanding that nature is not only something worth protecting, but is something that increases quality of life for all. There is a growing acknowledgement among local governments that blue (i.e. water) and green (i.e. ecosystems) approaches should be applied to ensure that natural resources are properly maintained, and that physical and social components of our communities are enhanced and made resilient.

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TOKOROZAWA <> BRATISLAVA

Limiting flood risk through nature-based solutions

Tokorozawa (JPN) and **Bratislava (SK)** work together under a smart eco-city approach, which combines aspects of smart cities with urban nature-based solutions. The cities are aiming to "green up" public spaces to facilitate flood management. For example, Bratislava is working with Tokorozawa to achieve better urban drainage to counter pluvial flooding from excess rainwater and storms. In addition to looking at nature-based, infrastructural and technological solutions, both cities are also developing risk maps as part of a disaster planning approach to attain resilience.

Co-benefits of blue/green infrastructures

Burlington (CAN) and **Växjö (SE)** are investigating how ecosystem services and blue/green infrastructure can provide social value. They are applying a strategic approach to urban parks, by designing new parks to be sustainable and by revitalising former industrial areas into healthier green spaces. They have discovered that such transformations can generate numerous co-benefits, such as better air quality, restored lakes, stronger urban resilience through storm water management and even increased community engagement due to the public seeing tangible local improvements.

Water scarcity and coastal resilience

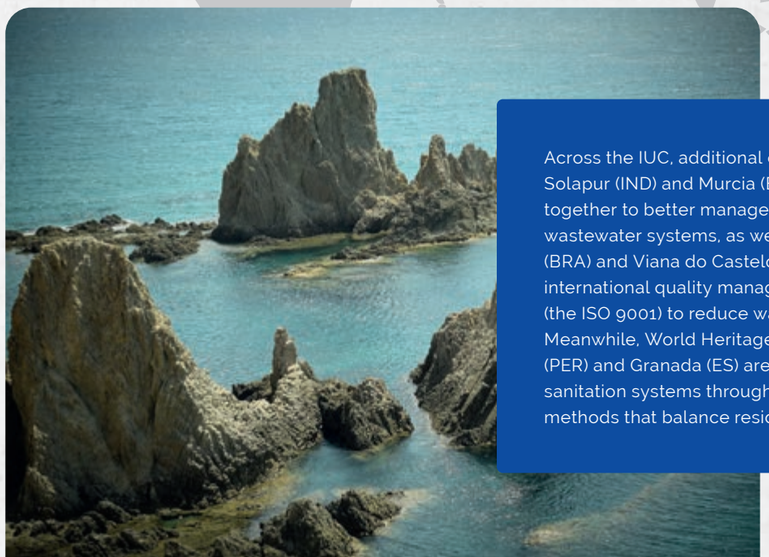
Los Cabos (MEX) and **Almería (ES)** are coastal towns with significant limitations on the amount of freshwater at their disposal. Such geographical restrictions are leading both towns to be creative in how they manage water resources. For example, Almería has pioneered an innovative water desalinisation plant and distribution company aligned with the "Blue Economy" concept, which Los Cabos is seeking to replicate to sustainably take advantage of their ocean resources. Though both face a lack of water much of the year, occasionally both towns are inundated by sudden storms that flood susceptible neighbourhoods. This has spurred Almería to create an emergency preparedness manual similar to Los Cabos' to increase urban resilience.

Cadastres for water-supply preparedness

Ibague (COL), alongside the nearby town of **Piedras**, are collaborating with **Graz (AT)** on finding water supply alternatives that make use of advanced cadastre (land parcel) land registries. Graz is using its experience with land registries to support the Colombian cities – which are currently dependent on limited water supplies that are vulnerable to climate change and disasters – in updating their data on water sources and quality standards. By combining this cadastre approach with entrepreneurship opportunities and social engagement, the hope is to set up mechanisms to increase their urban resilience in the long term.

Smart, city-scale rainwater drainage

Liuzhou (CHN) and **Rome (IT)** are exploring how to work at a city scale on issues of rainwater/flooding and ground permeability in heavily urbanised contexts. Liuzhou is working to adopt the "Sponge City" initiative, whereby China aims to have the vast majority of its cities adequately drain rainwater and harvest this excess for re-use. Rome is working with them to adapt this concept to their own context, as well as to combine it with the smart city concept to ensure proper monitoring and multi-purpose infrastructure. The cities are investigating the feasibility of several measures, including urban drainage systems, permeable construction materials/methods and green spaces.



