

**URBAN  
EU-CHINA**

Innovation Platform on  
Sustainable Urbanisation

## **Strategic Research & Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation**



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Illustration by Julianti Putri Setiawan, NTNU 2019

# EXECUTIVE SUMMARY



Photo by Yin Wong



**“Last year, seven million people died because of pollution in cities. Hence, we are not just dealing with “urban planning” but actually with a matter of life and death. How through cities may we save the planet?”**

*Ólafur Ragnar Grimsson,  
former president of Iceland,  
Chairman of the International Renewable Energy  
Agency’s Global Commission on the Geopolitics of  
Energy Transformation,  
during the 2018 China-EU Sustainable Urbanisation  
Conference “Digital XiongAn: Empowering the Future”  
in Beijing, 12 December 2018.*

This is the first version of the strategic Research & Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation, developed with input from Chinese and European urban stakeholders from public and private sector, academia and civil society. The R&I Agenda was created by the URBAN-EU-CHINA Innovation Platform on Sustainable Urbanisation, as part of Work Package 1 Joint Policy Strategies and Task 1.1 Strategic R&I Agenda and Action Plan.

The R&I Agenda aims to provide a predictable and long-term frame of reference for cooperation between EU and China on sustainable urbanisation, enabling urban decision makers and entrepreneurs to develop, test, validate and implement innovative solutions within four main areas:

- Cities of People & Culture
- Green Cities
- Smart & Innovative Cities
- Collaborative Cities

The first version of the R&I Agenda will form the basis for a series of feedback interviews, surveys, workshops, round table discussions and meetings with urban stakeholders and organisations, to fine-tune the identified challenges, and to translate them into adequate pathways and instruments for implementation and cooperation. The results will be issued in the final version of the R&I Agenda, and released in December 2019.

### Cities of People and Culture

The success of implementing all UN Sustainable Development Goals<sup>1</sup> (SDGs) by 2030 relies on creating people-driven smart sustainable cities and communities for long-term societal trust and acceptance. This will require novel immersive community participation, collaborative governance, and high-quality place-making.

Europe and China have both developed powerful strategies and platforms that help cities and towns place people at the core of urban development, balancing economic transformation, spatial development and cultural identity. They provide help to local authorities to develop visionary ambitions as well as down-to-earth action plans to include heritage in urban transformation processes, to provide attractive and accessible public services and infrastructures, and develop successful local partnerships with industry and other knowledge actors. They also provide support to attract tourism and offer local as well as new residents an attractive place to live and work – for citizens of all ages and origins. In a bigger perspective, such measures help balance urban and rural development.

*We recommend that Europe and China develop and promote joint measures for people-centred cities and communities, with cooperation mechanisms to support mutual learning of the important experiences made in practice.*

### Green Cities

To be truly attractive places for people to live and work, cities need to deliver clean air, clean water, clean energy solution and clean transport methods to their citizens and communities. China and Europe are both developing and testing pathways towards green cities, in which each individual environmental challenge and technology is of high value, and, even more, the integrated assessment, design and management of mitigation and adaptation strategies. In order to create green, liveable and attractive cities in the long-term perspective, it is the mixture of technology, policy and design that is vital for Sino-European cooperation.

*We recommend that China and Europe cooperate more closely on comprehensive and integrated approaches to create green cities and communities, with an integrated approach including environmental, technological, regulatory, social, cultural, economic, spatial and other perspectives.*



Photo by: #Wang

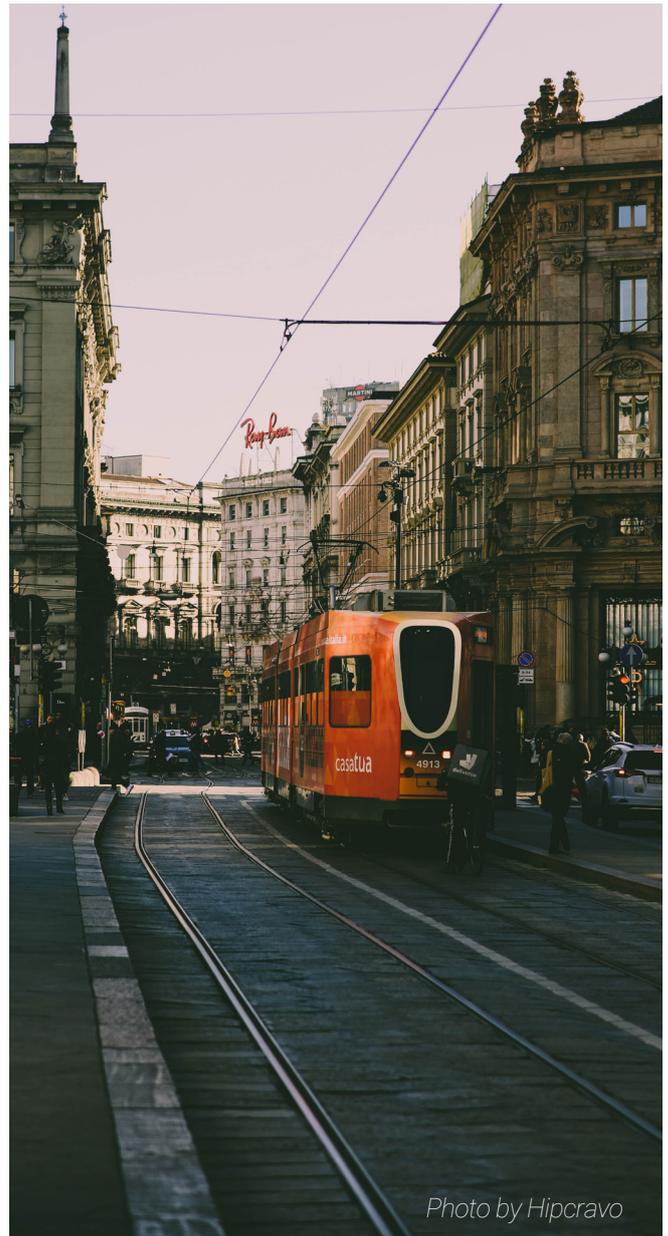
<sup>1</sup> <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

## Smart & Innovative Cities

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*We recommend that Europe and China cooperate to develop successful approaches for smart, innovative cities and communities better and faster. Digital innovation in public sector, participatory approaches and public-private partnerships are needed for cities and communities to develop better urban services and infrastructures, de-risk, become more adaptive to external change and alleviate policy implementation bottlenecks. In short, to deal with any future challenges.*



## Collaborative Innovation

Strategic joint EU-China research and innovation cooperation in sustainable urbanisation is a long-standing priority for both regions, supported by large-scale cooperation programmes such as the EU-China Urbanisation Partnership<sup>2</sup>, strategic policy documents such as EU-China 2020 Strategic Agenda for Cooperation<sup>3</sup>, and EU-China joint funding mechanisms such as the EU-China Co-Funding Mechanism (CFM) for Research and Innovation<sup>4</sup>.

These efforts have resulted in a number of joint projects in the 7th Framework Programme for Research and Technological Development<sup>5</sup> (FP7) and Horizon 2020<sup>6</sup> (H2020), bilateral mechanisms with European Member States<sup>7</sup>, joint calls<sup>8</sup> organised by Joint Programming Initiative Urban Europe with the National Natural Science Foundation of China, and cooperation projects at regional, city and institutional level. Political agreements between cities supported by active dialogue have enabled large-scale flagship projects for urban innovation and entrepreneurship both for established business and young start-ups. Large-scale urban cooperation mechanisms, such as H2020 SCC01 Smart Cities and Communities Lighthouse<sup>9</sup> projects and H2020 SC5 Nature-Based Solutions<sup>10</sup> projects, create 5-year frameworks for innovation and demonstration oriented cooperation between cities, private sector and research in Europe, enabling fast iteration and practice-based learning to create better urban conditions on the ground. The Chinese New Areas would benefit greatly from international cooperation with these large-scale collaborative European demonstration projects to promote sharing of knowledge and resources to address urban, regional, and global issues such as sustainability, city-to-city connectivity, industry links, and city development.

*We recommend that Europe and China cooperate to develop successful approaches for smart, innovative cities and communities better and faster. Digital innovation in public sector, participatory approaches and public-private partnerships are needed for cities and communities to develop better urban services and infrastructures, de-risk, become more adaptive to external change and alleviate policy implementation bottlenecks. In short, to deal with any future challenges.*



Photo by Anastasia Dulgier

<sup>2</sup> Joint Declaration on The EU-China Partnership on Urbanisation (2012): [https://ec.europa.eu/energy/sites/ener/files/documents/20120503\\_eu\\_china\\_joint\\_declaration\\_urbanisation\\_en.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_urbanisation_en.pdf)

<sup>3</sup> European External Action Services EEAS (2013): The EU-China 2020 Strategic Agenda for Cooperation, 23 November 2013: [https://eeas.europa.eu/headquarters/headquarters-homepage/15398/eu-china-2020-strategic-agenda-cooperation\\_ga](https://eeas.europa.eu/headquarters/headquarters-homepage/15398/eu-china-2020-strategic-agenda-cooperation_ga)

<sup>4</sup> EU-China Co-Funding Mechanism (CFM): <http://chinainnovationfunding.eu/eu-china-co-funding/>

<sup>5</sup> FP7 in brief: <https://ec.europa.eu/research/fp7/understanding/fp7inbrief/what-is-en.html>

<sup>6</sup> H2020 homepage: <https://ec.europa.eu/programmes/horizon2020/en>

<sup>7</sup> EURAXESS: <https://euraxess.ec.europa.eu/useful-information>

<sup>8</sup> JPI Urban Europe website: <https://jpi-urbaneurope.eu/calls/sustainable-urbanisation-china-europe/>

<sup>9</sup> European Commission Smart Cities & Communities: <https://ec.europa.eu/inea/en/horizon-2020/smart-cities-communities>

<sup>10</sup> NCPS website: <http://www.ncps-care.eu/?p=2883>



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Photo by Joshua J Cotten



Photo by Paul Dufour



Photo by Yu Kato



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## ACRONYMS AND ABBREVIATIONS

<b>AI</b>	Artificial Intelligence
<b>AIT</b>	Austrian Institute of Technology
<b>BRI</b>	Belt and Road Initiative
<b>CAFA</b>	China Central Academy of Fine Arts
<b>CAS</b>	Chinese Academy of Sciences
<b>CASS</b>	China Academy of Social Sciences
<b>CAUPD</b>	China Academy of Urban Planning and Design
<b>CCUD</b>	China Center for Urban Development
<b>CFM</b>	Co-Funding Mechanism
<b>CIUC</b>	China Intelligent Urbanization Collaboration Co-creation Center for High Density Region
<b>CRAES</b>	Chinese Research Academy of Environmental Sciences
<b>CSO</b>	Civil Society Organisation
<b>CUWC</b>	Central Urban Work Conference
<b>DG</b>	Directorate General of the European Commission
<b>DSO</b>	Distribution System Operator
<b>EC</b>	European Commission
<b>EC DG ENV</b>	European Commission Directorate General for Environment
<b>EEA</b>	European Environment Agency
<b>ENSCC</b>	ERA-NET Co-fund Smart Cities and Communities
<b>ENSUF</b>	ERA-NET Co-fund Smart Urban Futures
<b>ERA-NET</b>	European Research Area Network
<b>EU</b>	European Union
<b>EUCCC</b>	European Union Chamber of Commerce in China
<b>EU MS WG</b>	European Union Member States Working Group
<b>FFG</b>	Austrian Research Promotion Agency
<b>FP7</b>	The EU 7 th Framework Programme for Research and Technological Development
<b>FUA</b>	Functional Urban Area
<b>GHG</b>	Greenhouse gas
<b>H2020</b>	Horizon 2020 – the EU Framework Programme for Research and Innovation
<b>ICD</b>	Innovation Cooperation Dialogue
<b>ICT</b>	Information and Communication Technologies
<b>IOER</b>	Leibniz Institute of Ecological Urban and Regional Development
<b>IPR</b>	Intellectual Property Rights
<b>ISINNOVA</b>	Institute of Studies for the Integration of Systems
<b>JPI UE</b>	Joint Programming Initiative Urban Europe
<b>JRC</b>	Joint Research Centre

<b>MIIT</b>	Ministry of Industry and Information Technology
<b>MoE</b>	Ministry of Education
<b>MoF</b>	Ministry of Finance
<b>MoHURD</b>	Ministry of Housing and Urban-Rural Development
<b>MoST</b>	Ministry of Science and Technology
<b>NBS</b>	Nature-Based Solutions
<b>NDRC</b>	National Development and Reform Commission
<b>NSFC</b>	National Natural Science Foundation of China
<b>NTNU</b>	Norwegian University of Science and Technology
<b>OA</b>	Open Access
<b>PED</b>	Positive Energy District
<b>PPP</b>	Public-private partnership
<b>PPPP</b>	Public-private-people partnership
<b>R&amp;I</b>	Research and Innovation
<b>RTDI</b>	Research, Technological Development and Innovation
<b>SCC</b>	Smart Cities and Communities
<b>SCC01</b>	Smart Cities and Communities solutions integrating energy, transport, ICT sectors through lighthouse (large scale demonstration - first of the kind) projects under H2020
<b>SDG</b>	Sustainable Development Goal
<b>SET-Plan</b>	The European Strategic Energy Technology Plan
<b>SICA</b>	Specific International Cooperation Activities
<b>SME</b>	Small and medium-sized enterprise
<b>SRIA</b>	Strategic Research and Innovation Agenda
<b>STI</b>	Science, Technology and Innovation
<b>UEC</b>	URBAN-EU-CHINA Innovation Platform on Sustainable Urbanisation
<b>UERA</b>	Urban Europe Research Alliance
<b>UIA</b>	Urban Innovative Actions
<b>ULL</b>	Urban Living Lab
<b>UN</b>	United Nations
<b>UNDESA</b>	United Nations Department of Economic and Social Affairs
<b>UNDP</b>	United Nations Development Programme
<b>UNNC</b>	University of Nottingham Ningbo China
<b>UN NUA</b>	United Nations New Urban Agenda
<b>URBACT</b>	The European Exchange And Learning Programme Promoting Sustainable Urban Development
<b>UPSC</b>	Urban Planning Society of China
<b>WHO</b>	World Health Organisation





Photo by Hanny Naibaho



Photo by Jilbert Ebrahimi



# 01

## INTRODUCTION

**"The key is looking at the requirements for our future cities"**

*- Ricky Tsui,  
R&D Director in East Asia, ARUP,  
Online interview with NTNU,  
30 November 2017*

### About URBAN-EU-CHINA

The URBAN-EU-CHINA Innovation Platform on Sustainable Urbanisation is funded by the European Horizon 2020 programme, Grant Agreement number 733571. URBAN-EU-CHINA aims to develop a robust, evidence-driven bottom-up approach to complement the existing top-down EU-China strategic approach to sustainable urbanisation. This is accomplished via a coordinated series of actions including: a strategic research and innovation agenda, scoping and assessment, networking events, peer-to-peer exchanges, benchmarking and performance monitoring, and joint demonstration projects. By creating tighter coupling between city-level, national, and supra-national programmes, planning, policies, and projects, URBAN-EU-CHINA aspires to yield a significant increase in cooperative EU-China research and innovation activities.

To deliver its objectives, the project:

Develops and promotes Joint Policy Strategies for EU-China cooperation on sustainable urbanisation;

Creates a Nursery of Joint Projects, from a broad range of low-threshold to a few high-performance projects;

Promotes Brokerage of City-Industry-Science Partnerships using virtual and face-to-face meeting places.

## The URBAN-EU-CHINA Partners

### Norwegian University of Science and Technology (NTNU)<sup>11</sup>



NTNU is one of the largest universities in the Nordic countries, with 14 faculties, 70 departments and divisions, 7000 staff and 40000 students. The university has good relations with industry and paves the way for start-up companies and entrepreneurs, and uses its cross-disciplinary competency and scientific profile in technology and the natural sciences to meet global challenges, summarized by its vision: Knowledge for a better world. NTNU has worked with China on cultural heritage and urban regeneration for nearly 30 years (research, innovation and education), and opened its office in Brussels in 2015. NTNU leads, amongst others, the URBAN-EU-CHINA platform<sup>12</sup>, the EERA Joint Programme on Smart Cities<sup>13</sup>, and the H2020-funded smart city lighthouse project +CityxChange<sup>14</sup>. Three out of four Strategic Research Areas<sup>15</sup> at NTNU – Sustainability, Energy and Health – contribute directly to sustainable urbanisation, delivering creative innovations with far-reaching social and economic impact in close collaboration with cities, industries, authorities and civil society.

### Leibniz Institute of Ecological Urban and Regional Development (IOER)<sup>16</sup>



Leibniz-Institut für ökologische Raumentwicklung

The Leibniz Institute of Ecological Urban and Regional Development (IOER) is an establishment of the Leibniz Association for spatially oriented theme-based research focusing on ecological aspects of sustainable development. Our concern is the scientific basis for the sustainable development of cities and regions in the national and international context. They investigate how cities and regions can be developed with reasonable effort to offer the population the greatest possible quality of environment and life and to provide nature with far-ranging possibilities to develop that are resource-efficient and offer adequate safeguards against environmental risks. IOER pays particular attention to the global and regional challenges that climate and demographic change pose for urban and regional development. Our work focuses on interactions between society and the natural environment and the questions they raise. IOER's research sets out to investigate the global and regional challenges facing cities and regions and their implications for spatial and environmental development. They set the following research priorities:

- Landscape Change and Management
- Resource Efficiency of Settlement Structures
- Environmental Risks in Urban and Regional Development
- Monitoring of Settlement and Open Space Development
- Economic Aspects of Ecological Urban and Regional Development
- Ecological and Revitalizing Urban Transformation

<sup>11</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>12</sup> URBAN-EU-CHINA website: <http://urban-eu-china.eu>

<sup>13</sup> EERA Website: <https://www.eera-set.eu/eera-joint-programmes-jps/list-of-jps/smart-cities/>

<sup>14</sup> +CityxChange website: <https://cityxchange.eu/>

<sup>15</sup> NTNU Strategic Research Areas 2014–2023: <https://www.ntnu.edu/research/strategicareas>

<sup>16</sup> <http://www.urban-eu-china.eu/en/partners/>

## Institute of Studies for the Integration of Systems (ISINNOVA)<sup>17</sup>



ISINNOVA is an independent Italian research institute supporting international, national and local public bodies for the analysis, the design, the implementation and the evaluation of sustainable policies in the fields of energy, environment, transport and mobility, urban planning, and knowledge society. Founded in 1971, for more than four decades, ISINNOVA has supplied expertise and solved complex problems for a variety of public and private organisations, and notably for the European Commission. ISINNOVA has substantial experience in the management of and participation in EU-funded projects in FP4, FP5, FP6, FP7 and Horizon 2020 programmes, and has a well-established network of alliances currently active in the Europe and beyond. ISINNOVA has worked extensively in the field of policy impact assessment, particularly with regard to socio-economic impacts and the development and application of forward-looking analysis (FLA) methods and tools.