Across the IUC, additional examples include Solapur (IND) and Murcia (ES) working together to better manage water and wastewater systems, as well as São Leopoldo (BRA) and Viana do Castelo (PT) using international quality management standards (the ISO 9001) to reduce water losses. Meanwhile, World Heritage cities Arequipa (PER) and Granada (ES) are renovating sanitation systems through non-invasive methods that balance residents' needs with protecting historic centres via Inter-American Development Bank loans. Birmingham (USA) and Padova (IT) are applying complementary approaches that address both water management and nature-based solutions, while Windsor (CAN) and Vitoria-Gasteiz (ES) are using ecosystem services for soil remediation and brownfield restoration.

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5.

Climate change adaptation and mitigation

Although it is a global issue, climate change is often most acutely felt at the local and regional levels via, for example, electricity brownouts from using too much air conditioning, flooding putting key infrastructure and lives at risk, and increasing urban populations due to more rural communities fleeing their own climate catastrophes. Cities and regions have also shown themselves to be among the most important drivers for implementing innovative climate solutions, including many that are replicable in other areas. The IUC programme also supports cities in joining the GCoM initiative – the largest global alliance for city climate leadership, built upon the commitment of over 10,000 cities and local governments to accelerate ambitious, measurable initiatives for a low-emission and climate-resilient future.

Decision-making driven by carbon budgeting

Edmonton (CAN) and **Riga (LV)** are applying carbon-budgeting approaches to how they make municipal decisions spanning public procurement, strategic prioritisation, business governance and urban regeneration. The cities are striving to reduce their climate footprints in a way that is applicable to their local contexts: Edmonton is particularly interested in greener transport and district energy, while Riga will take a business approach to redeveloping its waterfront and brownfield sites. Both aim to demonstrate that cities can use carbon-budgeted municipal operations to contribute to achieving climate goals.

Recovering waste to produce circular energy

Udaipur (IND) and **Aarhus (DK)** are developing a baseline study to assess the feasibility of utilising sewage sludge as an energy source. They are investigating characteristics of the sludge, in addition to regulations and policies relevant to sewage treatment processes, to determine the effectiveness of adapting existing infrastructure to support this new technique. Once they determine a viable business case that aligns with local contexts, they hope to harvest biogas and/or recover heat from sludge. This effort cuts across themes, demonstrating that cities can apply circular economy principles both to treat wastewater and produce more sustainable

Renewable energy sources (RES) at a regional scale

The province of **Tierra del Fuego (ARG)** and the region of **Ostrobothnia (FI)** are focusing their IUC cooperation on deploying renewable energy source (RES) technologies across their regions. Tierra del Fuego would like to replicate Ostrobothnia's fairly robust RES-share by building up its own renewables industries. They are also collaborating between research institutes to effectively exchange knowledge, including learning from Ostrobothnia's experience implementing the European Commission's Regional Innovation System – an approach that Tierra del Fuego is keen to adopt for its own smart specialisation.

FORT COLLINS <> VILA NOVA DE FAMALICÃO

Stimulating effective local climate governance

Fort Collins (USA) and **Vila Nova de Famalicão (PT)** are working to enable community-centred climate action. The cities ensure meaningful citizen involvement in climate governance, including in the planning of holistic climate actions, in implementing low-carbon mobility, and in encouraging behavioural shifts. Innovative approaches like installing a public couch for citizens to directly voice their concerns and questions have already proven to be popular in both cities as public engagement methods for mitigation and adaptation initiatives, demonstrating that an informed and active citizenry can successfully facilitate cities' efforts in the long term.

RES deployment and storage

Koriyama (JPN) and **Essen (DE)** are aiming to tackle climate change via a broad spectrum of traditional and innovative measures. The cities are exploring numerous RES and efficiency solutions, which can contribute to mitigation efforts. They are not only exploring which smart and RES technologies to deploy, but also looking to address one of RES' greatest challenges: storage. This will ensure that their cities can reach their full potentials for fighting climate change through RES.