## Advancity<sup>18</sup>



ADVANCITY was one of few competitiveness clusters in France dedicated to sustainable cities and mobility. The members of Advancity's ecosystem (SMEs, business leaders, academic partners, local governments and investors) investigate the following innovative fields: urban planning, driving, decision support systems, transportation systems, accessibility, mobility, sustainable buildings and infrastructures, Urban Technologies (water, waste, atmosphere...) and renewable energies including photovoltaics. ADVANCITY provides the following

support and services for its members and partners: help in research project management regarding the sustainable city area; project presentations to public and private funding organizations; contribution to the design of the French offer towards sustainable cities.

Advancity was an original project partner, but was dissolved in 2018 and replaced as an URBAN-EU-CHINA partner by Cap Digital.

## Cap Digital<sup>19</sup>



Cap Digital was created as a result of a public policy for the development of economic sectors with strong growth potential located in the same geographical area. Since 2006, the cluster has been implementing the Paris Region's strategy for digital content and services, supporting innovative SMEs in this field. In May 2018, Cap Digital took over Advancity, and has thus enlarged its ecosystem with new members active in four domains: eco-technologies, eco-mobility, eco-construction and eco-city. By gathering stakeholders of digital transformation and energy transition, Cap Digital is now a European cluster of future and sustainable cities. Their more than 1000 members are primarily innovative SMEs but also major universities, higher education establishments, research labs, corporations focused on a specific technology-driven industry and investors. To achieve this, they offer services in support of innovation, acceleration, digital transformation and ecological transition.

Cap Digital replaced Advancity as an URBAN-EU-CHINA partner in Autumn 2018.

<sup>17</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>18</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>19</sup> <http://www.urban-eu-china.eu/en/partners/>

## Austrian Research Promotion Agency (FFG)<sup>20</sup> FFG

The Austrian Research Promotion Agency (FFG) is the national funding agency for industrial research and development in Austria. As a "one-stop shop" offering a diversified and targeted programme portfolio, the FFG gives Austrian businesses and research facilities quick and uncomplicated access to research funding. International cooperation is an integral part of FFG's objectives and strategies to enhance the competitiveness of Austrian companies and R&D entities. The tasks of the FFG are stipulated follows:

- To manage and finance research projects in the business and science sectors, impulse programmes for the economy and research facilities, and networks fostering cooperation between science and industry.
- To manage cooperative programmes and projects with the EU and other European and international partners.
- To represent Austria's interests at relevant European and international institutions on behalf of the Austrian government.
- To provide consultation and support to intensify Austria's involvement in European programmes, especially in the EU Framework Programme for Research, Technology and Innovation and the Framework Programme for Competitiveness and Innovation.
- To provide support and strategy development services for decision-makers in the Austrian innovation system.
- To improve public awareness of the importance of R&D.

## Austrian Institute of Technology (AIT)<sup>21</sup>



AIT is Austria's largest non-university research institute and takes a leading position in the Austrian innovation system in the areas of Energy, Mobility, Health & Environment as well as Safety & Security and a key role in Europe as the RTO focusing on the key infrastructure topics of the future. AIT's experts involved in this assignment are working for

the unit focusing on sustainable development of cities and regions in the Center for Energy. AIT's unit focusing on sustainable development of cities and regions has built up an extensive network and project portfolio in recent years, as vice coordinator of the Joint Program Smart Cities of the European Energy Research Alliance<sup>22</sup> (EERA) and active members in the European Innovation Partnership on Smart Cities and Communities<sup>23</sup> (EIP SCC) as well as the SET plan Temporary working group 3.2 "Smart Cities and Communities". In addition, AIT's Center for Energy is partner in a number of Smart City projects on a national, European and international level (e.g. TRANSFORM, SCIS, CITYKEYS, Smarter Together, RUGGEDISED<sup>24</sup> etc.).



## EUROCITIES<sup>25</sup>

EUROCITIES is the network of major European cities. Founded in 1986, the network brings together the local governments of over 130 of Europe's largest cities that govern 130 million citizens in 35 European countries. EUROCITIES represents the interests of its members and engages in dialogue with the European institutions across a wide range of policy areas affecting cities. Through a wide range of forums, working groups, projects and events, EUROCITIES provides a platform for promoting the instrumental role of local governments in multilevel governance and shaping the focus of EU legislation in a way which allows city governments to tackle strategic challenges at local level. EUROCITIES works across a wide range of urban policy areas: these include climate change, energy and environment, mobility, social affairs, economic development and cohesion policy, culture and the knowledge society. EUROCITIES also has extensive experience in coordinating and participating to EU-funded projects designed to facilitate exchange between cities, policy-makers and researchers.

<sup>21</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>22</sup> EERA homepage: <https://www.eera-set.eu/eera-joint-programmes-jps/list-of-jps/smart-cities/>

<sup>23</sup> EIP SCC homepage: <https://eu-smartcities.eu/>

<sup>24</sup> AIT website, projects: <https://www.ait.ac.at/en/research-fields/smart-and-resilient-cities/projects/>

<sup>25</sup> <http://www.urban-eu-china.eu/en/partners/>

## European Union Chamber of Commerce in China (EUCCC)<sup>26</sup>



The European Union Chamber of Commerce in China (EUCCC) was founded in 2000 by 51 member companies that shared a goal of establishing a common voice for the various business sectors of European businesses operating in China. It is a members-driven, non-profit, fee-based organisation with a core structure of 25 working groups and 7 fora representing European business in China. The European Chamber now has nearly 1,600 members in 7 chapters operating in 9 cities: Beijing, Nanjing, Shanghai, Shenyang, South China (Guangzhou and Shenzhen), Southwest China (Chengdu, Chongqing) and Tianjin. The Chamber is recognised by the European Commission and the Chinese Authorities as the official voice of European business in China. The European Chamber supports member companies' government affairs advocacy efforts; helps them understand policy and market conditions and expand network in China.

## China Academy of Urban Planning and Design (CAUPD)<sup>27</sup>



CAUPD is a national institution directly positioned under the Ministry of Housing and Rural Development (MoHURD), the entity that oversees all urban development in the country. Established in 1952, CAUPD is China's leading urban planning agency and policy advisor, spearheading the formulation of new urban policies and providing research and technical consultancy on all aspects of the urbanization process. CAUPD's expertise is broad and multi-disciplinary, spanning the fields of

urban development, regional and master planning, civil engineering, architectural design, heritage preservation, and green city planning. As the sole national urban planning institute of its kind, CAUPD has an exceptionally strong and vibrant network of partners and affiliations. CAUPD produces approximately 90% of China's urban master plans and as such, maintains an unparalleled relationship with various levels of the Chinese government. At the highest levels, these networks include but are not limited to: the Ministry of Housing and Urban-Rural Development, the National Development and Reform Commission, the Ministry of Science and Technology, the Ministry of Transport, the Ministries of Water and Land Resources, and the Ministry of Agriculture.

## China Centre for Urban Development (CCUD)<sup>28</sup>



CCUD is a public institution under the National Development and Reform Commission (NDRC). Since its establishment in 1998, it has been participating in writing policy documents and providing policy consultancy on urbanization for the Central Government and relevant departments of the State Council; providing guidance to pilot cities and towns for urban development across China; formulating hundreds of socio-economic development plans, spatial development plans and land use plans for local governments; building financial platforms to serve urbanization, urban development and smart city construction; organizing multiple high-level international forums on urbanization and urban development; and building itself as national top think tank on new urbanisation.

<sup>26</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>27</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>28</sup> <http://www.urban-eu-china.eu/en/partners/>

## Tongji University, China Intelligent Urbanization Co-creation Center for High Density Region (TJU-CIUC)<sup>29</sup>



China Intelligent Urbanization Collaboration Co-creation Center for High Density Region (TJU-CIUC) is initiated by Tongji University and jointly established by Tongji University, Fudan University, Ministry of Housing and Urban-Rural Development of China and Chinese Society for Urban Studies. A multi-disciplinary, collaborative and technologically integrative centre, TJU-CIUC aims to strike the urbanisation development goals of intensiveness, intelligence, green and low carbon. Through institutional innovation, the centre collaborates with research institutes, local authorities and enterprises related with urbanisation in the Yangtze River Region to support this region's urbanisation, and in the process, to forge TJU-CIUC as the top research power of intelligent urbanization in China. TJU-CIUC's scope of activities include: solving crucial issues in intelligent urbanisation, nurturing top talents in the sphere of urbanisation, functioning as a world class intelligent urbanisation knowledge pool and providing theoretical foundations, decision-making consultancy, and technical support for China's new urbanisation.

## University of Nottingham Ningbo (UNNC)<sup>30</sup>



Described by the Times Good University Guide 2013 as 'the nearest Britain has to a truly global university', the University of Nottingham has award-winning campuses in the UK, China and Malaysia and hosts a global academic community in all three countries. UNNC was the first Sino-foreign university established in China with the full support of the Chinese Ministry of Education. UNNC supports a thriving research environment and has been awarded funding from Chinese and international agencies. There are also significant knowledge exchange initiatives with academics working closely with companies such as Wahaha<sup>31</sup>(杭州娃哈哈集团有限公司), the New Hope Group<sup>32</sup>(新希望集团有限公司) and the Ningbo Academy of Smart City Development<sup>33</sup>(宁波市智慧城市规划标准研究院). Subsequently, UNNC is an ideal partner to support EU-China research collaborations due to our extensive knowledge and practical experiences of developing international research agendas as a UK university based within mainland China.

<sup>29</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>30</sup> <http://www.urban-eu-china.eu/en/partners/>

<sup>31</sup> Wahaha website: <https://en.wahaha.com.cn/>

<sup>32</sup> New Hope Group website: <http://en.newhopegroup.com/>

<sup>33</sup> Ningbo Academy of Smart City Development website: <http://www.nbascd.org/> (in Chinese)

## Task 1.1 Strategic Research and Innovation Agenda

In URBAN-EU-CHINA Task 1.1 Strategic R&I Agenda and Action Plan, NTNU and CCUD, in cooperation with all consortium partners, will create a Strategic R&I Agenda that identifies, prioritises and structures the main EU-CHINA cooperation activities on sustainable urbanisation, for the 3-year lifetime of the H2020-funded URBAN-EU-CHINA project as well as the long-term sustainability of the EU-China Innovation Platform on Sustainable Innovation it creates.

This is the first version of the strategic Research & Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation, developed with input from Chinese and European urban stakeholders from public and private sector, academia and civil society.

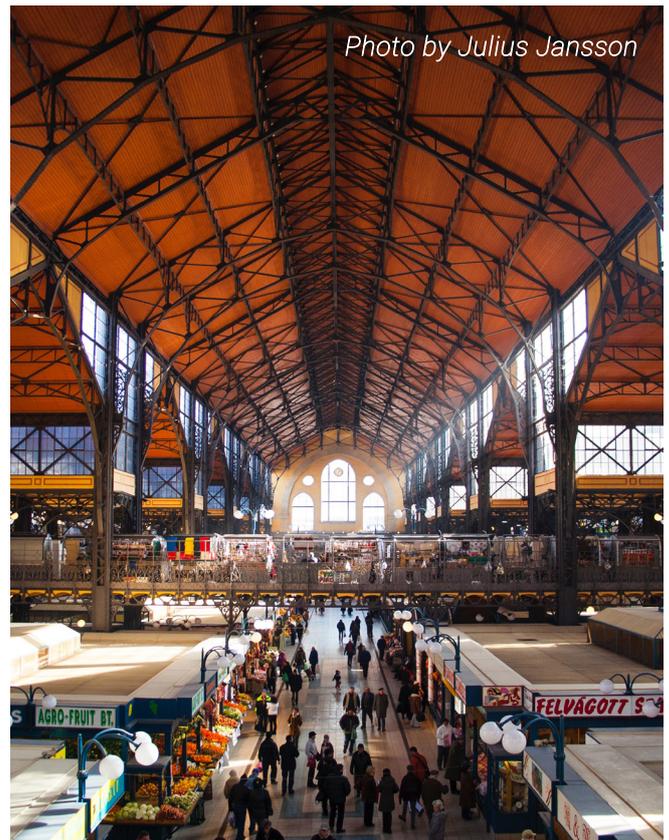
The R&I Agenda aims to provide a predictable and long-term frame of reference for cooperation between EU and China on sustainable urbanisation, enabling urban decision makers and entrepreneurs to develop, test, validate and implement innovative solutions within four main areas:

- Cities of People & Culture
- Green Cities
- Smart & Innovative Cities
- Collaborative Innovation

The first version of the R&I Agenda will form the basis for a series of feedback interviews, surveys, workshops, round table discussions and meetings with urban stakeholders and organisations, to fine-tune the identified challenges, and to translate them into adequate pathways and instruments for implementation and cooperation. The results will be

issued in the final version of the R&I Agenda, and released in December 2019.

The priorities of the UEC R&I Agenda were identified on the basis of an analysis of European, Chinese and EU-China urbanisation policy documents, interviews with stakeholders and experts, outcomes of partner meetings and workshops, information shared by Chinese and European stakeholders and invited speakers at events, and data collection and analysis from URBAN-EU-CHINA reports.



## Methods

### Analysis of Policy Documents

Analysis of European, Chinese and EU-China urbanisation policy documents forms a core part of the UEC R&I Agenda. European, Chinese, Sino-European and UN policy documents were analysed for measures to support EU-China cooperation on sustainable urbanisation. From these documents, we selected quotes and references to strategic themes that show great promise for EU-China cooperation, supported by scientific articles. EU policy strategies, bilateral agreements and joint statements between Europe and China increasingly emphasize urbanisation issues, technology and innovation to achieve smart, sustainable, and inclusive growth. The most important documents that were selected are described in the chapter on Cooperative Innovation.



*Taken from Jopwell*

### Stakeholder interviews

URBAN-EU-CHINA partners performed interviews with consortium partners, Advisory Board members and other key stakeholders, in Chinese and English, between May 2017 and June 2018. Their answers were vital in structuring the key challenges and opportunities in EU-China cooperation on urbanisation, and have informed the R&I Agenda. The interview-guide can be found in the annex.



*Photo by Md Duran*

## URBAN-EU-CHINA Workshops & Events

Project Kick-Off: URBAN-EU-CHINA project launch 28 March 2017, Brussels, Belgium	2017 EU-China Forum on Sustainable Urban Development 19-20 March 2017, Putian, China
Nordic Edge Expo China Session: Sustainable Urban China 27 September 2017, Stavanger, Norway	Dialogue Meeting: Industry-City-Science Partnerships for Sustainable Urbanisation 29 March 2017, Brussels, Belgium
EIP SCC Marketplace Breakfast Meeting 12 October 2017, Brussels, Belgium	Foresight Workshop: How do imagine Chinese cities in 2050? 10 October 2017, Brussels, Belgium
Foresight Workshop: Smart & Sustainable Urban Futures 15 November 2017, Barcelona, Spain	2017 China-EU Conference on Sustainable Urbanisation 25-26 October 2017, Beijing, China
Trans-URBAN-EU-CHINA Kick-off meeting 22-23 January 2018, Dresden Germany	Joint Workshop on Sustainable and Green Urbanisation 21-22 November 2017, Zhongshan, China
UEC conference: Open innovation as a driving force for smart sustainable cities Roundtable Seminar 18 April 2018, Beijing China	9th World Urban Forum:JPI-UEC joint Session: The value of City-City Partnerships for Implementing the New Urban Agenda 07-13 February 2018, Kuala Lumpur Malaysia
2018 EU-China forum on sustainable urban development 18 May 2018, Tianjin China	The Sino-German Urban Development & Cultural Innovation Seminar 26th April 2018, Beijing China
Foresight Workshop: A Research & Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation 2019-2029 11 September 2018, Beijing, China	Urban Living Labs Workshop: Testing Grounds for Urban Innovation and Transformation 04 September 2018, Beijing, China
Nordic Edge Expo Norway-China Green Smart City Forum: From Green Building to Green Smart City 25 September 2018, Stavanger, Norway	Industry Workshop on New Type of Urbanisation: Innovation without Barriers 11 September 2018, Beijing, China
URBAN-EU-CHINA EU-China City-City Partnership Awards Ceremony 12 December 2018 Beijing China	2018 China-EU Conference on Sustainable Urbanisation: Digital XiongAn Empowering the Future 12 December 2018 Beijing China
Cooperation with the European Innovation Partnership on Smart Cities and Communities (EIP SCC)	Cooperation with the EU Member States Science and Innovation Counsellors' (informal) Working Group on Urbanisation
Cooperation with the Joint Programming Initia- tive Urban Europe (JPI UE)	Database of success stories of EU-China cooperation on sustainable urbanisation

### **2017 EU-China Forum on Sustainable Urban Development**

19-20 March 2017, Putian, China

The theme of the event was cooperation, innovation and practice. Through policy dialogues, panel debates and experience sharing, the forum aimed to showcase the achievements under the EU-China Urbanisation Partnership, and promote the match-making of new pairing cities and cooperation programs towards sustainable urban development and common prosperity of China and the EU.