IUC cities and GCoM signatories Hirosaki (JPN) and Donostia-San Sebastián (ES) are developing sustainable district heating systems, while Rio Grande (ARG) and Albacete (ES) are focusing on supporting solar energy business innovation start-ups. Guelph (CAN) and Rijeka (HR), as well as the regions of Distrito Federal (BRA) and South Bohemia (CZ), are looking into management solutions to fight climate change, such as effective municipal energy management systems. Synergies between climate change and other thematic streams are clear, as seen by Ottawa (CAN) and Malmö (SE) pursuing waste-heat recovery options, and by Yokohama (JPN) and Frankfurt (DE) making use of smart solutions to nudge their citizens to adopt more sustainable energy behaviours. Meanwhile, other cities aim to support broad climate initiatives through, for example, the establishment of a climate fund and local climate platforms in Belo Horzonte (BRA) and Almada (PT).

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6.

Mobility and transport

Due to its dependence on fossil fuels, making personal and commercial transportation more sustainable remains one of the greatest challenges for mitigating climate change. What's more, an ideal transport system is not just environmentally sustainable, but also economically feasible and people-friendly.

Regions and cities across the world are rising to this challenge. This often requires a shift in local policies and infrastructural investments, as well as local behavioural change. Creative mobility solutions can help ensure the vital flow of people, goods and services, while contributing substantial added-value across many other fields (e.g. climate change mitigation, air quality, public health and socially-inclusive regeneration).

Linking sustainable mobility and tourism

As tourism-oriented coastal cities, **Santa Monica (USA)** and **Varna (BG)** are applying aspects of the "mobility as a right" approach to ensure that both visitors and locals have adequate access to multiple mobility options, which link different modes of transit, like public transportation, cycling and e-vehicles. Understanding that tourists are often on foot, the cities are investigating how to turn parts of their towns into pedestrian-only zones for specific events, as well as how reducing downtown congestion from cars (e.g. with parking zones), can have added benefits for tourists and citizens.

Planning mobility through holistic participatory processes

The cooperation between **Mérida (MEX)** and **West Athens (GR)** has focused on sustainable urban mobility plans (SUMPs). Mérida has elaborated its SUMP based on West Athens' experience, while West Athens is using Mérida's participatory experiences to implement its SUMP's measures, with an eye towards comprehensive stakeholder engagement via task force groups, inter-municipal exchange, open public consultations and online platforms. By offering varied mechanisms suitable to different stakeholders, the cities are fostering more inclusive and responsive cultures, which contribute to the longevity of initiatives.

Improving quality of life through bike-sharing and sustainable mobility

Nagpur (IND) and **Karlsruhe (DE)** are seeking to ensure that mobility remains people-oriented. Karlsruhe is applying its experience as a front-runner in public bike-sharing to support Nagpur to implement a similar programme. This includes assisting Nagpur in overcoming the common local association of bicycles with poorer demographics, and showing residents that cycling is not only practical when combined with local bus and metro networks, it also reduces traffic congestion, benefits the environment, improves individual and public health, and even generates local and regional business opportunities.

CONSÓRCIO INTERMUNICIPAL GRANDE ABC <> TORINO

Bolstering multi-modal urban mobility

Consórcio Intermunicipal Grande ABC (BRA), a consortium of municipalities southeast of São Paolo, is cooperating with **Torino (IT)** to bring about multi-modal urban mobility. They are looking at how a traffic control centre can help to sustainably manage multiple mobility options in their large (intermunicipal) systems. Both are particularly interested in how smart technologies (e.g. online platforms and mobile apps) can effectively streamline the application of a "Mobility as a Service" (MaaS) approach, by accounting for private and public mobility options, and improving citizens' travel experiences.

International transport by rail

Chongqing (CHN) and **Mannheim (DE)** concentrated their cooperation on addressing international transport for railway freight. Both cities have large industries and are significant transportation hubs. In coordination with large, locally-operating businesses, the cities identified a need for a direct rail-connection between them. The new freight route improves trade, and demonstrates that cities can even play a role in driving national and international transport.