### **Project Kick-Off: URBAN-EU-CHINA Project Launch**

28 March 2017, Brussels, Belgium

UEC invited policy makers, members of the scientific community, industry representatives, European Commission representatives and other experts to its European project launch followed by a networking cocktail.

### **Dialogue Meeting: Industry-City-Science Partnerships for Sustainable Urbanisation**

29 March 2017, Brussels, Belgium

UEC organized a dialogue meeting with industry representatives, DG Research and Innovation, and the EU Delegation to China and Mongolia. The participants discussed how industry might contribute to sustainable urbanisation in cooperation between Europe and China.

### **Nordic Edge Expo China Session: Sustainable Urban China**

27 September 2017, Stavanger, Norway

NTNU hosted a session for Nordic stakeholders who want to get more engaged in innovation-driven urbanisation in China, during the Nordic Edge Expo in Stavanger, Norway. Nordic Edge Expo is one of Europe's most important arenas for knowledge exchange and inspiration to creators of smarter businesses, cities and societies. During the China session, the UEC Innovation Platform was presented, and the latest updates on Chinese urban policy strategies, corporation visions on smart city technology development, and funding opportunities, discussed.

### **Foresight Workshop:**

#### **How do imagine Chinese cities in 2050?**

10 October 2017, Brussels, Belgium

UEC partner ISINNOVA organized the first Advisory Board meeting with Foresight Workshop, using scenarios as background to discuss urban trends evolutions as well as ways of monitoring them.

### **EIP SCC Marketplace Breakfast Meeting**

12 October 2017, Brussels, Belgium

More and more collaborations between European and Chinese cities have been established in recent years. However, many collaborations just stay on the level of delegation visits, high-level meetings, information exchange, and have great difficulty in leading to concrete projects. Faced with such a complicated situation, how to improve the quality of collaboration in practice will be one of the most important topic for further EU-China cooperation.

UEC partner AIT organised a breakfast table on this challenge during the EIP SCC General Assembly, to

discuss with interested municipal decision makers how the platform can help to facilitate EU-China collaboration with the support of EIP SCC.

### **2017 China-EU Conference on Sustainable Urbanisation** 25-26 October 2017, Beijing, China

UEC partner CAUPD organized this conference to commemorate the five-year anniversary of the EU-China Urbanisation Partnership<sup>34</sup>, which was agreed in May 2012 by President Barroso and Premier Li Keqiang. The conference played an important role in the implementation of both the Partnership and the Ministry of Science and Technology's Horizon 2020 Co-Funding Mechanism as a means of facilitating future discussion, collaboration, and mutual learning between countries.

The XiongAn New Area was featured as a future city in which innovation-driven development, ecological protection and people's well-being will be prioritized. The construction of the XiongAn New Area is of national significance and will support similar initiatives planned for the Shenzhen Economic Zone, and the Shanghai Pudong New Area.

The conference brought together urban planners, policy makers, industry experts, practitioners, and scholars from around the world to share their insights, experience and solutions to the Innovation-Driven Development in New Areas. Delegates included representatives from the European Union and Chinese governments, European city mayors, distinguished urbanisation experts, and key decision makers who

discussed innovation-led recommendations for our future approach to sustainable urbanisation, EU-China joint strategies, co-funding, as well as exchange of knowledge and facilitation of science-city-industry partnerships.

### **Foresight Workshop:**

#### **Smart & Sustainable Urban Futures**

15 November 2017, Barcelona, Spain

NTNU and ISINNOVA hosted a foresight workshop during the Smart City Expo in Barcelona, in cooperation with the EERA Joint Programme Smart Cities (European Energy Research Alliance).

With many European and Chinese cities staking out bold city visions for 2030 and 2050, and rolling out ambitious demonstration projects on smart services and infrastructures, what is the next step in city-driven research and innovation:

- Which challenges keep city planners up at night?
- What is it like to live and work in a perfect, smart sustainable city?
- What strategies and policies are key to developing opportunities for smart sustainable cities? Why are we not there yet, what is holding us back?

### **Joint Workshop on Sustainable and Green Urbanisation**

21-22 November, Zhongshan, China

The China Academy of Social Sciences (CASS) and the Joint Programming Initiative Urban Europe (JPI UE) organized a joint workshop on sustainable

<sup>34</sup> EU-China Partnership on Urbanisation (2012): [https://eeas.europa.eu/delegations/sierra-leone/15425/eu-china-partnership-urbanisation-factsheet\\_ga](https://eeas.europa.eu/delegations/sierra-leone/15425/eu-china-partnership-urbanisation-factsheet_ga)  
For 2017 see: [www.cud.org.cn/2017-03-28/115190231.html](http://www.cud.org.cn/2017-03-28/115190231.html)

and green urbanisation with the aim to facilitate exchange between Chinese and European experts on sustainable urbanisation. Particular emphasis was given to questions such as how to design and develop urban areas to achieve a higher sustainability and resilience and how to accelerate such urban transition processes.

The workshop framed the main thematic perspective sustainable and green urbanisation and was set to discuss three topics in a succession of panel sessions:

- Structural adjustment and new urban economies
- Climate change and green development
- Smart city and big data

#### **Trans-URBAN-EU-CHINA Kick-off meeting<sup>35</sup>**

22-23 January 2018, Dresden Germany

The TRANS-URBAN-EU-CHINA project, funded by the European Union, was launched at a two-day conference in Dresden at the end of January. Under the leadership of the Leibniz Institute of Ecological Urban and Regional Development (IOER), partners from Europe and China are investigating ways of making cities more socially integrative and sustainable through research-based transition practices in selected cities, involving urban authorities, real estate developers, public service providers, citizens and other key urban stakeholders.

#### **9th World Urban Forum: JPI-UEC joint Session: The value of City-City Partnerships for Implementing the New Urban Agenda<sup>36</sup>**

07-13 February 2018, Kuala Lumpur Malaysia

URBAN-EU-CHINA and JPI Urban Europe co-organised a session at UN-Habitat's World Urban Forum 9 in Kuala Lumpur. The session emphasised the role of city-city partnerships to achieve UN's Sustainable Development Goals<sup>37</sup> and to translate UN-Habitat's New Urban Agenda<sup>38</sup> into local contexts. Besides presenting cases of EU-China collaboration, the interactive discussions with the audience brought important strategic insight into the potential of city partnerships for sustainable development.

#### **UEC conference: Open innovation as a driving force for smart sustainable cities Roundtable Seminar**

18 April 2018, Beijing China

NTNU and CAUPD co-organised a roundtable seminar during the delegation of the Norwegian Ministry of Research and Education to China. Over 200 participants presented and discussed how to create smart sustainable cities as driving forces towards a low carbon future, and emphasise the importance of Sino-Norwegian cooperation to create an open innovation framework with systemic design, collaborative technologies and community-centred approaches in cities. Furthermore, the seminar recommended the development of a Sino-Norwegian centre on smart sustainable cities to intensify these commitments and ensure they can be scaled up, replicated and transferred research and innovation, education and capacity building.

#### **The Sino-German Urban Development & Cultural Innovation Seminar**

26th April 2018, Beijing China

<sup>35</sup> More info of the kick-off meeting on [http://transurbaneuchina.eu/fileadmin/user\\_upload/tuec/files/20180129\\_PR\\_IOER\\_Project-launch\\_Trans-Urban-EU-China\\_engl.pdf](http://transurbaneuchina.eu/fileadmin/user_upload/tuec/files/20180129_PR_IOER_Project-launch_Trans-Urban-EU-China_engl.pdf)

<sup>36</sup> <http://www.urban-eu-china.eu/en/urban-eu-china-session-at-world-urban-forum-9/>

<sup>37</sup> UN Sustainable Development Goals: <https://sustainabledevelopment.un.org/?menu=1300>

<sup>38</sup> UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English-With-Index-1.pdf>

The seminar on "E-Culture and Arts for Intelligent Cities", hosted by the China Central Academy of Fine Arts (CAFA) and CAUPD, invited twelve experts and scholars from China and Germany. The scholars discussed challenges regarding urbanisation processes and administration of cultural innovation in the digital era. During the rapid economic and urban development in China, digital technologies could connect culture and cities with significant value and potential.

#### **2018 EU-China Forum on Sustainable Urban Development**

18 May 2018, Tianjin China

The China Centre of Urban Development (CCUD) of the National Development and Reform Commission (NDRC) organized the fourth EU-China Forum on Sustainable Urban Development, back to back with the EU-China Intelligent Technology Innovation Summit, in Tianjin. More than 300 city representatives, experts, high-tech corporate leaders and media elites both from China and Europe participated at the forum and exchanged ideas on technological innovation, smart cities and related topics.

During the forum, a group of EU-China city pairings and joint projects were announced and confirmed by a signing ceremony. Tianjin was announced as the first EU-China living lab was officially announced during the forum.

UEC partners EUCCC and CCUD co-organised an EU-China City-Industry Round-table Dialogue to facilitate communication between Chinese cities and European

companies. City-to-industry cooperation will continue to play an important role in urbanisation, particularly the development of new zones and districts, which will also help the city to upgrade industrial structure and resources.

Afterwards, additional UEC partners EUR, AIT, IOER, TJU-CIUC, CAUPD, UNNC and NTNU organised a roundtable dialogue with representatives from 7 Chinese Cities Tianjin, Jiaxing, Foshan, Huangshi, Changbaishan, Hangzhou, and Chengde, to document and discuss their main challenges and concerns regarding EU-China cooperation, and their expectations towards URBAN-EU-CHINA.

#### **Urban Living Labs Workshop: Testing Grounds for Urban Innovation and Transformation**

04 September 2018, Beijing, China

Urban Living Labs (ULL) are testing grounds for innovation and transformation in a real-world environment with multiple stakeholders. They can play an essential role in developing new solutions, and applying them on a broader basis. TRANS-URBAN-EU-CHINA, JPI Urban Europe and URBAN-EU-CHINA co-organised an urban living labs workshop with 30 experts from research institutions, city network organisations, and governmental organisations. The goal was to create a common understanding of ULLs as a method, their potential benefits, and the requirements and framework conditions to support the operationalisation of ULLs in the Chinese context. The workshop allowed the participants to learn from successful ULL applications and identify the benefits, aims and benefits of implementing ULLs in China.

### **Foresight Workshop: A Research & Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation 2019-2029**

11 September 2018, Beijing, China

UEC organized its third Foresight Workshop with 35 participants from China and Europe, to discuss their experiences and give input to the Research and Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation. During the workshop, the participants discussed transition pathways that could connect long-term visions with the operational realities of Chinese and European cities, and define possible targets, enablers, challenges, instruments and success criteria. The target group for this Foresight Workshop consisted of urban experts from public and private sector with experience in cooperation between Europe and China. The workshop was held in English but with possibility for some groups to discuss in Chinese. The workshop adopted the Knowledge Café<sup>39</sup> methodology to engage the participants in creative and inspirational conversation leading to wiser and more collectively informed proposals.

### **Industry Workshop on New Type of Urbanisation: Innovation without Barriers**

11 September 2018, Beijing, China

Around 120 policy makers, national authorities, industries, cities, academia, civil society and other stakeholders from China and Europe were invited to the Industry Workshop hosted by EUCCC and CAUPD, with keynote speeches on the role of industry in sustainable urbanisation, the manner in which public-private partnerships can

facilitate this, and thematic dialogues with on-the-ground examples and experiences by Chinese and European experts.

### **Nordic Edge Expo Norway-China Green Smart City Forum: From Green Building to Green Smart City**

25 September 2018, Stavanger, Norway

NTNU co-organised a seminar for Nordic and Chinese stakeholders who want to get more engaged in green and smart innovation-driven urbanisation, during the Nordic Edge Expo. The session was organised in close cooperation with municipalities and city administrations to promote solutions for smarter cities and communities.

### **2018 China-EU Conference on Sustainable Urbanisation: Digital XiongAn Empowering the Future**

12 December 2018 Beijing China

The construction of the XiongAn New Area is of national significance and will support similar initiatives planned for the Shenzhen Special Economic Zone, and the Shanghai Pudong New Area. CAUPD is responsible for developing the Master Plan for XiongAn New Area and is working on designing the digital planning platform for XiongAn New Area. With a theme of Digital XiongAn, Empowering the Future, the conference aimed to build on and continue the previous achievements of the EU-China Urbanisation Partnership<sup>40</sup>, which has been agreed in May 2012 by President Barroso and Premier Li Keqiang.

The Conference was organized by CAUPD, and supported by Urban Planning Society of China (UPSC) and URBAN-EU-CHINA, with special support from the Delegation of the European Union to China.

<sup>39</sup> Knowledge Café: <https://knowledge.cafe/knowledge-cafe-concept/>

<sup>40</sup> EU-China Partnership on Urbanisation (2012): [https://eas.europa.eu/delegations/sierra-leone/15425/eu-china-partnership-urbanisation-factsheet\\_ga](https://eas.europa.eu/delegations/sierra-leone/15425/eu-china-partnership-urbanisation-factsheet_ga)  
For 2017 see: [www.cud.org.cn/2017-03-28/115190231.html](http://www.cud.org.cn/2017-03-28/115190231.html)

**URBAN-EU-CHINA EU-China City-City Partnership Awards Ceremony**

12 December 2018 Beijing China

CCUD and UNNC co-hosted the first UEC City-City Partnership Awards Ceremony, in the presence of representatives of the European Commission, EU Delegation, and NDRC officials.

Based on comprehensive evaluation of more than 20 city partnerships collected by UEC, Wuhan and Manchester stood out based on their long-term cooperation on sustainable urbanisation, including their regional innovation stakeholders. Wuhan and Manchester have formed a city partnership since 1986. Over the past 30 years and more, the two cities have exchanged representatives and cooperated on economy, trade, science, technology and culture, with fruitful results achieved. The exchange between Wuhan and Manchester has become a model of close ties between cities.

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Manchester have formed a city partnership since 1986. Over the past 30 years and more, the two cities have exchanged representatives and cooperated on economy, trade, science, technology and culture, with fruitful results achieved. The exchange between Wuhan and Manchester has become a model of close ties between cities.

**Cooperation with the European Innovation Partnership on Smart Cities and Communities (EIP SCC)**

URBAN-EU-CHINA organised a breakfast table back-to-back with the EIP SCC General Assembly, on 12 October 2017 in Brussels. During the following months, UEC engaged in regular dialogue with EIP SCC, and was represented during the next General Assembly in June 2018 in Sofia, Bulgaria.

In 2019, UEC and EIP SCC have agreed to host and organize an EU-China Smart City Summit in Beijing, providing European SCC01 Smart City Lighthouse cities and solution providers with the unique opportunity to present and promote their solutions, achievements and success stories to high level representatives of Chinese cities and investors, and learn from innovative Chinese experiences. Furthermore, European and Chinese city representatives will be given the opportunity to find partners during a matchmaking event. The EU-China Smart City Summit will not be an isolated event: It shall initiate a cascade of activities, including city-city partnerships, business development, and knowledge exchange with universities and research organizations with the full support of UEC and its partners.

### **Cooperation with EIP SCC and JPI UE**

UEC partners contributed to the JPI Urban Europe - NSFC (National Natural Science Foundation of China) Expert Workshop in Hangzhou in May 2017 by identifying experts to invite, presenting state of the art, and hosting an expert session. UEC and JPI UE organised match-making events and dissemination activities throughout 2017 to increase awareness and participation in the joint call.

In June 2017, JPI UE signed MoU's with UEC partners CAUPD and CCUD, to intensify their partnership in the field of urbanisation.

In November 2017, JPI UE and the China Academy of Social Sciences (CASS) organized the Joint Workshop on Sustainable and Green Urbanisation in Zhongshan, to facilitate exchange between Chinese and European experts on sustainable urbanisation. URBAN-EU-CHINA helped JPI UE to invite relevant experts to join the workshop, and UEC partners participated in this workshop.

In February 2018, JPI UE and URBAN-EU-CHINA co-organised a session at UN-Habitat's 9th World Urban Forum. The session highlighted the role of city-city partnerships to achieve UN's Sustainable Development Goals and to translate UN-Habitat's New Urban Agenda into local contexts. Besides presenting cases of EU-China collaboration, the interactive discussions with the audience brought important strategic insight into the potential of city partnerships for sustainable development.

In September 2018, URBAN-EU-CHINA, TRANS-URBAN-EU-CHINA and JPI UE co-organised the Urban Living Labs Workshop: Testing Grounds for Urban Innovation and Transformation, in Beijing. 30 representatives from research institutions, city network organisations and governmental organisations, met to create a common understanding of Urban Living Labs approaches and benefits, as well as requirements and framework conditions to support the operationalisation of Urban Living Labs in Chinese context.

### **Cooperation with the EU Member States Science and Innovation Counsellors' (informal) Working Group on Urbanisation**

UEC cooperates with the EU Member States Working Group on Urbanisation<sup>41</sup>, led by the Embassy of Sweden in Beijing. The first brainstorming discussions regarding scope, ambitions and activities were held in Beijing in the period of October to December 2018, with representatives from UEC, JPI UE and the Working Group.

Future discussions will include how to cooperate with China and how to achieve real changes through priority setting, coordination and framework conditions specific to innovation and research cooperation on sustainable urbanisation, and how to bring the cooperation into the policy contexts in terms of the Paris Climate Agreement<sup>42</sup> and Agenda 2030<sup>43</sup>.

<sup>41</sup> European Commission website, Innovating Cities, [https://ec.europa.eu/research/environment/index.cfm?pg=future\\_cities](https://ec.europa.eu/research/environment/index.cfm?pg=future_cities)

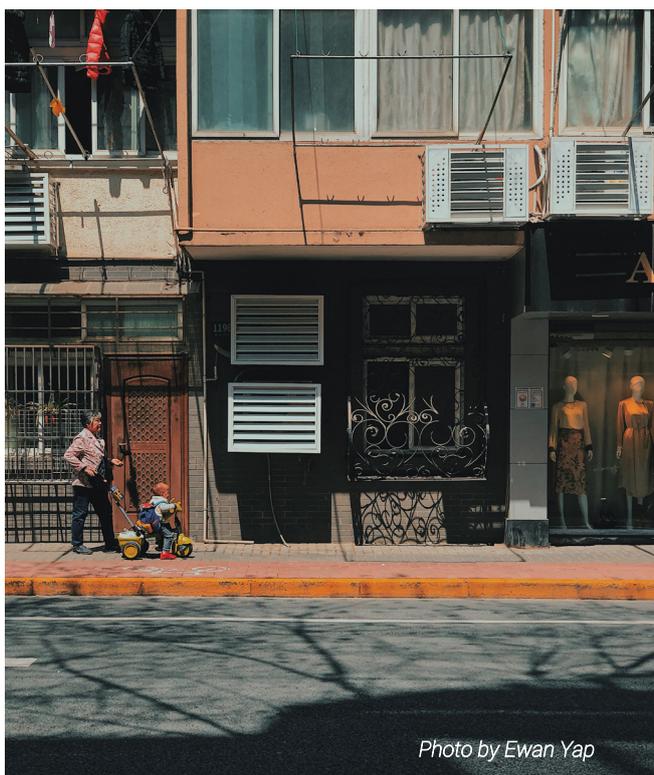
<sup>42</sup> United Nations Climate Change, What is the Paris Agreement, <https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>

<sup>43</sup> UN's 2030 Agenda for Sustainable Development:

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

### **Database of Success Stories of EU-China Cooperation on Sustainable Urbanisation**

URBAN-EU-CHINA collects success stories of EU-China cooperation on sustainable urbanisation into an online database<sup>44</sup>. This database is a central source of information for organizations and individuals interested in past, ongoing and future EU-China collaboration, enabling them to browse Policies & Strategies, Events & Activities, Partnerships & Cooperation's and Urban Projects, as well as search for potential collaboration partners.



*Photo by Ewan Yap*



*Photo by Anastasia Dulgier*

<sup>44</sup> <http://www.urban-eu-china.eu/en/evidence-base/>

# 02

## CITIES OF PEOPLE & CULTURE



**"How can you create a city for multiple cultures and religions, for people to live together – a city for everybody? Europe and China can cooperate on this challenge"**

– Nikolaos Kontinakis,  
Senior Projects Coordinator, EURO CITIES,  
Online interview with NTNU,  
15 June 2017

## Recommendation

The success of implementing all UN Sustainable Development Goals<sup>45</sup> (SDGs) by 2030 relies on creating people-driven smart sustainable cities and communities for long-term societal trust and acceptance. This will require novel immersive community participation, collaborative governance, and high-quality place-making.

Europe and China have both developed powerful strategies and platforms that help cities and towns place people at the core of urban development, balancing economic transformation, spatial development and cultural identity. They provide help to local authorities to develop visionary ambitions as well as down-to-earth action plans to include heritage in urban transformation processes, to provide attractive and accessible public services and infrastructures, and develop successful local partnerships with industry and other knowledge actors. They also provide support to attract tourism and offer local as well as new residents an attractive place to live and work – for citizens of all ages and origins. In a bigger perspective, such measures help balance urban and rural development.

*We recommend that Europe and China develop and promote joint measures for people-centred cities and communities, with cooperation mechanisms to support mutual learning of the important experiences made in practice.*

## Introduction

Cities are at the frontlines of complex economic, environmental and social challenges, ranging from income inequality and transportation management, to a lack of affordable housing and declining quality of urban environments.

With China's very high projected urbanisation rate (100 million more people in cities by 2020 and 300 million more by 2030 from 2014-levels), balancing urban and rural development is of great importance to the development of cities and rural areas. Creating liveable cities for all, is crucial to improving all citizens' quality of life while ensuring social equality, participatory decision making and rule of law.

People-centred urbanisation is a term used in China's *New-Type Urbanisation Plan*<sup>46</sup> (2014-2020), in the *National Innovation-Driven Development Strategy*<sup>47</sup> (from 2016) and in China's *13th Five-Year-Plan*<sup>48</sup> (2016-2020). It marks a shift in China's urbanisation strategy from a more economy-driven urbanisation approach to a more human oriented approach in which the needs and wishes of the citizens are emphasized. "Placing people in the centre" is a key phrase supporting this ambition.

In the *Urban Agenda for the EU*<sup>49</sup> (2016), Urban poverty, Housing, Inclusion of migrants and refugees, Urban mobility and Air Quality are amongst the 12 partnerships addressing urban challenges. The *UN New Urban Agenda's*<sup>50</sup> key

<sup>45</sup> <https://www.un.org/sustainabledevelopment/sustainable-development-goals/>

<sup>46</sup> New-Type Urbanisation Plan: [http://www.gov.cn/zhengce/2014-03/16/content\\_2640075.htm](http://www.gov.cn/zhengce/2014-03/16/content_2640075.htm) (in Chinese)

<sup>47</sup> Outline of National Innovation-Driven Development Strategy: [http://www.most.gov.cn/yw/201605/t20160520\\_125675.htm](http://www.most.gov.cn/yw/201605/t20160520_125675.htm) (in Chinese)

<sup>48</sup> 13th Five-Year-Plan for Economic and Social Development: [en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf](http://en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf)

<sup>49</sup> European Commission (2016) Pact of Amsterdam, <https://ec.europa.eu/futurium/en/urban-agenda/>

<sup>50</sup> UN New Urban Agenda: <https://www.un.org/sustainabledevelopment/blog/2016/10/newurbanagenda/>

## Livable Cities for All

commitments include several commitments relevant to people-centred urbanisation:

- Provide basic services for all citizens;
- Ensure that all citizens have access to equal opportunities and face no discrimination;
- Promote measures that support cleaner cities;
- Fully respect the rights of refugees, migrants and internally displaced persons regardless of their migration status.

In the pilot call *Sustainable and Liveable Cities and Urban Areas*<sup>51</sup> organized by JPI Urban Europe and the National Natural Science Foundation of China (NSFC) in 2018, all three thematic themes addressed were related to people-centred urbanisation:

- Reduce the adverse environmental impact of cities, paying special attention to the quality of air, water and soil, and municipal and other waste management;
- Access to safe, affordable, and sustainable housing, transportation and basic services;
- Integrated policies towards inclusion, resource efficiency, mitigation and adaptation to climate change and resilience to disasters.

Most nations have confirmed their commitment international agreements such as the UN Sustainable Development Goals and the Paris Agreement, and cities are taking actions transform from drivers of greenhouse gas emissions to places that deliver societal well-being combined with low carbon living and resource security. Challenges such as crime rates, healthcare, infrastructure, quality of air and water, levels of corruption, culture and education, availability of sporting facilities, accessibility for elderly and disabled, and environmental concerns, are all part of the equation.

### **The Chinese Perspective**

The Chinese National *New-Type of Urbanisation Plan*<sup>52</sup> (2014-2020) gives priority to people-centred urbanisation, such as guiding people movement reasonably, promoting integration of rural migrants into cities and urban agglomerations, supporting development of public services for permanent residents, improving citizens' quality of life, ensuring social equality and rule of law, and making all residents share the benefits. The process of urban planning should be based on integrating the concepts of people-oriented, respect for nature, inheriting history as well as green and low-carbon. The focus of urban planning needs to be changed from expansion of areas to restriction of city boundaries and optimisation of spatial structure. The Plan also urges for quality control to be strengthened for the entire process covering architecture design, construction, supervision, building materials, and decoration.

<sup>51</sup> JPI UE & NSFC pilot call Sustainable and Liveable Cities and Urban Areas: <https://jpi-urbaneurope.eu/calls/sustainable-urbanisation-china-europe/>

<sup>52</sup> National New-Type Urbanisation Plan: [http://www.gov.cn/zhengce/2014-03/16/content\\_2640075.htm](http://www.gov.cn/zhengce/2014-03/16/content_2640075.htm) (in Chinese)

**“Creating cities top-down does not create places in which people want to live, and city authorities have seen that. It is partly a political problem and partly a technical one: how to involve citizens and other stakeholders in creating the interesting places in which people want to live and work”**

Nikolaos Kontinakis,  
Senior Projects Coordinator, EUROCITIES,  
Online interview with NTNU,  
15 June 2017

In December 2015, the Chinese government convened the *Central Urban Work Conference* (CUWC) for the first time in 37 years<sup>53</sup>. The CUWC was chaired by President Xi Jinping and attended by Prime Minister Li Keqiang and other members of the high-level political leadership of China. The CUWC is a clear sign that urban development has a priority position on the political agenda and is at the centre of reform. China's urban development has entered a new phase with some 100 million new urban residents projected by 2020, and migrant workers needing to be given the same rights as their urban counterparts. One of the follow-up outcomes of the CUWC was the “Applicable, Economic, Green, and Beautiful” Building Policy released in March 2016<sup>54</sup>.

In January 2016, in an executive meeting of the State Council in the follow-up of the CUWC, Prime Minister Li Keqiang<sup>55</sup> emphasized the importance of deepening human-centred urbanization in order to improve liveability of Chinese cities and boost economic development by stimulating investment and consumption.

On 21 February 2016, the CPC Central Committee and the *State Council* released *Several Opinions on Further Strengthening the Management of Urban Planning and Construction*<sup>56</sup> (The Opinions) that are firmly based on China's policy of ecological civilization<sup>57</sup>, as well as analysis and recommendations by the Ministry of Housing and Urban Development and around thirty other departments<sup>58</sup>. The Opinions are important for the further implementation of the *National New-Type of Urbanisation Plan*. They are new urban development

guidelines, introducing the application of principles of sustainable urban development across China, and present a radical change in Chinese policies. They aim to create liveable cities by integrating people-centred, respect for nature, historical and cultural heritage, and green and low-carbon targets into urban planning. Urban public services shall be improved by promoting the development of open and convenient living quarters with appropriate scales, complete facilities and harmonious neighbourhoods. Public green spaces such as plazas, parks and green spaces are planned close to housing areas to facilitate residents' cultural and sports activities and promote residents' interaction. The per capita green area rate of the urban built-up area shall be further improved. Smart application of people's livelihood services shall be actively developed.

On 9 March 2016, MoHURD released guidelines<sup>59</sup> calling for “double urban repair”, emphasizing the need to closely coordinate urban planning and ecological restoration. The guidelines formulate “special plans for urban remediation, improve urban road traffic and infrastructure, public service facilities planning, and clarify requirements for urban environmental remediation, old building maintenance and reinforcement, old factory renovation and utilization, and historical and cultural heritage protection.”

The *National Innovation-Driven Innovation Strategy*<sup>60</sup> aims to develop “the intelligent city and digital social technology, to promote people-oriented new urbanization: relying on new technologies

<sup>53</sup> “Why did China convene its first urban work conference in 37 years?” (China Daily): [http://www.chinadaily.com.cn/china/2015-12/30/content\\_22863986.htm](http://www.chinadaily.com.cn/china/2015-12/30/content_22863986.htm)

<sup>54</sup> Central Committee of the Communist Party of China: Establishing the “Applicable, Economic, Green, and Beautiful” Building Policy, 2 March 2016

<sup>55</sup> Chinese Premier Minister stresses human-centered urbanization; see: [http://news.xinhuanet.com/english/2016-01/24/c\\_135041010.htm](http://news.xinhuanet.com/english/2016-01/24/c_135041010.htm)

<sup>56</sup> CPC Central Committee and the State Council (2016): *Opinions on Further Strengthening the Management of Urban Planning and Construction*; see: [http://news.xinhuanet.com/politics/2016-02/21/c\\_11118109546.htm](http://news.xinhuanet.com/politics/2016-02/21/c_11118109546.htm) (in Chinese)

<sup>57</sup> Opinions of the Central Committee of the Communist Party of China on Accelerating the Construction of Ecological Civilization (April 25, 2015), Xinhua News Agency, Beijing, May 5th, 2015. [http://www.gov.cn/xinwen/2015-05/05/content\\_2857363.htm](http://www.gov.cn/xinwen/2015-05/05/content_2857363.htm)

<sup>58</sup> China issues guidelines on building better cities (Eco-Business): <https://www.eco-business.com/news/china-issues-guidelines-on-building-better-cities/>

<sup>59</sup> Guiding Opinions of the Ministry of Housing and Urban-Rural Development on Strengthening Urban Restoration and Ecological Restoration, Construction Regulation [2017] No. 59, 9 March 2017. [http://www.mohurd.gov.cn/wjfb/201703/t20170309\\_230930.html](http://www.mohurd.gov.cn/wjfb/201703/t20170309_230930.html) (in Chinese)

<sup>60</sup> National Innovation-Driven Innovation Strategy: [http://www.most.gov.cn/yw/201605/t20160520\\_125675.htm](http://www.most.gov.cn/yw/201605/t20160520_125675.htm) (in Chinese)

and management innovation to support the new urbanization, modern urban development and public services, innovation and social governance methods and means to speed up the comprehensive management of social security process, and promote peace in China. Development of transportation, electricity, communications, underground pipe network and other municipal infrastructure standardization, digital, intelligent technology, promote green building, smart city, eco-city and other key technologies in large-scale application. Strengthen major disasters, public safety and other emergency shelter major technology and product research."

The *13th Five-Year Plan for Economic and Social Development*<sup>61</sup> (2016-2020) states that "public services should be inclusive, equitable, and sustainable and should guarantee the basic needs of the people. With a focus on solving the most practical problems that are of greatest concern to and most directly affect the people, we will increase government responsibility for providing public services, see that all sectors become more involved in public service provision, and ensure that public services are accessible to a greater number of people"<sup>62</sup>. The Plan underlines the need to continuously improve the quality of the environment, living standards, and work towards developing cities "that are harmonious and pleasant to live in, that are full of vitality, and that have their own unique character"<sup>63</sup>, to create new-style cities such as green cities, smart cities, innovative cities, cities of culture, and high-density and public-transport oriented cities with integrated functions. Efforts will be made to

make cities more open and inclusive, strengthen the protection of cultural and natural heritage, and keep historical heritage alive<sup>64</sup>.

The China International Cities Development Alliance, with UEC partner CCUD as the Secretariat, and the World Health Organization (WHO) signed a Letter of Intent on the Belt and Road Forum for International Cooperation (BRF)<sup>65</sup> to collaborate on urban health governance. It is expected that CCUD and WHO will deepen cooperation on topics such as healthy cities plans, environment, social frameworks and service optimization, make joint efforts for healthy city governance, and provide more platforms, scalable experiences and urbanization public products on healthy development for cities at home and abroad.

### The European Perspective

The *Urban Agenda for the EU Pact of Amsterdam*<sup>66</sup> (2016), states that "the success of European sustainable urban development is highly important for the economic, social and territorial cohesion of the European Union and the quality of life of its citizens"<sup>67</sup>. The Urban Agenda for the EU underlines the importance of developing cities for people based on the citizens' needs through various ways of citizen participation, and the need for a place-based and people-based approach to strategic urban planning<sup>68</sup>. These are further specified in the *Initial list of Priority Themes*<sup>69</sup>.

The *Initial list of Priority Themes* features, among others, *Inclusion of migrants and refugees*, aiming to "manage integration of incoming migrants and refugees (extra-

<sup>61</sup> 13th Five-Year Plan for Economic and Social Development: <http://en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf>

<sup>62</sup> Part XV, Chapter 61 <sup>63</sup> Part VIII, Chapter 34 <sup>64</sup> Part VIII, Chapter 34, Section 1

<sup>67</sup> Last sentence of the preamble in the Pact of Amsterdam, page 3 <sup>68</sup> Point 12.3

<sup>65</sup> Xinhua News Agency, List of Deliverables of Belt and Road Forum for International Cooperation, [http://www.xinhuanet.com/english/201705/15/c\\_136286376.htm](http://www.xinhuanet.com/english/201705/15/c_136286376.htm)

<sup>66</sup> European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>69</sup> The list was established based on a survey among Member States and representatives of urban and regional authorities in July 2015 organised by the Netherlands and under consideration of the Commission Staff Working document ('Results of the Public Consultation on the key features of an Urban Agenda for the EU, SWD (2015) 109 final/2), published on 27 May 2015 as well as the results of three thematic workshops on this matter (organised by the European Commission in September 2015).

EU) and to provide a framework for their inclusion based on willingness and integration capacity of local communities. This will cover: housing, cultural integration, provision of public services, social inclusion, education and labour market measures, chances of second-third generations, spatial segregation<sup>70</sup>. Another theme, *Urban Poverty*, states as objectives to “reduce poverty and improve the inclusion of people in poverty or at risk of poverty in deprived neighbourhoods”<sup>71</sup>.

The *Urban Agenda for the EU* is an integrated and coordinated approach to deal with the urban dimension of EU and national policies and legislation, and within the agenda 12 partnerships have been defined: *Inclusion of Migrants and Refugees, Air Quality, Housing, Urban Poverty, Circular Economy, Digital Transition, Urban Mobility, Jobs and Skills in the Local Economy, Energy Transition, Climate Adaptation, Innovative and Responsible Public Procurement and Sustainable Use of Land and Nature-Based Solutions*<sup>72</sup>. Each Partnership has, or are, formulating Action Plans with concrete actions for Better Regulation, Better Funding and Better Knowledge, related to the theme of each Partnership<sup>73</sup>.

The *Action Plan for Urban Poverty*<sup>74</sup> (2018) takes into account the relevance of spatial organisation, accessibility and design of urban space in addressing urban poverty. Accessibility is addressed by a cross-cutting issue<sup>75</sup>, in which efficient and safe public transport services and walkable networks of public spaces are considered necessary to avoid the spatial segregation of the most vulnerable urban areas and to revitalize urban deprived areas and neighbourhoods.

The *Draft Action Plan of the Jobs and Skills in the Local Economy Partnership*<sup>76</sup> (2018) states that “cities can play an important role in ensuring transparency at all stages of the creation and implementation of new development strategies, involving citizens in the decision-making processes”<sup>77</sup>. The document underlines that cities should work together to increase their administrative capacity to develop and implement integrated strategies, as well as to create new types of services adapted to technological developments and to the needs of the citizens.