Mobility is relevant across local contexts, from concentrated old towns to sprawling metropolises. Cartagena de Indias (COL) and Málaga (ES) are cooperating through the IUC to make car traffic more manageable in their historic centres, while Panaji (IND) and Dubrovnik (HR) are approaching traffic congestion with smart parking solutions. Other cities are looking into vehicles of the future, like hydrogen-powered transport – explored by Guangzhou (CHN) and metropolitan Stuttgart (DE) – or autonomous vehicles, as is a focus for Boston (USA) and metropolitan Grand Lyon (FR). Car-free alternatives, like sustainable public transport, are being implemented across the regions of Yucatán (MEX) and Ljubljana (SI), while Ichinomya (JPN) and Ioannina (GR) are expanding cycling infrastructure.

Please visit www.iuc.eu for even more about those working on this theme.

7.

Smart cities and innovation

As technologies become more and more advanced, a sense of endless possibilities seems to be rising. It is, therefore, only natural that cities and regions are encouraging business development and innovation into so-called "smart solutions" that make use of modern technology and digitalisation.

Smart measures should be a means to a sustainable end, and not the end in and of itself. Truly intelligent innovation fosters connectivity beyond just the digital sense, in order to facilitate community interactions, stimulate local entrepreneurship, streamline public services for citizens and make society more inclusive. When done well, cities' and regions' smart solutions can push the envelope of technological, social, environmental and economic creativity through infrastructural investments, enabling knowledge exchange and providing fertile grounds for innovation in a variety of fields.

HAIKOU <> NICE CÔTE D'AZUR

Health-conscious smart cities

Haikou (CHN) and metropolitan **Nice Côte d'Azur (FR)** have focused their collaboration primarily on applications of smart innovations. In addition to exploring their roles as tourist hubs, the cities are also keen to use digital technologies to streamline urban monitoring and healthcare services. This includes exploring biotech innovations, initiating e-health solutions, improving the impact of municipal activities on the environment, and placing a focus on addressing concerns of the elderly. By also tackling a variety of challenges to realising smart solutions, such as responsible data collection and use by businesses, Haikou and Nice seek to ensure that their smart solutions make sense.

Smart technology for public participation

Metropolitan **Guadalajara (MEX)** and the City of **Hamburg (DE)** are working to investigate the role that smart technologies can play in facilitating public participation and open governance. In particular, they have looked into how digital platforms can be an effective means of engaging citizens in public planning, such as in proposed improvements to public services, solid waste management and in the proposed closure and revitalisation of landfills. They are successfully demonstrating that smart solutions can be an intelligent step for cities wishing to engage the public in cooperative initiatives.

Smart mapping for urban services

Pereira (COL), alongside the nearby town of La Victoria, is working with **Porto (PT)** to institutionalise a smart approach to planning diverse urban services. Through developing a multi-purpose land registry, the cities have obtained a digital basis to efficiently expand and improve the services they provide to residents, spanning transportation, environmental protection, sanitation, and more. By laying the foundations for smarter urban management, they can simultaneously improve revenues and ensure citizen engagement through an iterative improvement of services.

Smart, sustainable tourism

Benedito Novo (BRA) and **Alba Iulia (RO)** are investigating how smartphone apps and smart businesses can be used to ensure that tourists have access to local stories and culture, whilst also providing the municipalities with the ability to manage sites more sustainably, to support local businesses and even to link up with nearby towns to encourage longer stays in the region.

Smart solutions for disaster risk management

Rosario (ARG) is leading the way with **Genoa (IT)** to streamlining their municipal climate transition using smart solutions that reduce emissions and respond to resilience challenges. The "Rosario Responde" initiative, which establishes a smart district that intelligently manages energy and transport, and monitors urban resilience via innovative technologies, has proven itself to be highly replicable. This is due, in part, to the vast potential smart solutions have in these sectors – such as in energy savings, RES production, multi-modal mobility planning, climate risks assessment, and more – as well as due to the city having engaged citizens throughout the initiative's development process.