The *Action Plan for Digital Transition*<sup>78</sup> (2018) emphasizes that digital transformation should promote the participation of all people in all aspects of society, and that “implementation of digital technologies must not lead to the exclusion of individuals or segments of the population. It needs to consider people's different ranges of possibilities to interact with digital tools. It also should ensure accessibility for persons with disabilities”<sup>79</sup>. The *Action plan* further states that “digital tools and new technologies are key factors for increasing citizen inclusion (...) when it comes to urban planning, many cities still lack the finance or knowledge to implement platforms for (digital) participatory urban planning”<sup>80</sup>.

The *Action Plan for Urban Mobility*<sup>81</sup> (2018), emphasises mobility as a highly interlinked topic: it relates to challenges of integrated urban development, such as sustainable urban development, urban climate change, innovative mobility, and people-orientated design of social cities cut across sectors and departments to involve a wide range of stakeholders within network

<sup>70</sup> European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>71</sup> Urban Agenda for the EU, the Action Plan of the Urban Poverty Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/action\\_plan\\_urban\\_poverty.pdf](https://ec.europa.eu/futurium/en/system/files/ged/action_plan_urban_poverty.pdf) <sup>72</sup> The Urban Agenda for the EU, [https://ec.europa.eu/regional\\_policy/en/policy/themes/urban-development/agenda/](https://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/)

<sup>73</sup> European Commission, What is an Action Plan?, <https://ec.europa.eu/futurium/en/content/what-action-plan>

<sup>74</sup> Urban Agenda for the EU, the Action Plan of the Urban Poverty Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/action\\_plan\\_urban\\_poverty.pdf](https://ec.europa.eu/futurium/en/system/files/ged/action_plan_urban_poverty.pdf)

<sup>75</sup> Part 5.1 <sup>79</sup> Part 2.2, page 17 <sup>80</sup> Part 2.8, page 33 <sup>82</sup> Point 2.5

<sup>77</sup> 3rd Priority Area: Governance - Public Services and Effective Local Governance), page 6

<sup>76</sup> Urban Agenda for the EU, Draft Action Plan of the Jobs and Skills in the Local Economy Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/final\\_draft\\_action\\_plan\\_jobs\\_and\\_skills\\_26\\_july\\_2018.pdf](https://ec.europa.eu/futurium/en/system/files/ged/final_draft_action_plan_jobs_and_skills_26_july_2018.pdf)

<sup>78</sup> Urban Agenda for the EU, the Action Plan of the Digital Transition Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/digital\\_transition\\_action\\_plan\\_for\\_dgum\\_300818\\_final.pdf](https://ec.europa.eu/futurium/en/system/files/ged/digital_transition_action_plan_for_dgum_300818_final.pdf)

<sup>81</sup> Urban Agenda for the EU, Action Plan of the Urban Mobility Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/pum\\_final\\_actionplan\\_withjointstatement.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pum_final_actionplan_withjointstatement.pdf)

structures. The safety of pedestrians and cyclists in urban areas is discussed at length: "In order to develop the full potential of the active modes of transport, cycling and walking have to be taken seriously in urban mobility policies, including in the allocation of space and budgets. A comprehensive network of active mobility infrastructure which is well-designed and safe is a basic requirement for making cycling or walking a viable and attractive option in daily travel. Modern active mobility infrastructure must be tailored also to the needs of vulnerable users and citizens with reduced mobility (children, elderly, citizens with disabilities, etc.). Currently in many cities, pedestrians and cyclists must deal with incomplete networks, unnecessary detours, inappropriate surfaces, bad or no signage of routes, insufficient or inconvenient crossings or long waiting times at traffic lights. In many cities, safety concerns – often linked to the absence or poor development of walking and cycling infrastructure, as well as inconsiderate driver behaviour and poor traffic law enforcement – remain a major barrier for more people to walk or cycle to work or school"<sup>82</sup>.

### The Global Perspective

The *UN New Urban Agenda*<sup>83</sup>, adopted in 2016 in Quito (Ecuador) during the HABITAT III Conference, established that sustained, inclusive, and sustainable economic growth, with full and productive employment and decent work for all, is a key element of sustainable urban and territorial development. It further stressed that cities and human settlements should be places

of equal opportunities allowing people to live healthy, productive, prosperous, and fulfilling lives. The document underlines the value of urbanisation for economic development.

The *UN New Urban Agenda* envisages cities and human settlements that "promote age- and gender-responsive planning and investment for sustainable, safe and accessible urban mobility for all and resource-efficient transport systems for passengers and freight, effectively linking people, places, goods, services and economic opportunities"<sup>84</sup>.

*Two Countries, One Challenge: Ageing Solutions for Education, Insurance and Urban Life in China and Germany (30/11 – 01/12/2017)*, Partnering with German and Chinese governmental organizations, the conference<sup>85</sup> aimed to highlight practices, solutions and innovation in the fields of elderly care education and training, long-term care insurance schemes and age-friendly cities and districts. Challenges from the fast-paced demographic changes in each country and their far-reaching and unforeseen social implications were emphasized and discussed.

<sup>83</sup> UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf>

<sup>84</sup> Point 13 (f), page 7  
<sup>85</sup> Sino-German Urbanisation Partnership, *Two Countries, One Challenge: Ageing Solutions for Education, Insurance and Urban Life in China and Germany (30/11 – 01/12/2017)*: <https://www.sustainable-urbanisation.org/en/events/two-countries-one-challenge-ageing-solutions-for-education-insurance-and-urban-life-in-china>

*The EU-China Social Protection Reform Project (SPRP)*<sup>86</sup> (2014-2019) is co-funded by the European Union and China through a single financing agreement. The project supports the Chinese government in improving the performance and inclusiveness of China's social protection system through strengthening institutional capability for developing policies, implementing legal and regulatory frameworks, and supervising systems related to social insurances, social assistance and financial management in the area of social security.

The main purpose of the project will be achieved through the following three components<sup>87</sup>:

- Consolidation of institutional capacity for social protection policy development and reforms in collaboration with the National Development and Reform Commission (NDRC);
- Enhancing institutional capacity for financial management and supervision concerning social security funds in collaboration with the Ministry of Finance (MoF);
- Improving the legal framework and policy for social assistance in collaboration with the Ministry of Civil Affairs (MoCA).

*TRANS-URBAN-EU-CHINA*, The key objective of TRANS-URBAN-EU-CHINA<sup>88</sup> is to help policy makers, urban authorities, real estate developers, public service providers and citizens in China to create socially integrative cities in an environmentally friendly and financially viable way. Moreover, it will help urban stakeholders in Europe to reflect and reconsider their approaches towards sustainable urbanisation. The project is structured around four main topics:

- (a) community building and place-making in neighbourhoods;
- (b) bridging the planning-implementation gap in eco and smart cities;
- (c) land use planning and land management in new urban expansion and urban renewal areas, and
- (d) transition pathways to sustainable urban planning and governance. The project is funded by the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No. 770141.

Linked to TRANS-URBAN-EU-CHINA is the project "New Technology on Digital City Planning", funded by the Chinese Co-Funding Mechanisms (CFM). This project has a budget of 3.66 million RMB, uses the XiongAn New Area as a case, and has Alibaba among its consortium partners<sup>89</sup>.

<sup>86</sup> EU-China Social Protection Reform Project website: <https://www.euchinasprp.eu/en/>

<sup>87</sup> EU-China Social Protection Reform Project website: <https://www.euchinasprp.eu/en/components-en>

<sup>88</sup> TRANS-URBAN-EU-CHINA website: <http://transurbaneuchina.eu/project/>

<sup>89</sup> CAUPD, [https://mp.weixin.qq.com/s/K5ZNEa\\_TkCxBhz9bW1JJHA](https://mp.weixin.qq.com/s/K5ZNEa_TkCxBhz9bW1JJHA) (in Chinese)

## Cities of Culture

Culture has an important place in the urban agenda of cities in China and Europe. Cultural planning has emerged as a significant local policy initiative in many places, aiming to achieve social, economic, urban and creative outcomes.

### The Chinese Perspective

The Chinese *Characteristic Town Platform*<sup>90</sup> helps 1000 smaller cities and towns to create visionary strategies and down-to-earth action plans that balance economic transformation, spatial development and cultural identity. The concept was recognized and promoted by the Central Government from 2016 onwards, when the Ministry of Housing and Urban-Rural Development, the National Development and Reform Commission and the Ministry of Finance jointly issued a circular calling for China to build 1000 Characteristic Towns by 2020. The platform helps local authorities develop viable measures to include heritage in urban transformation processes, to provide attractive and accessible public services and infrastructures, and to develop successful local partnerships with industry and other knowledge actors. On a local scale, the measures help towns and smaller cities attract tourism and offer local as well as new residents an attractive place to live and work. In a bigger perspective, such measures help balance urban and rural development, and the concept has become a pattern for the New-type of Urbanisation in China.

*China's New-type Urbanisation Plan*<sup>91</sup> promotes "the construction of cultural cities" as a measure to increase the sustainable development capacity of

cities. The Plan supports cities in their exploration of cultural resources, tradition, heritage, diversity and innovation, and promotes balance between traditional and modern, foreign and native culture. This includes comprehensive renovation of old towns, old and dangerous residences and non-residential houses to increase their functionality, while improving the overall living environment and protecting historical and cultural heritage, ethnic styles and traditional characteristics. New urban areas are supported to integrate cultural, natural and traditional features. All cities need to develop a good system for cultural production, management and public services, across protection of heritage sites, renewal of downtown areas and construction of new urban districts.

On 7 December 2016, the Ministry of Science and Technology and the Ministry of Cultural Affairs launched the "*National 13th Five-Year Plan for Cultural Heritage Protection and Public Cultural Service Science and Technology Innovation Plan*"<sup>92</sup>. The *13th Five-Year Plan* emphasises distinctive small towns that possess unique resources, geographical advantages and cultural heritage, as examples of new urbanisation projects.

The *13th Five-Year Plan for Economic and Social Development*<sup>93</sup> proposes to develop harmonious and pleasant cities, by continuously improving the quality of the environment and living standards. The Plan aims to develop cities "that are harmonious and pleasant to live in, that are full of vitality, and that have their own unique character". One of the key

<sup>90</sup> 2018 Chinese Characteristic Town Development Report was officially released, <http://house.people.com.cn/n1/2018/0328/c164220-29894295.html> (in Chinese)

<sup>91</sup> National New-type Urbanisation Plan Part 5 "Increase urban sustainable development capabilities", Chapter 18

<sup>92</sup> Ministry of Science and Technology of the State Administration of Cultural Heritage on Printing and Distributing the National Science and Technology Protection Plan for the Protection of Cultural Heritage and Public Cultural Services during the Thirteenth Five-Year Plan. State Branch, (2016) 374, December 7, 2016

<sup>93</sup> 13th Five-Year Plan for Economic and Social Development Part VIII, Chapter 34, "Develop Harmonious and Pleasant Cities", Section 1 "a New Style of City"

measures towards achieving this goal, is to provide support infrastructure and improve the quality of urban renewal, including comprehensive upgrading of old residential communities and transformation and upgrading of urban villages and rundown areas.

### The European Perspective

The *Urban Agenda for the EU*<sup>94</sup>, underlines that a joint approach between sectoral policies and the different levels of government is required to deliver the full potential of urban areas, and asks that “a balanced, sustainable and integrated approach towards urban challenges should, in line with the Leipzig Charter on sustainable European cities<sup>95</sup>, focus on all major aspects of urban development (in particular economic, environmental, social, territorial, and cultural) in order to ensure sound urban governance and policy” (p. 4). The document further states that “it is important that Urban Authorities cooperate with local communities, civil society, businesses and knowledge institutions. Together they are the main drivers in shaping sustainable development with the aim of enhancing the environmental, economic, social and cultural progress of Urban Areas” (p. 4).

2018 was the European Year of Cultural Heritage, and the European Commission’s *Strategic Framework – European Agenda for Culture*<sup>96</sup>, commits to “promoting cultural diversity, protecting cultural heritage, easing obstacles to the mobility of cultural professionals, and supporting the contribution of cultural and creative industries to boosting growth and jobs across the EU”.

The European Commission proposed a *New European Agenda for Culture*<sup>97</sup>, which takes account of the evolution of the cultural sector, focuses on the positive contribution that culture makes to Europe’s societies, economies and international relations, and sets out enhanced working methods with the Member States, civil society and international partners, which was adopted in May 2018 and will be implemented from 2019 onwards.

### The Global Perspective

The *UN New Urban Agenda* emphasizes the importance of culture and cultural diversity as sources of enrichment for humankind, and states that “we will include culture as a priority component of urban plans and strategies in the adoption of planning instruments, including master plans, zoning guidelines, building codes, coastal management policies and strategic development policies that safeguard a diverse range of tangible and intangible cultural heritage and landscapes, and will protect them from potential disruptive impacts of urban development”<sup>98</sup>.

The United Nations Development Programme’s (UNDP) *Sustainable Urbanization Strategy*<sup>99</sup> (2016) underlines the importance of culture in urbanisation, and suggests that “cities can be made more inclusive by choosing to provide greater access to public spaces that offer opportunities for interaction and would enhance the social and cultural development and integration for families of various cultures and diverse backgrounds”<sup>100</sup>.

<sup>94</sup> European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf) + under “The need for an Urban Agenda for the EU”

<sup>95</sup> LEIPZIG CHARTER on Sustainable European Cities: [https://ec.europa.eu/regional\\_policy/archive/themes/urban/leipzig\\_charter.pdf](https://ec.europa.eu/regional_policy/archive/themes/urban/leipzig_charter.pdf)

<sup>96</sup> European Commission’s Strategic Framework – European Agenda for Culture: [https://ec.europa.eu/culture/policy/strategic-framework\\_en](https://ec.europa.eu/culture/policy/strategic-framework_en)

<sup>97</sup> European Commission: Commission proposes ambitious New European Agenda for Culture: [https://ec.europa.eu/culture/news/new-european-agenda-culture\\_en](https://ec.europa.eu/culture/news/new-european-agenda-culture_en)

<sup>98</sup> UN New Urban Agenda, Point 124, page 32

<sup>99</sup> UNDP’s Sustainable Urbanization Strategy: <http://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/sustainable-urbanization-strategy.html>

<sup>100</sup> Chapter 3, Public space and land development, page 13

*E-Culture and Arts for Intelligent Cities – Workshop in Beijing (April 26, 2018)*, Digital access to cultural assets offers the opportunity for a variety of actors to engage into a discourse on cultural identities, and to form and link city-level cultural communities based on a shared interest of understanding, interpreting and exploiting culture. These Communities foster the co-working and co-creation of citizens, researchers, students, tourists, pupils and enterprises on specific cultural heritage that, when interlinked, will create an eCulture eco-system. Local aggregators or cultural offices of municipalities are driving forces in Smart City concepts and in the funding of cultural activities. Municipalities organize city cultural life and are responsible for the implementation of projects which allow citizens to access and engage with digital cultural heritage. The aim of this workshop was to explore relevant areas of common interest, exchange best practice solutions and cooperate in joint projects. The workshop was organised by the China Academy of Urban Planning and Design and Tongji University<sup>101</sup>.

*Urban Knowledge Network Asia (UKNA)*, studied how Asian cities, as organic socio-spatial entities, can manage their space and improve their liveability. To this end, the programme hosted a variety of research projects in the three key thematic areas of heritage, housing and the environment. The three UKNA themes were linked to each other through the common challenges of urban planning, management and governance.

The UKNA aimed to nurture knowledge on Asian cities. This was achieved via research staff exchanges and targeted case study-based research, pursuing three avenues of inquiry<sup>102</sup>:

- **IDEAS OF THE CITY:** This research theme explores competing ideas of the contemporary city from historical perspectives to illuminate the continuities and ruptures in the process of city making.
- **CITIES BY AND FOR THE PEOPLE:** This theme examines who are the actors and how they interact in the production, shaping, contestation and transformation of the city. It explores the relations between human flourishing and the making of urban space and form, with a particular concern for the rights of residents and users in the process.
- **FUTURE OF CITIES:** This theme considers the challenges of urban dwellers and users in the areas of land, housing, infrastructure, services, planning and the environment, personal wellbeing (including livelihoods and human capital), and “life spaces” (comprising culture, urban heritage, public spaces, and associational life).

UKNA was funded by the European 7th Framework Programme, Grant agreement number 295114.

<sup>101</sup> URBAN-EU-CHINA website: <http://www.urban-eu-china.eu/en/event/e-culture-and-arts-for-intelligent-cities-workshop/>

<sup>102</sup> “Human Flourishing and the Creative Production of Urban Space”: From Knowledge to Action in Comparative Research on Cities in Asia: <https://cordis.europa.eu/docs/results/295/295114/periodic1-5-ukna-general-brochure.pdf>

**“Massive migration from countryside to the cities, driven by economic growth, greater wealth and better opportunities, which cannot be matched in the countryside. This is probably the main underlying driver of the movement. And obviously there are challenges here concerning the restructuring of the Hukou-system”<sup>103</sup>**

- Simon Spooner,  
Principal Scientist, ATKINS,  
Online interview with NTNU,  
06 November 2017

## Balancing Urban and Rural Development

Balanced urban-rural development requires a mutual relationship between cities and their surrounding regions, to optimise their functional cooperation, distribute public resources, guarantee services and establish wider territorial benefits.

### The Chinese Perspective

The *Standing Committee of the National People's Congress* promulgated a new law on urban and rural planning in October 2007. The *Urban and Rural Planning Law of the People's Republic of China*<sup>104</sup> (last revised in 2015<sup>105</sup>) became effective on January 1, 2008 and replaced the *City Planning Law* of 1989<sup>106</sup>. The purpose of the law was to promote coordinated urban and rural planning to balance the country's development, protect natural resources as well as cultural heritage, and maintain local features and traditions<sup>107</sup>. The law began an era of integrated urban and rural planning. As China's economy continued to develop, the administration of developments in urban and rural areas of China required a more focused approach to ensure the harmonious development of each area's economy along with the preservation of local culture, heritage and infrastructure needs. The new system provided localities with guidelines to ensure nationwide consistency while providing a certain amount of autonomy to allow for specific local needs<sup>108</sup>.

The *13th Five-Year Plan for Economic and Social Development*<sup>109</sup> aims to facilitate urban and rural integration “based on city clusters, supported by the comprehensive carrying capacity of cities, and

safeguarded by institutional innovations”<sup>110</sup>. This includes, amongst others, measures to “promote coordination between the development of new urbanization and the building of a new countryside, improve the ability of county economies to support and lead economic development in their surrounding areas, promote the balanced allocation of public resources between urban and rural areas, expand the space for rural development, and bring about a pattern of common development between urban and rural areas.”<sup>111</sup> In addition, the Plan supports urban renewal and improvement of old residential communities.

The *New-Type Urbanisation Plan*<sup>112</sup> aims to “improve the Institutional Mechanisms of the Urban and Rural Development Integration”<sup>113</sup>, including construction of unified urban and rural market elements and promotion of urban planning, infrastructure and public service integration. The Plan proposes to make overall plans for economic and social development, land use and urban and rural planning. It describes how to expand the scope of the coverage of public finance in rural areas, and to improve the level of guarantees for infrastructure and public services. Furthermore, it explains the need to speed up the extension of public services to rural areas and promote the expansion of public employment service networks to the county and lower levels.

In addition, the plan aims to reform and upgrade the functions of the city and its surrounding environment<sup>114</sup>:

- Promote the move of some functions of megacity central urban areas to satellite towns (see e.g. Xiong'an New Area), strengthen high-end service,

<sup>103</sup> Hukou is a system of household registration in mainland China. The hukou system was first introduced in 1958 to control the migration of rural residents. Each individual is assigned a hukou, which records an individual's identity including date of birth, parents, spouse, and city of residence. The hukou provides an individual with access to social welfare benefits, healthcare, housing, and schooling for children.

<sup>104</sup> The Urban and Rural Planning Law of the People's Republic of China: [http://www.npc.gov.cn/englishnpc/Law/2009-02/20/content\\_1471595.htm](http://www.npc.gov.cn/englishnpc/Law/2009-02/20/content_1471595.htm)

<sup>105</sup> Urban and Rural Planning Law of the People's Republic of China [Revised]: <http://www.lawinfochina.com/display.aspx?lib=law&id=6495&CGid=>

<sup>106</sup> China New Urban and Rural Planning Law: <http://www.loc.gov/law/foreign-news/article/china-new-urban-and-rural-planning-law/>

<sup>107</sup> Urban and Rural Planning Law of the People's Republic of China (2015 Amendment): <http://urbanlex.unhabitat.org/law/285>

<sup>108</sup> Urban and Rural Planning Law. Hot Issues: <https://www.chinalawinsight.com/2008/05/articles/corporate/real-estate/urban-and-rural-planning-law-hot-issues/>

<sup>109</sup> 13th Five-Year Plan for Economic and Social Development: <http://en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf>

<sup>110</sup> In the headline paragraph of Part VIII New Urbanisation<sup>111</sup> Part VIII, Chapter 36 “Promote Coordinated Urban and Rural Development”

<sup>112</sup> New-Type Urbanisation Plan: [http://www.gov.cn/zhengce/2014-03/16/content\\_2640075.htm](http://www.gov.cn/zhengce/2014-03/16/content_2640075.htm) (in Chinese)

modern commerce, information intermediaries, and creativity and innovation functions of central urban areas of large and middle-sized cities;

- Improve the function combination of central urban areas, coordinate and plan surface and underground space development, promote rational distribution and comprehensive utilisation and development of commerce, office, residence, ecological spaces and transport stops;
- Create urban municipal administration standards, optimise municipal scale and structure;
- According to the requirements of both reform and protection of renovations, improve old city reform mechanisms, and optimise old city functions;
- Accelerate the transfer and reform of old urban industrial areas, promote the reform of shantytowns, steadily implement the reform of urban villages, orderly carry out a comprehensive renovation of old residence quarters, old and dangerous residences and non-residential houses, and improve the overall living environment.

### The European Perspective

The *Urban Agenda for the EU*<sup>116</sup> acknowledges the polycentric structure of Europe, the diversity (social, economic, territorial, cultural and historical) of urban areas across the EU, and the importance of urban areas of all sizes and contexts in the further development of the European Union. A growing number of urban challenges are of a local nature, but require a wider territorial solution (including urban-rural linkages) and cooperation within functional urban areas, at the same

time as urban solutions have the potential to lead to wider territorial benefits. The *Urban Agenda for the EU* emphasizes that urban authorities need to cooperate within their functional areas and with their surrounding regions, connecting and reinforcing territorial and urban policies. The document further states the importance of urban regeneration “including social, economic, environmental, spatial and cultural aspects, also linked to the brownfield redevelopment with the objective of limiting greenfield consumption”<sup>117</sup>.

The *draft Action Plan for Sustainable Use of Land and Nature-based Solutions*<sup>118</sup> (2018) states that systems of inter-municipal cooperation (e.g. for joint investments, establishing common public services, and coordinated spatial planning within functional urban areas), have a positive impact in terms of the sustainable use of land, as these approaches can help to manage uncontrolled urban sprawl and promote green infrastructures across administrative borders. However, there are real limitations to the extent that spatial planning alone can resolve all issues at the level of the functional urban area, unless there exists an appropriate governance structure (e.g. metropolitan authority) to support it. Equally important is the potential to strengthen urban-rural linkages and the promotion of green infrastructure, which ultimately will improve the quality of urban governance.

### The Global Perspective

The *UN New Urban Agenda*<sup>119</sup> incorporates a new recognition of the correlation between good

<sup>113</sup>In Part 6 which deals with “Promote the Integration of Urban and Rural Development”

<sup>114</sup>In Part 5, Chapter 15

<sup>115</sup>全文布 | 《河北雄安新区划 要》(附) Full-text release | “Hebei Xiong’an New District Planning Outline” (with photos), Xinhua News Agency, 21.04.2018: <https://mp.weixin.qq.com/s/vlxzGn5tuk7dK9st4zw0Rw>

<sup>116</sup>European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>117</sup>Point 12.8, page 8 <sup>119</sup>UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf>

<sup>118</sup>Urban Agenda for the EU, Draft Action Plan of the Sustainable Use of Land and Nature-based Solutions Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/final\\_draft\\_action\\_plan\\_27-07-2018v3.pdf](https://ec.europa.eu/futurium/en/system/files/ged/final_draft_action_plan_27-07-2018v3.pdf)

urbanisation and development, and underlines the linkages between good urbanisation and job creation, livelihood opportunities and improved quality of life, which should be included in every urban renewal policy and strategy. *The UN New Urban Agenda* states that “we encourage spatial development strategies that take into account, as appropriate, the need to guide urban extension, prioritizing urban renewal by planning for the provision of accessible and well-connected infrastructure and services, sustainable population densities and compact design and integration of new neighbourhoods into the urban fabric, preventing urban sprawl and marginalization”<sup>120</sup>.

The *UN New Urban Agenda* furthermore will “promote planned urban extensions and infill, prioritizing renewal, regeneration and retrofitting of urban areas, as appropriate, including the upgrading of slums and informal settlements, providing high-quality buildings and public spaces, promoting integrated and participatory approaches involving all relevant stakeholders and inhabitants and avoiding spatial and socioeconomic segregation and gentrification, while preserving cultural heritage and preventing and containing urban sprawl”<sup>121</sup>.



<sup>120</sup> Point 52, page 15  
<sup>121</sup> Point 97, page 25



Photo by Raymond Tan



Photo by Raymond Tan

# 03

## GREEN CITIES

**“Often the same concepts with different names actually, for example the Chinese “Sponge City” and the “Water Sensitive City” from the West are the same concepts. These names can drive development forward, packaging them in sexier ways helps with applying for funding. You get more funding to do the development. The key is looking at the requirements for our future cities (and not just buzz-words)”**

*- Ricky Tsui,  
R&D Director in East Asia, ARUP,  
Online interview with NTNU,  
30 November 2017.*

### Recommendation

To be truly attractive places for people to live and work, cities need to deliver clean air, clean water, clean energy solution and clean transport methods to their citizens and communities. China and Europe are both developing and testing pathways towards green cities, in which each individual environmental challenge and technology is of high value, and, even more, the integrated assessment, design and management of mitigation and adaptation strategies. In order to create green, liveable and attractive cities in the long-term perspective, it is the mixture of technology, policy and design that is vital for Sino-European cooperation.

We recommend that China and Europe cooperate more closely on comprehensive and integrated approaches to create green cities and communities, with an integrated approach including environmental, technological, regulatory, social, cultural, economic, spatial and other perspectives.

## Towards Positive Energy Districts, Cities & Regions

Cities and communities will be important drivers towards a positive energy, low carbon world, integrating spatial, technical, digital, social, cultural, regulatory, innovation, and other urban perspectives, towards human habitats that consume less energy than they generate, in an affordable and inclusive manner.

### The Chinese Perspective

The *13th Five-Year Plan for Economic and Social Development*<sup>122</sup> describes the government's commitment to advance the energy revolution in all parts of the energy mix: hydropower, wind and photovoltaic power, solar thermal energy, nuclear power, biomass and geothermal energy, cleaner and more efficient use of coal, inshore and offshore oil and gas exploitation, exploitation of natural gas, coal seam gas, and shale oil and gas<sup>123</sup>.

According to the *New-type Urbanisation Plan*<sup>124</sup>, promoting green energy, building and transportation is emphasized as a priority<sup>125</sup>, including to "improve standards and certification system for green buildings and expand the scope of the enforcement; accelerate renovation of existing buildings towards energy-efficiency, vigorously develop green building materials and push forward the industrialisation of the construction sector"<sup>126</sup>.

The *National Key Special "Thirteen-Five" National Science and Technology Innovation Plan (28 July 2016)*<sup>127</sup> encourages "strengthening green building planning and design methods and models, research on nearly zero-energy consumption buildings,

developing green building materials with good durability, and promoting the large scale, high-efficiency and sustainable development of green building and assembling type building."

The *13th Five-Year Plan for Housing and Urban-Rural Development*<sup>128</sup> stresses the importance of steadily improving the level of building energy efficiency, comprehensively promoting the development of green building, promoting renewable energy construction applications, developing assembly-type buildings and to promoting the use of green building materials<sup>129</sup>. The *Plan* would like to see "building energy efficiency standards gradually increased, a substantial increase in the proportion of green buildings, industry science and technology support role. By 2020, more than 50% of new buildings will be green buildings, green building materials will be more than 40%, and new buildings will require 20% more energy efficiency"<sup>130</sup>.

The *Special plan for the 13th Five-Year Plan for scientific and technological innovation in housing urban and rural construction*<sup>131</sup>, addresses many science, technology and innovation aspects relevant for green buildings in a comprehensive manner, such as technologies and equipment for green circular building, green building planning, design assessment methods for building and urban areas, and assessment systems for green building materials. Improving the integration of green building technology, enhancing the liveability of existing residential buildings and increasing the development

<sup>122</sup> 13th Five-Year Plan for Economic and Social Development: [en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf](http://en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf) (in Chinese)

<sup>123</sup> Chapter 30 "Build a Modern Energy System"

<sup>124</sup> New-Type Urbanisation Plan, Part 2 "Guiding Ideology and Development goals", Chapter 5 "Development Goals"

<sup>125</sup> Chapter 18 "Promote the construction of New-type Cities": Green Cities and Smart Cities: Priorities for the Construction of Green Cities

<sup>126</sup> Part 5 "Increase Urban Sustainable Deployment Capabilities", Chapter 18 "Promote the Construction of New-type Cities", Section 1 "Accelerate the construction of green cities"

<sup>127</sup> National Key Special "Thirteen-Five" National Science and Technology Innovation Plan, Part 2, "The country to build a first-mover advantage", Chapter VI "Support sound and sustainable development, improving people's livelihood technology system", Section IV. "Developing new technology for urbanization", 2. "Green Building and assembly architecture research"

<sup>128</sup> 13th Five-Year Plan for Housing and Urban-Rural Development: <http://www.hnjs.edu.cn/s/21/t/2/4b/a5/info19365.htm> (not active anymore on 181007), <https://www.tuliu.com/read-40473.html> (accessed 181007, only parts I - XII, XIII - XVII missing), <http://gh.wuxi.gov.cn/doc/2016/08/31/1128445.shtml> (short outline, accessed 181007)

<sup>129</sup> Part XIV, "Vigorously promote the building energy efficiency and green building"

<sup>130</sup> Part II, "The overall requirements"

**“In our work with the World Expo in Shanghai, we were looking at how to bring in the passive way of reducing the energy-usage into a number of planning-elements (inspiration from London). We bring/borrow the most “interesting” planning-aspects from Europe into the Chinese context, including design-rules and regulations, and other sustainability-related issues. By combining and mixing the two ways together, that can help us to deliver a more innovative way of solving city planning in a sustainable way”**

- Ricky Tsui,  
R&D Director in East Asia, ARUP,  
Online interview with NTNU,  
30 November 2017

and application of green building materials are stated as key tasks<sup>132</sup>. Full implementation of the *National Green Building Action Plan*<sup>133</sup> is also emphasized here, with “hundreds of green building innovation demonstration projects (...) completed in different climate zones, effectively supporting the promotion and application of the national 360 million square meters of green buildings.”<sup>134</sup>

The *13th Five-Year Plan for Building Energy Efficiency and Green Building Development*<sup>135</sup> defines in detail the promotion of building energy efficiency and green buildings in the five-year period 2016-2020<sup>136</sup>. The main tasks are to comprehensively promote the development of green building quality, further increase the enforcement of green building standards in new urban construction, and enforcing the green building standards for new buildings in provincial capital cities and key cities. The Plan promotes the construction of green ecological urban districts (blocks and settlements) in conditional urban new districts and functional parks, carrying out planning and design according to green building standards and gradually incorporating green building standards for civil buildings into project construction management procedures. Furthermore, the Plan aims to increase the proportion of high-performance green buildings in the government’s investment in public welfare buildings, large-scale public buildings, green ecological urban areas and new buildings in key functional areas. The use of green building materials in projects invested by the government should be given priority.

### The European Perspective

The *Urban Agenda for the EU*<sup>137</sup> aims to “have a long-term structural change in energy systems i.e. shift to renewable energy and energy efficiency. The focus will be on: improving energy efficiency (also in buildings), fostering innovative approaches for energy supply (e.g. local systems) and increasing the local production of renewable energy” (p. iii). The *Orientation Paper for Energy Transition*<sup>138</sup> (2017) further specifies these objectives towards a “smart, integrated energy system” (p. 2) that is “secure and resilient”<sup>139</sup>(p.4), “affordable, fair and equitable”<sup>140</sup> (p.4) and “clean and sustainable”<sup>141</sup> (p.4). This will be achieved by adopting a systems-level approach with an extensive energy master planning process.

The *Implementation Plan*<sup>141</sup> of the *Temporary Working Group of the European Strategic Energy Technology (SET)-Plan on Action 3.2 “Smart Cities and Communities”*<sup>142</sup> aims to support the planning, deployment and replication of 100 ‘Positive Energy Districts’ (PEDs) by 2025 for sustainable urbanisation, supporting the delivery of the Energy Union Strategy<sup>143</sup>, by contributing to the cost reduction and improvement of the performance of low carbon energy technologies through impactful synergetic innovation actions. Cities are the drivers of the process towards PEDs and take a unique role on the pathway towards PEDs as host, facilitators and incubators towards solution providers such as real estate developers, housing providers, energy and mobility providers, technology providers, and planning, engineering and construction companies.

<sup>132</sup> III. The key tasks: (5) Build a green building technology system to promote a significant improvement in building quality  
<sup>133</sup> China Builds Green: <http://cargocollective.com/chinabuildsgreen/6-11-12-Green-Building-Action-Plan> <sup>134</sup> Part I, “1 Development basis” <sup>136</sup> Part III, “The main tasks”  
<sup>135</sup> 13th Five-Year Plan for Building Energy Efficiency and Green Building Development: [http://www.mohurd.gov.cn/wjfb/201703/t20170314\\_230978.html](http://www.mohurd.gov.cn/wjfb/201703/t20170314_230978.html) (in Chinese)

<sup>137</sup> Urban Agenda for the EU, Initial list of Priority Themes, Energy Transition, Point 8  
[https://ec.europa.eu/regional\\_policy/sources/policy/themes/urban-development/agenda/pact-of-amsterdam.pdf](https://ec.europa.eu/regional_policy/sources/policy/themes/urban-development/agenda/pact-of-amsterdam.pdf)

<sup>138</sup> Urban Agenda for the EU, the Orientation Paper of the Energy Transition Partnership,  
[https://ec.europa.eu/futurium/en/system/files/ged/3.orientation\\_paper\\_energy\\_transition.pdf](https://ec.europa.eu/futurium/en/system/files/ged/3.orientation_paper_energy_transition.pdf)

<sup>139</sup> An energy system that has a diverse and extensive range of energy sources that it has control over and storage capacity that it is able to utilise so that it is best able to meet the energy demand of its customers under as broad a range of circumstances as possible. This requirement of the system ensures that the design and configuration of the energy system allows it to mitigate against a diverse range of risks to energy availability ensuring that energy is available to as many of its customers as consistently as is possible.

<sup>140</sup> An energy system that makes effective use of energy utilising it as efficiently as possible so that its energy can be supplied to all its consumers with the same level of service and in the most cost-efficient way. This ensures that energy is supplied at a fair price that people can afford and at which business can maintain their competitiveness.

<sup>141</sup> An energy system that uses energy effectively by minimising demand, minimising wasted energy and then maximising the use of secondary and renewable energy sources to meet its remaining energy demand before utilising high-efficiency co-generation to meet the residual demand. It also minimises harmful gaseous and particulate emissions to the atmosphere to play an important role in improving air quality in cities.

The *Implementation Plan*<sup>144</sup> states that “The European society must move from Zero and Plus Energy Buildings, Positive Energy Blocks and Green Districts to Positive Energy Districts and Cities over time to reach the European energy and climate targets” (p. 6-7), with “interaction and integration between buildings, the users and the regional energy, mobility and ICT system, as well as an integrative approach including technology, spatial, regulatory, financial, legal, social and economic perspectives. Ideally, PEDs will be developed in an open innovation framework, driven by cities in cooperation with industry and investors, research and citizen organisations” (p. 5).