Smart solutions can also be implemented at a regional scale, as is being done through digital transformation across the regions of Paraná (BRA) and Valencia (ES), and with greentech innovations in the regions of Puebla (MEX) and Styria (AT). This approach can even be applied to specific sectors, as is being done with a focus on smart event and crowd management to improve security and tourism in Vitória (BRA) and Sevilla (ES), and using smart cards for public transport and other services in Chihuahua (MEX) and Zaragoza (ES). Smart methodologies can also be adopted to stimulate citizen engagement and digital literacy, as is being done in Toyota (JPN) and metropolitan Grenoble-Alpes (FR).

Please visit www.iuc.eu for even more about those working on this theme.

8.

Taking sustainable development from planning to action

How have IUC cities approached their work?

IUC cities worked intensively with their partners for at least 18 months to share knowledge and best practices on sustainable urban solutions. This was guided by the development of joint Urban Cooperation Action Plans (UCAPs).

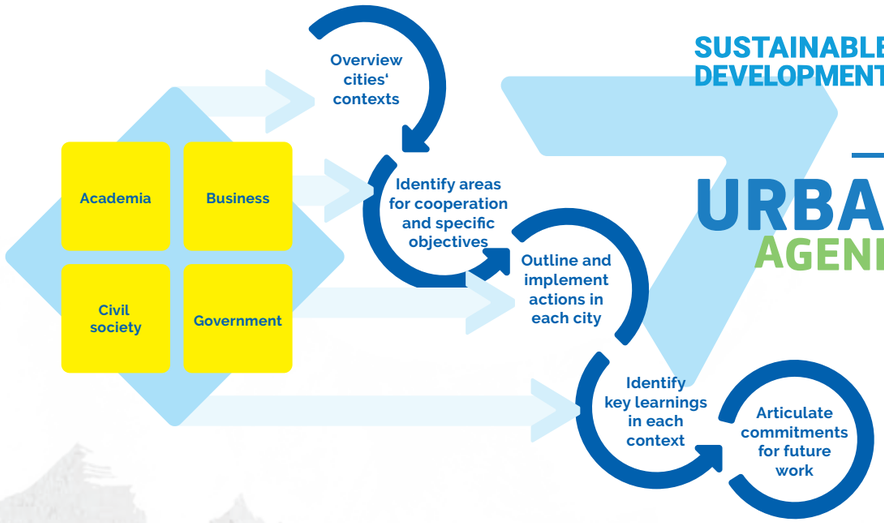
UCAPs have several sections to be developed iteratively over time. These include: overviewing the cities' contexts; identifying areas of cooperation and specific objectives; outlining transfer measures; implementing activities in each city; identifying each cities' key learnings; and articulating commitments regarding future work. In this way, the UCAPs serve as both a roadmap to guide the city-to-city cooperation process, as well as an outcome statement to ensure lasting impact. UCAP creation generates a common understanding and drives inspiration, supporting the definition of activities that achieve tangible results.

Mobilising diverse stakeholders is a crucial component for the successful development of a UCAP. What is important is not the size or prominence of contributing actors, but rather that a critical mass of engaged communities are mobilised. IUC pairings applied a "quadruple helix approach" whereby they brought together actors from academia, business, government and civil society for the planning, roll-out and implementation of their activities.

By using UCAP methodology, cities turned initial ideas into innovative, replicable activities and economically viable pilot projects that are being realised, even in the short term.

Urban Cooperation Action Plans

A pathway for cooperation that works to localise international goals



What concrete projects emerged?

The measures and pilot projects that arose from IUC pairings' work are substantially contributing to the implementation of cities' local sustainable development strategies. Furthermore, these actions – which span a wide range of sectors – contribute to achieving the global goals such as the SDGs, New Urban Agenda, Urban Agenda for the EU and the Paris Agreement, and enhance quality of life in urban areas.

Rainwater storage for monsoon and drought resilience

Surat (IND) is working to replicate a water plaza concept from **Rotterdam (NL)** for one of its riverside neighbourhoods. Adapting this innovative approach to their context will allow excess rainwater from monsoon season to recharge groundwater aquifers for later use during the dry season. Not only does this pilot project simultaneously address flooding, water scarcity and climate resilience, but the plaza also converts a waste dumpsite into a recreational greenspace for the public. Furthermore, Surat has committed technical resources and budgets to ensure its success, demonstrating that properly-supported planning can generate cross-sectoral benefits for the whole community.