The *EU Winter Package – Briefing Paper*<sup>145</sup> supports that “local energy communities (LECs) can be an efficient way of managing energy at a local community level – with or without a connection to distribution systems” (p. 13). New energy markets and business models for PEDs can be created based on consumer-driven innovation, developed in close working cooperation with national regulators, DSOs/CSOs, property developers, and local energy communities in alignment with the emerging European energy markets supporting the clean energy transition.

### The Global Perspective

In UN's *2030 Agenda for Sustainable Development*<sup>146</sup>, Sustainable Development Goal 7 *Ensure access to affordable, reliable, sustainable and modern energy for all* encompasses a transition to sustainable energy solutions globally by 2030. The *UN New Urban Agenda*<sup>147</sup> includes goals and commitments towards

energy efficiency, renewable energy, clean energy, converting waste to energy, energy-efficient buildings and construction, energy conservation, reliable and modern energy services, smart-grid, district energy systems and community energy plans in the urban context throughout the document<sup>148</sup>.

*Europe-China Clean Energy Center (EC2)*, This project<sup>149</sup> (2010-2015) aims to support the Chinese Government's efforts to shape a more sustainable, environment-friendly and efficient energy sector. EC2's main tasks are to promote increased use of clean energy in China and to support the Chinese Government's efforts to shape a more sustainable, environmentally friendly and efficient energy sector. The EC2 network of excellence acts as an intelligent hub, providing advices to Chinese and European players in the energy sector to:

- Foster EU-China clean energy technology cooperation
- Provide advices on policy-making
- Deliver institutional capacity building
- Raise awareness on clean energy and its benefit to the environment.

The project was a five-year cooperation project funded by the European Union and founded in April 2010 by the European Commission, the National Energy Administration of China and the Ministry of Commerce of China, with the support of the Italian Ministry for the Environment, Land and Sea.

<sup>144</sup> Implementation Plan of the Temporary Working Group of the European Strategic Energy Technology (SET)-Plan on Action 3.2 “Smart Cities and Communities”: [https://setis.ec.europa.eu/system/files/setplan\\_smartcities\\_implementationplan.pdf](https://setis.ec.europa.eu/system/files/setplan_smartcities_implementationplan.pdf)

<sup>145</sup> Hanche, L., Winter, B.M., 2017. The EU Winter Package – Briefing Paper: <http://fsr.eu.europa.eu/wp-content/uploads/The-EU-Winter-Package.pdf>

<sup>146</sup> UN's 2030 Agenda for Sustainable Development: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

<sup>147</sup> UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf>

<sup>148</sup> Points 13, 14, 34, 44, 54, 66, 70, 71, 74, 75, 88, 111, 121

<sup>149</sup> CMCC website, EC2 – The Europe-China Clean Energy Center: <https://www.cmcc.it/projects/ec2-the-europe-china-clean-energy-center>

## “Europe and China could lead the way to stronger commitments for climate change, air quality and other pressing environmental issues”

- Nikolaos Kontinakis,  
Senior Projects Coordinator, EUROCITIES  
Online interview with NTNU  
15 June 2017

### Air Quality

*SmartEcoCities*, This three-year research programme<sup>150</sup> (2015-2018) provided the first systematic comparative analysis of green economy-focused smart city and eco-city initiatives in China and Europe. The project had a particular focus on smart eco-cities, defined as experimental cities where both environmental and economic reforms can be tested and introduced in areas which are both spatially proximate (the surrounding region) and in an international context (through networks of knowledge, technology and policy transfer and learning). This will identify opportunities and pathways for shaping collaborative urban and economic policy responses, engaging the state, the business sector and communities in delivering smart eco-city initiatives that can promote the growth of the green economy.

Clean air, clean energy and clean transportation are closely linked to each other, through the reduction of greenhouse gas emissions and corresponding pollutants. Reducing air pollution will considerably increase quality of life, health and well-being of individuals and communities across the globe.

#### The Chinese Perspective

The *New-type Urbanisation Plan* will “implement clean air projects, strengthen the comprehensive prevention and control of air pollution, and improve urban air quality to an evident level; implement safe drinking water projects, carry out treatment of surface water and groundwater to realise the dual-security of both water quantity and water quality; carry out treatment of left over household garbage; implement heavy metal pollution prevention and control projects, and promote the rehabilitation and treatment of key polluted sites and soil; implement the protection and rehabilitation of forests and wetlands”<sup>151</sup>.



In the *National Key Special Planning - “Thirteen-Five” National Science and Technology Innovation planning*<sup>152</sup>, improving people’s quality of life and promoting sustainable development through increasing the strength of key technologies, are seen as key: “Strengthen the formation mechanism of air pollution, the key technology of pollutant source tracing and analysis, improve the air quality forecast and the pollution early warning technology, strengthen the construction of water quality monitoring and forecasting early warning technique system, such as important water, water source, source area and water conservation area; break

<sup>150</sup> SmartEcoCities, About the project: [https://www.smart-eco-cities.org/?page\\_id=12](https://www.smart-eco-cities.org/?page_id=12)  
<sup>151</sup> New-Type Urbanisation Plan, Chapter 18 “Promote the construction of New-type Cities”: Green Cities and Smart Cities: Priorities for the Construction of Green Cities, Point 5: Comprehensive governance of urban environment

<sup>152</sup> National Key Special Planning - “Thirteen-Five” National Science and Technology Innovation planning: [http://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2016/201703/t20170315\\_131996.htm](http://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2016/201703/t20170315_131996.htm) (in Chinese)

through the health risk control of drinking water quality".  
of drinking water quality"<sup>153</sup>.

### The European Perspective

The *Urban Agenda for the EU* aims to "realise systems and policies to ensure a good air quality for human health. This will cover: legislative and technical aspects linked to a wide range of polluting sources such as cars, industries, agricultural activities, etc"<sup>154</sup> (p. iii). In the *Final Draft Action Plan for Air Quality*<sup>155</sup> (2017), the actions recommended are "Identification of gaps in regulation and implementation on air pollutant emission sources"<sup>156</sup>, "Better air quality planning (governance)"<sup>157</sup>, "Better targeted funding for air quality"<sup>158</sup>, "Better focus on the protection and on the improvement of citizens' health"<sup>159</sup>, "Awareness raising and Knowledge sharing"<sup>160</sup> and "Outreach"<sup>161</sup>.

The *draft Action Plan* highlights that "air quality planning in cities would benefit from complementing the "focus on exceedances of limit values", with an additional emphasis on citizens' health"<sup>162</sup>. The *Action Plan for Urban Mobility*<sup>163</sup>, includes important links between mobility and health aspects: "Motorised traffic in particular can have a negative impact on the health of local residents, while individual mobility behaviour, especially the active modes, can offer a wide range of cross benefits"<sup>164</sup>.

*URGENCHE (Urban reduction of GHG emissions in China and Europe)*, In *URGENCHE*<sup>165</sup> (2011-2014), a team of internationally recognised scientists in the areas of health risk assessment, urban energy demand and supply scenarios, urban planning, environmental science and epidemiology – in close collaboration with city partners in both Europe and China – has developed and applied a methodological framework for the assessment of the overall risks and benefits of alternative greenhouse gas (GHG) emission reduction policies for health and well-being. These GHG reduction policies may affect public health in various ways, such as the choices made regarding the selection of fuels and means for space heating and transport, building codes to improve thermal efficiency, or urban development and zoning. The methodological framework considers GHG emission reductions of energy demand and supply and transport scenarios in urban areas, the effect of these policies, and subsequently the impacts on human health and well-being. The project received funding from the EU's FP7, under Grant Agreement number 265114.

<sup>153</sup> Chapter VI: Perfecting the technology system to support the improvement of people's livelihood and sustainable development

<sup>154</sup> EU Urban Agenda, Initial list of Priority Themes, Air Quality, Point 2: [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>155</sup> Urban Agenda for the EU, Final Draft Action Plan of the Air Quality Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/ua\\_paq\\_-\\_final\\_plan\\_action\\_plan.pdf](https://ec.europa.eu/futurium/en/system/files/ged/ua_paq_-_final_plan_action_plan.pdf)

<sup>156</sup> Part 1.1, page 5 <sup>157</sup> Part 1.2, page 10 <sup>158</sup> Part 2.1, page 13 <sup>159</sup> Part 3.1, page 16

<sup>160</sup> Part 3.2, page 19 <sup>161</sup> Part 3.3, page 22 <sup>162</sup> Point 3.1, page 25

<sup>163</sup> Urban Agenda for the EU, Action Plan of the Urban Mobility Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/pum\\_final\\_actionplan\\_withjointstatement.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pum_final_actionplan_withjointstatement.pdf)

<sup>164</sup> Point 1.2, page 4 <sup>165</sup> URGENCHE website, Project overview: <http://www.urgence.eu/project/>

**“Sponge cities; a city like Wuhan for instance (has a lot of flooding) can probably learn from Amsterdam and Holland, who have a lot of experience with these kinds of problems and have (some) solutions.”**

- Ricky Tsui,  
R&D Director in East Asia, ARUP,  
Online interview with NTNU,  
30 November 2017

## Sponge Cities & Nature-Based Solutions

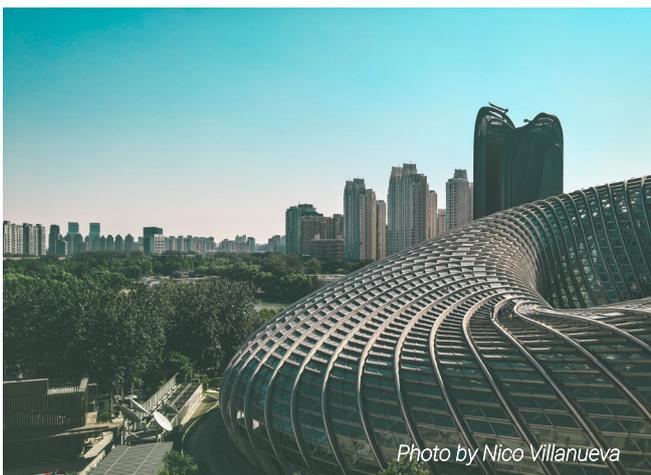
*China-EU Workshop on Water & Air – Challenges and Opportunities (14 – 15/03/2016)*, The EU Delegation to China and Mongolia, the Chinese Ministry for Environment Protection and the Chinese Research Academy for the Environmental Sciences (CRAES) jointly organized the workshop that was held in Beijing the 14th and 15th of March<sup>166</sup>. This workshop, conducted in presence of representatives of the EU DG ENV and the JRC, and their counterparts of China's Ministry of Environmental Protection, provided a great opportunity for policy makers, scientists and stakeholders to engage in a dialogue about their experience on how to deal with the joint global challenges of air and water pollution, related to legislative frameworks, effective implementation, monitoring and remediation of pollution, policy harmonisation and enforcement.

Improving stormwater management with nature-based drainage solutions is a common ambition for China and Europe. “Sponge-like” buildings and urban areas are able to absorb rain- and stormwater and hence avoid or delay an overload of grey urban water management systems and corresponding flooding. The integration of nature-based solutions in urban areas can provide access to green areas in people's everyday life, and in some cases contribute to cleaning the air of pollutants.

### The Chinese Perspective

The *13th Five-Year Plan for Economic and Social Development* aims to create modern, safe, and efficient urban infrastructure systems with rational layouts, complete sets of facilities, and a full range of functions. The upgrading and building of urban water supply facilities will be accelerated<sup>167</sup>. Sponge cities comprise one of eight New Urbanization Projects defined in the Plan: “Support the development of sponge-like buildings, residential areas, roads, squares, parks, and green spaces by improving drainage and rainwater control and regulation facilities in urban areas and taking measures to enable rainwater to be absorbed, retained, stored, purified, used, or drained.”

The *National Key Special Planning - “Thirteen-Five” National Science and Technology Innovation Plan*, mentions strengthening the green ecological infrastructure and promoting sponge city construction in the context of developing new technology for urbanization<sup>168</sup>.



<sup>166</sup> TAIIEF, TAIIEF Expert Mission, China, to support “CHINA-EU Workshop on Water & Air Policy”, 14 to 15 March 2016: <https://circabc.europa.eu/sd/a/aee58104-0cd4-4f75-a57f-db61ce8045af/A%20Summary%20-%20China-EU%20Workshop%20on%20Water%20%26%20Air%20Policy.pdf>

<sup>167</sup> 13th Five-Year Plan for Economic and Social Development, Part VIII “New Urbanization”, Chapter 34 “Develop Harmonious and Pleasant Cities”, Section 2 “Urban Infrastructure”

<sup>168</sup> National Key Special Planning - “Thirteen-Five” National Science and Technology Innovation Plan, Part 2 “The country to build a first-mover advantage”, Chapter VI “Support sound and sustainable development, improving people's livelihood”

The *Special Plan for Science and Technology Innovation in Urbanization and Urban Development in the 13th Five-year Plan* details how to create sponge cities with "natural accumulation, natural infiltration and natural decontamination, (...) multi-disciplinary convergence technologies, design and optimization techniques for rainwater control in buildings and communities, sponge-type park green space construction and ecological restoration technologies"<sup>169</sup> and many other specifications and guidelines. the construction of water quality monitoring and forecasting early warning technique system, such as important water, water source, source area and water conservation area; break through the health risk control of drinking water quality".

### The European Perspective

The *Urban Agenda for the EU*<sup>170</sup> aims to "ensure that the changes in Urban Areas (growing, shrinking and regeneration) are respectful of the environment, improving quality of life. The focus will be on: urban sprawl, development of brownfields and on renaturing / greening Urban Areas" (p. iv).

In the *Draft Action Plan for Sustainable Use of Land and Nature-Based Solutions*<sup>171</sup> (2018), one of the main objectives of the Sustainable Use of Land and Nature-Based Solutions Partnership is to enhance framework conditions for nature-based solutions, and to integrate nature-based solutions into policy, regulation, planning, and financing. Three different

levels of action were identified:

- "At European/national level: EU Directive and regulations (then implemented at national level) often refer to nature-based solutions, but a further level of integration is needed to boost the implementation of nature-based solutions across cities in Europe. Moreover, several initiatives are ongoing in this area (H2020 projects on re-naturing cities, UIA, URBACT) and best practice should become more available for city planners and decision makers to build on;
- At City level: At city level two main issues have been identified. On the one side the lack of knowledge of existing funding instruments, and on the other side the lack of planning instruments has been identified as a barrier to the implementation of nature-based solutions within city project and plans. Reflecting this, the partnership proposes to work on a review of existing funding mechanisms and on the development of appropriate standards to be included within planning instruments;
- At local level (neighbourhood, local scale): The Partnership wants to raise the public awareness on nature-based solutions and its potential and to include social issues within the design of such solutions (through co-creation with civil-society). The partnership recognises the need to start at a local scale given best practice examples available at this level" (p. 18).

<sup>169</sup>Special Plan for Science and Technology Innovation in Urbanization and Urban Development in the 13th Five-year Plan, Third Chapter: The Key Tasks, Box 2 Infrastructure capacity and space utilization

<sup>170</sup>EU Urban Agenda, Initial list of Priority Themes, Sustainable use of land and Nature-Based solutions, Point 9

<sup>171</sup>Urban Agenda for the EU, Draft Action Plan of the Sustainable Use of Land and Nature-Based Solutions Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/final\\_draft\\_action\\_plan\\_27-07-2018v3.pdf](https://ec.europa.eu/futurium/en/system/files/ged/final_draft_action_plan_27-07-2018v3.pdf)

## The Global Perspective

In the UN's *2030 Agenda for Sustainable Development*<sup>172</sup>, Sustainable Development Goal 6 *Ensure availability and sustainable management of water and sanitation for all*, includes, amongst others, water security, management of water resources, recycling and waste water, and water efficiency, as well as air pollution<sup>173</sup>.

Also the *UN New Urban Agenda*<sup>174</sup> includes air quality as well as integrated water resource planning and management<sup>175,176</sup>, including "conservation and sustainable use of water by rehabilitating water resources within the urban, peri-urban and rural areas, reducing and treating wastewater, minimizing water losses, promoting water reuse and increasing water storage, retention and recharge, taking into consideration the water cycle"<sup>177</sup>.

*PIANO*, The overall objective of *PIANO*<sup>178</sup> (Policies, Innovation And Networks for enhancing Opportunities for China Europe water cooperation) is to create a strategic cooperation partnership for water research and innovation between Europe and China, promoting the creation of networks of companies (including SMEs), entrepreneurs, not for profit organizations, policy makers, regulators and funding bodies to create business and social opportunities for China Europe Water Cooperation. Also considering the expected impact, *PIANO* aims at achieving this overall objective through the following six specific objectives:

- Strengthening and expanding the existing network of the China-Europe Water Platform (CEWP) to cover all actors relevant for cooperation between China and Europe in the water research and innovation domain;
- Identification of European technological water innovations and areas for joint development of innovative technological solutions that have a potential for their implementation in China;
- Identification of drivers and barriers concerning this cooperation and elaboration of strategies to overcome such barriers and take advantage of drivers for the implementation and replication of technological water innovations in China;
- Promotion of knowledge exchange and policy dialogue to build an enabling environment for the uptake of technological water innovations with a great potential for implementation, further replication and market uptake in China;
- Consolidation of a shared strategic research and innovation agenda (SRIA) between Europe and China water sector;
- Effective dissemination and mainstreaming of the project results to Chinese, European stakeholders and international target audiences.

The project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 642433.