Infrastructure and citizen engagement to support a circular economy

Colima (MEX) has developed a "Green Points" strategy for selective recyclable waste collection. Inspired by **Galați's (RO)** experiences, this strategy will stimulate active community participation in waste collection in ten pilot neighbourhoods in Colima. It combines broad awareness-raising campaigns with infrastructural installations at "Green Points" (e.g. urban furniture and containers to separate recyclable waste), in order to contribute simultaneously to community-building and to the creation of a more circular economy, which generates tangible economic benefits that feed back into the district.

Community brainstorming for local innovation

Kamakura (JPN) and **Umeå (SE)** are putting into practice their mutual interest in participatory social innovation. Kamakura citizens and companies join "Kamacon" each month for brainstorming sessions, which have resulted in numerous successful projects. Umeå will adapt this silo-breaking approach to town meetings, or "Umecons", where local stakeholders will brainstorm creative ideas together and identify solutions to local challenges. Both cities also use "FabLab" open workshops, and are collaborating to identify opportunities to strengthen these and other social dialogue mechanisms.

Urban regeneration through business improvement districts

Buenos Aires (ARG) and **Madrid (ES)** are working to transform major streets in their central districts, using the so-called Business Improvement District approach. This approach makes use of public-private partnership to transform central urban hubs to be more pedestrian- and people-friendly. Doing so has direct positive impacts on surrounding neighbourhoods, making "secondary" streets more dynamic, both economically and in terms of quality of life. Experts from Spanish universities are advising Madrid in this initiative, and have begun providing on-the-ground support to the local government of Buenos Aires and their Association of Commerce for the Historical Centre to aid them in testing this public-private collaboration in the Argentinian context.

Biotech innovations fostering international business-development

Guangzhou Development District (CHN) and **Granada (ES)** are building a Biomedical Technology Cooperation Centre with the involvement of relevant stakeholders from the business and research/development sectors of both cities. Specific activities planned include the development of a joint incubation/acceleration programme for start-ups from both cities, the establishment of joint ventures pertaining to cutting-edge technologies (e.g. blockchain), and building a virtual platform for stakeholders to regularly follow-up on the implementation of their pilot projects. This pairing demonstrates the strong role cities can play in facilitating stakeholder relationships and steering urban innovation.

9.

Next steps based on what has been learned

The IUC programme shows the power of cities to take local action that makes a global difference. Through action implementation, local and regional governments are directly improving the lives of their residents, as well as securing the resilience of their towns and cities for future generations, all while helping their national governments to meet international targets.

The EU supports and empowers cities around the world to drive sustainable development and climate action via various initiatives. Through programmes like the IUC, the new European Climate Pact, and initiatives like the GCoM, the EU supports bottom-up, delivery-oriented actions and policies.

With their flexibility, ingenuity and proximity to citizens, cities act as testing grounds for innovation and bold solutions. However, to do this, they must be able to count on the support, favourable regulatory frameworks, and clear mandates from other governance levels.

Governance structures and city mandates are not universal; what one city can regulate, another may be unable to without national support. As such, an assessment of the governance frameworks within which the pairing will operate is essential to secure a strong partnership that is able to scale-up the results of cooperation.

Whilst cities' priorities can be highly dependent on context, it is clear that the appetite for knowledge sharing and collaboration exceeds any local differences global cities may face. This goes beyond interest in one-on-one exchange, to also include a desire to become part of thematic clusters, where the experiences of various pairings can be shared and amplified through discussion amongst cities from various global regions. It is the IUC's experience that a combination of clustered thematic exchange and more in-depth cooperation in pairings provides an ideal format for creating sustainable, long-term cooperation, informed by a wide diversity of experiences and solutions.

This diversity of solutions, which has represented one of the greatest added-values of the programme, has been made possible by its strong commitment to engaging cities that are truly committed to implementing and strengthening integrated sustainable urban development. IUC cities range from small mountain communities, to some of the greatest capitals of the world, from middle-sized cities entering the international sustainability scene for the first time, to mega-cities, all of which bring their own creativity, and willingness to learn and share.

The openness and inclusiveness promoted through the IUC programme provided a platform for cities to engage in international exchange, and to bring along a critical mass of stakeholders, spanning research institutions, businesses, NGOs and community organisations. These non-governmental entities have often started their own cooperation through the IUC, triggering new opportunities for exchange, development and innovation.

The IUC will continue its work under a second phase, beginning in early 2021. The programme will be expanded and reinforced to include cities from EU and non-EU countries in America, Asia and Australasia under the denomination **International Urban and Regional Cooperation (IURC)** programme. Through the IURC, cities will primarily work in thematic clusters based on the UN New Urban Agenda and the Urban Agenda for the EU. Cities who wish to develop a more intensive cooperation with a European partner will also be able to pursue one-to-one city pairings. Region-to-region cooperation will follow a similar model of using both thematic clustering and one-on-one pairing, and will focus on improving and internationalising regional innovation strategies.

Through the diversity of the best practices highlighted, this collection aims to inspire cities around the world, encouraging them to become part of the larger community of peers and stakeholders convened through the IUC, all working to further sustainable urban development.

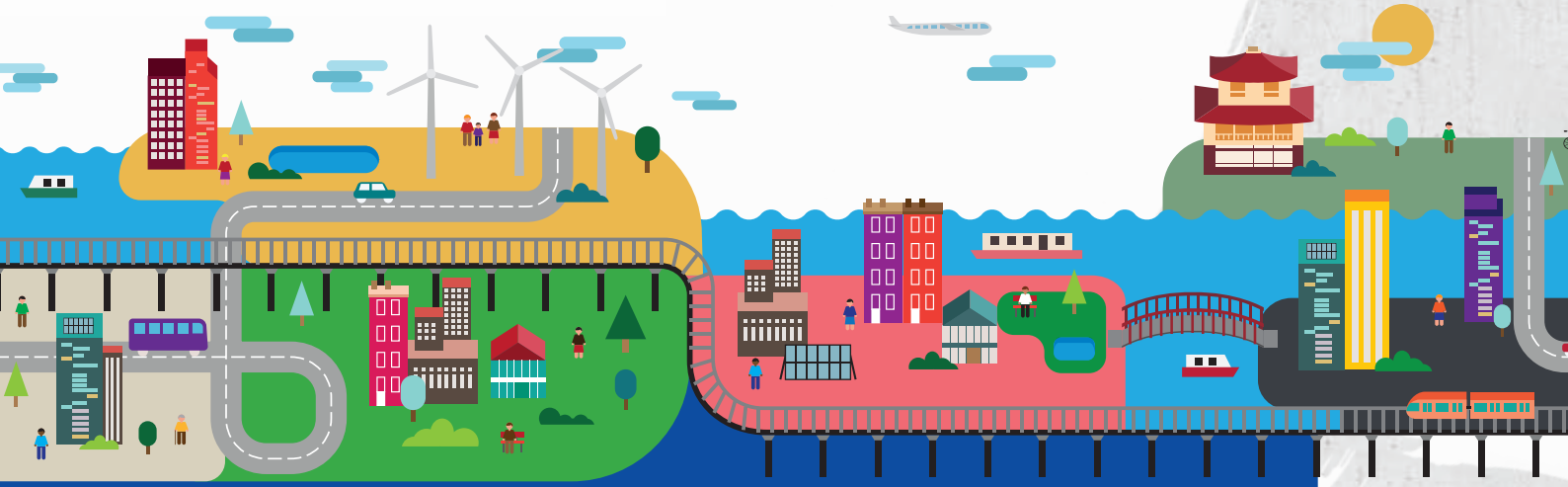
INTERNATIONAL URBAN COOPERATION
European Union

A European Union Programme

The IUC Programme

The International Urban Cooperation (IUC) programme enables cities in different global regions to link up and share solutions to common problems. It is part of a long-term strategy by the European Union to foster sustainable urban development in cooperation with the public and private sectors, as well as representatives of research and innovation, community groups and citizens. Through engaging in the IUC, cities have the chance to share and exchange knowledge with their international counterparts, building a greener, more prosperous future.

The IUC programme is an opportunity for local governments to learn from each other, set ambitious targets, forge lasting partnerships, test new solutions, and boost their city's international profile. Its activities support the achievement of policy objectives as well as major international agreements on urban development and climate change, such as the EU Urban Agenda, the UN Sustainable Development Goals, and the Paris Agreement.



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