<sup>172</sup>UN's 2030 Agenda for Sustainable Development: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>  
<sup>173</sup>Goals 3, 11, 12 <sup>174</sup>UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf>  
<sup>174</sup>Water: Points 13, 34, 64, 70, 71, 72, 73, 74, 88, 119, 120, 123 <sup>175</sup>Air: Points 13, 54, 55, 58, 64, 65, 67, 71, 119 <sup>176</sup>Point 73  
<sup>177</sup>*PIANO* (Policies, Innovation and Networks for enhancing Opportunities for China Europe Water Cooperation) website: <http://project-piano.net/>, page 21

*Collaborative Research on Flood Resilience in Urban areas (CORFU)*, The overall aim of CORFU<sup>179</sup> (2010-2014) was to enable European and Asian partners to learn from each other through joint investigation, development, implementation and dissemination of short to medium term strategies that would enable more scientifically sound management of the consequences of urban flooding in the future. Flood impacts in urban areas--potential deaths, damage to infrastructure and health problems in the first instance, and their consequent effects on individuals and communities--and possible responses were assessed by envisaging different scenarios of relevant drivers: urban development, socio-economic trends and climate changes<sup>180</sup>. The project was funded under the EU's FP7, grant agreement number 244047.

*China Europe Water Platform (CEWP)*, Water management is a crucial natural resource of strategic importance to China and Europe to avert a future global water crisis<sup>181</sup>. It has a large impact on social and economic development and stability, especially achieving water supply security, food security and ecological security including the ability to sustain a sound vegetation cover mitigating climate change. The China Europe Water Platform (CEWP) is intended to promote policy dialogue, joint research and business development in the water sector. It opens a new chapter in the cooperation between China and Europe based on mutual interest, benefit and funding, thus emphasizing that it is a cooperation between equal partners. From the beginning of 2018, CEWP has strengthened its activities with € 6 million support from the EU through the Partnership Instrument (PI).

*URBAN GreenUP*, URBAN GreenUP's (2017-2022) goal is to mitigate the effects of climate change and increase sustainability of cities through innovative nature-based solutions with URBAN GreenUP Renaturing Urban Plans. These will include four categories: re-naturing urbanisation, singular green infrastructure, water interventions and non-technical interventions. Three European frontrunner cities will demonstrate and validate the URBAN GreenUP methodology while five follower cities (2 European and 3 non-European)

will enhance the replication potential at European and international level. The main outcome from this project will be urban green transformation but it is also expected to see results such as improvement of life quality in urban areas and raised awareness on the importance of environment preservation among citizens, new market opportunities<sup>182</sup>. The project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 730426.

<sup>179</sup> Collaborative Research on Flood Resilience in Urban areas (CORFU): <http://www.corfu7.eu/>

<sup>180</sup> European Commission: <https://cordis.europa.eu/project/rcn/93523/factsheet/en>

<sup>181</sup> China Europe Water Platform (CEWP) website: <https://www.cewp.eu/>

<sup>182</sup> URBAN GreenUP : <https://www.urbangreenup.eu/about/about.kl>

**“Local people with connections to the global community (who understand the local problems and local context), who can bring the best solutions and ideas back to China, and understand what is possible in specific cities”**

- Ricky Tsui,  
R&D Director in East Asia, ARUP,  
Online interview with NTNU,  
30 November 2017

## Circular Economy

GrowGreen, GrowGreen (2017-2022) aims to create climate and water resilient, healthy and liveable cities by investing in nature-based solutions. Partner cities will demonstrate a replicable approach for the development and implementation of city nature-based solutions strategies. The project will provide a platform where other cities are encouraged to develop and implement similar strategies thus creating a global demand for nature-based solutions<sup>183</sup>. The project has received funding from the European Union’s Horizon 2020 Research and Innovation Programme under Grant Agreement No 730283.

The current economic model of “take-make-waste” is reaching its physical limits and must be replaced to avoid resource scarcity, waste accumulation, pollution and climate change. Acknowledging planetary boundaries, circular economy means that all natural resources are re-used so societies can be run over time without waste. Environmental analysis can contribute to show how society’s energy use and material flows affect nature, society and economy, and how this can be balanced with available resources. Material stream analysis, life cycle analysis, information technology and systems thinking can be used to shape solutions in production and consumption and end of product life with a minimal environmental footprint. A circular economy aims to keep products, components, and materials at their highest utility and value at all times. A change towards a circular economy will be of great importance for value creation, economic growth and waste- and resource management in the future. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital. Transitioning to a circular economy represents a systemic shift that redefines growth, builds long-term resilience, creates business and economic opportunities, and provides environmental and societal benefits<sup>184, 185</sup>.

### The Chinese Perspective

The *13th Five-Year Plan for Economic and Social Development* underlines that “We will stay aware of the need for the economical, efficient, and circular use of resources, bring about a fundamental change in the way resources are utilized, and strengthen conservation



Photo by Anthony Delanoix

<sup>183</sup>GrowGreen: <http://growgreenproject.eu/about/>

<sup>184</sup>NTNU, Strategic Research Areas, Sustainability: <https://www.ntnu.edu/sustainability>

<sup>185</sup>Ellen Macarthur Foundation, What is a circular economy? A framework for an economy that is restorative and regenerative by design: <https://www.ellenmacarthurfoundation.org/circular-economy/concept>

management throughout the entire process of resource use, thus significantly raising resource utilization efficiency<sup>186</sup>. This includes guidelines to accelerate circular use of resources in industry as well as urban areas, with responsibilities for manufacturers as well as consumers.

Circular development is also addressed in the *New-type Urbanisation Plan (2014-2020)*, which aims to "Improve and promote the urbanisation of green, circular and low-carbon development, implement the most stringent ecological and environmental protection system, and set up patterns of use of space, industrial structure, mode of production and way of life, which conserve resources and protect the environment"<sup>187</sup>.

### The European Perspective

The *Initial list of Priority Themes* in the *Urban Agenda* for the EU<sup>188</sup>, includes the objective to "increase the re-use, repair, refurbishment and recycling of existing materials and products to promote new growth and job opportunities. For instance, additional measures to increase resource productivity by 30% by 2030 could boost GDP by nearly 1%, while creating 2 million additional jobs. The focus will be on: waste management (turn a waste into a resource), sharing economy, resource efficiency" (p. iii).

The *Final Action Plan Part 1 for Circular Economy*<sup>189</sup> (2018), includes circular consumption, urban resource management, circular business enablers and drivers, and governance, as the main themes, addressing legislation, funding and collaborative knowledge as challenges.

The *Draft Action Plan Part 2 for Circular Economy*<sup>190</sup> (2018) refers to "concrete actions to realise a city where residents and entrepreneurs do not think in terms of waste, but in terms of resources with permanent economic and social value"<sup>191</sup>. This includes, amongst others, urban resource centres for residents and enterprises, legislation, an interactive portal, tools, and investment guidance.

In the document, one of the actions states that "The Partnership will define a robust and comprehensive framework to develop and implement solutions for urban circular re-use of space and buildings as a part of a strategy for better urban management and a transition towards circular economy. There is an important potential to reduce the use of land in an urban context. Such actions will also contribute to enhance more attractive, healthy and sustainable urban environments"<sup>192</sup>. It is further emphasized that the "real challenge for an urban authority is to move from "urban planning" to a new model of "urban re-use management", where the city's planning moves towards city management: "how the functional transition of the city is developed towards new, innovative functions at a social level" (p. 16). In this context of defining strategies for urban re-use of buildings and spaces, "there is a need for an Urban Agency acting as a facilitator in the functional transition of parts of the city, which can have the dual objective of managing the public buildings included in the urban reuse program and connecting the potential demand for new functions with private property (private to private match), following diversified models for public and private buildings" (p. 16).

<sup>186</sup>13th Five-Year Plan for Economic and Social Development: Part X "Ecosystems and the Environment", Chapter 43 "Promote Economical and Intensive Resource Use", introductory statement

<sup>187</sup> New-type Urbanisation Plan: Part 7 "Transform and Improve the Urbanization System and Mechanism", Chapter 27 "Strengthen the Ecological Protection System"

<sup>188</sup>European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf), Point 5 Circular Economy

<sup>189</sup>Urban Agenda for the EU, Final Action Plan Part 1 of the Circular Economy Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/ua\\_ce\\_final\\_action\\_plan\\_part\\_i.pdf](https://ec.europa.eu/futurium/en/system/files/ged/ua_ce_final_action_plan_part_i.pdf)

<sup>190</sup>Urban Agenda for the EU, Draft Action Plan Part 2 of the Circular Economy Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/ua\\_ce\\_draft\\_action\\_plan\\_part\\_ii\\_-\\_final\\_12.07.2018\\_0.pdf](https://ec.europa.eu/futurium/en/system/files/ged/ua_ce_draft_action_plan_part_ii_-_final_12.07.2018_0.pdf)

<sup>191</sup>Part 1.6, page 9 <sup>192</sup>Part 2.2.1, page 13

The other actions promoted in the *Draft Action Plan Part 2* are “Analysis of the regulatory obstacles and drivers for boosting an urban circular bioeconomy”<sup>193</sup>, “Develop City Indicators for Circular Economy”<sup>194</sup> and “Circular Economy Financial Incentives - Develop a “Pay-as-you-throw” toolkit with coaching”<sup>195</sup>.

### The Global Perspective

The UN's *New Urban Agenda*<sup>196</sup> states a commitment to strengthening the sustainable management of resources with particular attention to the environmentally sound management and minimization of waste “that strives to transition to a circular economy while facilitating ecosystem conservation, regeneration, restoration and resilience in the face of new and emerging challenges”<sup>197</sup> (p. 19). Many of the commitments in the UN NUA has aspects that point towards circular economy, and a more holistic approach to sustainable urban planning and urban resource management<sup>198</sup>.



Photo by Nick Karvounis

*SiEUGreen*, *SiEUGreen*<sup>199</sup> (2018-2021) aspires to enhance the EU-China cooperation in promoting urban agriculture for food security, resource efficiency and smart, resilient cities. Building on the model of zero-waste and circular economy, it will demonstrate how technological and societal innovation in urban agriculture can have a positive impact on society and economy, by applying novel resource-efficient agricultural techniques in urban and peri-urban areas, developing innovative approaches for social engagement and empowerment and investigating the economic, environmental and social benefits of urban agriculture. The project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement No 774233.

*Sino-German Dialogue Forum on the Environment and Climate Change: Exploring Solutions in Urban Solid Waste Management (06/06/18)*, The Sino-German Dialogue Forum on Environment and Climate Change: Exploring Solutions in Urban Solid Waste Management<sup>200</sup> took place on Wednesday June 6, 2018 in Beijing, China. Bringing together more than 180 prominent speakers and participants from politics, business, academia and finance, the Forum was dedicated to the topic of urban solid waste management and related themes such as Circular Economy, the 3R principle (Reduce, Reuse, Recycle) and Public-Private Partnerships (PPPs).

<sup>193</sup>Part 2.1.1, page 10 <sup>194</sup>Part 2.2.2, page 19 <sup>195</sup>Part 2.2.3, page 22

<sup>196</sup>UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf> <sup>197</sup>Point 71

<sup>198</sup>Points 44, 45, 47, 48, 49, 51, 53, 56, 58, 60, 63, 65, 66, 70, 71, 72, 73, 74

<sup>199</sup>CORDIS, *SiEUGreen – Sino-European Innovative and Smart Cities*: <https://cordis.europa.eu/project/rcn/212412/factsheet/en>

<sup>200</sup>Sino-German Dialogue, *Sino-German Dialogue Forum on Environment and Climate Change: Exploring Solutions in Urban Solid Waste Management*: <https://sino-german-dialogue.org/home>

**"For transport-oriented development, the Chinese are looking to Hong Kong and not Europe, because the similarities are much bigger with HK. Difficult to import systems from Europe on these issues in China (again, because of scale). In city development, transport-related issues have to be resolved first at the early stage."**

- Ricky Tsui,  
R&D Director in East Asia, ARUP,  
Online interview with NTNU,  
30 November 2017

## Sustainable Urban Mobility

Too many vehicles in cities are powered by fossil fuel, alternative fuels are under-used; the number of vehicles on urban roads should be reduced in favour of walking, biking and public transport, but public transport services, timetables, ticketing and interchanges are not always well connected. Sustainable, seamless mobility for citizens and businesses can make cities more attractive and competitive. Tackling congestion, improving air quality, accessibility and sustainability in most cities will require substantial changes in the transport system and operations, and in the mobility behaviour of people and businesses<sup>201</sup>.

### The Chinese Perspective

The *13th Five-Year Plan for Economic and Social Development*, touches upon sustainable and green urban mobility and transportation several places, and states a goal to make green transport universal<sup>202</sup>. The plan promotes green transport services such as bicycling and public transport<sup>203</sup> and aims to develop smart, integrated, and eco-friendly transportation networks<sup>204</sup>. It states the intention to "make headway in the low-carbon development of transportation by seeing that resources are used intensively and economically and by promoting the application of standard modern transportation equipment and energy-efficient, environmentally friendly means of transport"<sup>205</sup>. Priority is given to the development of green mobility and public transport: "In urbanised areas, we will actively develop intercity and municipal (suburban) rail services and encourage the use of

existing tracks to operate intercity rail services so as to form core networks of rail transit lines, running at different levels, which ensure efficient connections between small, medium, and large cities as well as towns. We will give priority to the development of public transportation, speed up the development of urban rail transit, bus rapid transit, and other forms of mass-public transportation, and will encourage people to use eco-friendly transportation to get around"<sup>206</sup>.

The *National Key Special "Thirteen-Five" National Science and Technology Innovation Plan* (2016) states the importance of "Facing the construction of "safe traffic, efficient transportation, green transportation, harmonious traffic" major needs, vigorously develop new energy, efficient and high security system technology and equipment, improve the modern transportation core technology system, cultivate new energy vehicles, high-end rail traffic, civil aviation and other emerging industries"<sup>207</sup>.

In the general requirements of the "*Thirteen-Five*" *modern comprehensive transportation system development plan*<sup>208</sup>, the main goal by 2020 is to "establish a safe, convenient, efficient, green, modern comprehensive transportation system, to basically realize the modernization of transport in some areas and sectors. ... Green safety level. Urban public transport, taxi and urban distribution areas of rapid development of new energy vehicles".

<sup>201</sup> GrowSmarter, Smart Solutions 3: Sustainable Urban Mobility; <http://www.grow-smarter.eu/solutions/sustainable-urban-mobility/>  
<sup>202</sup> 13th Five-Year Plan for Economic and Social Development, Part VIII: New Urbanization; Box 13. New Urbanization Projects: 5. Green and forest cities

<sup>203</sup> Part X: Ecosystems and the Environment: Chapter 43 Promote Economical and Intensive Resource Use, Section 6 Frugal Life Styles

<sup>204</sup> Part VII: Chapter 29 Develop Better Modern Comprehensive Transportation Systems

<sup>205</sup> Part VII: Chapter 29, Section 4: Low-carbon, smart, and Safe Transportation Services

<sup>206</sup> Part VII: Chapter 29, Section 2 Modern and Efficient Urban and Intercity Transportation

<sup>207</sup> National Key Special "Thirteen-Five" National Science and Technology Innovation Plan, Chapter V, Construction of a modern industrial technology system with international competitiveness, VI: Developing modern transportation technology and equipment

<sup>208</sup> National Key Special "Thirteen-Five" National Science and Technology Innovation Plan  
[http://www.mot.gov.cn/zhuanti/shisanwujtysfzgh/guihuawenjian/201703/t20170301\\_2170528.html](http://www.mot.gov.cn/zhuanti/shisanwujtysfzgh/guihuawenjian/201703/t20170301_2170528.html) (in Chinese)

## The European Perspective

The *Initial list of Priority Themes* in the *Urban Agenda for the EU*<sup>209</sup>, under *Urban Mobility*<sup>210</sup>, states that "The objectives are to have a sustainable and efficient urban mobility. The focus will be on: public transport, soft mobility (walking, cycling, public space) and accessibility (for disabled, elderly, young children, etc.) and an efficient transport with good internal (local) and external (regional) connectivity" (p. iv).

In the *Action Plan for Urban Mobility*<sup>211</sup> (2018), no less than nine actions that the Partnership will implement, are presented: "*Reinforcing multi-level cooperation and governance*", "*Reinforcing the uptake of sustainable urban mobility planning*", "*Evaluating best practices in convenient access to public transport*", "*Scaling up innovative clean buses*", "*Developing guidelines on infrastructure for active mobility supported by relevant funding*", "*Promoting sustainable and active mobility behaviour*", "*Reducing diversity of Urban Vehicle Access Regulations (UVAR)*", "*Exploring the deployment of New Mobility Services*" and "*Setting up a European framework for fostering urban mobility innovation*" (p. 11-29).

The European Commission has actively promoted the concept of sustainable urban mobility planning for several years, and the concept has gained considerable momentum in recent years. An increasing number of towns and cities across Europe have been making good progress in developing and implementing such plans, often benefiting from significant support from e.g. the European Structural

and Investment Funds. In many urban areas, urban transport planning is still focused on infrastructure projects, rather than fostering new urban mobility paradigms and patterns. In the *Action Plan*, it is stated that "it is important to link successfully political vision, strategic planning, and the needs and expectations of citizens and businesses"<sup>212</sup>.

## The Global Perspective

In the UN's *2030 Agenda for Sustainable Development*<sup>213</sup>, in Goal 11 *Make cities and human settlements inclusive, safe, resilient and sustainable*, urban mobility is mentioned: "By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons"<sup>214</sup>.

The UN's *New Urban Agenda*<sup>215</sup> contains a whole host of references to different aspects of urban mobility, also in the chapter on *Our Shared Vision*: "Promote age- and gender-responsive planning and investment for sustainable, safe and accessible urban mobility for all and resource-efficient transport systems for passengers and freight, effectively linking people, places, goods, services and economic opportunities"<sup>216</sup>. There is also a focus on non-motorized mobility and the safety of pedestrians and cyclists, with encouragement to develop and expand "...safe, sufficient and adequate pedestrian and cycling infrastructure..."<sup>217</sup>.

<sup>209</sup>European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>210</sup>Point 10 <sup>212</sup>Point 2.2, page 13  
[https://ec.europa.eu/futurium/en/system/files/ged/pum\\_final\\_actionplan\\_withjointstatement.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pum_final_actionplan_withjointstatement.pdf)

<sup>213</sup>UN's 2030 Agenda for Sustainable Development:  
<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>  
<sup>214</sup>Point 11.2 <sup>215</sup>UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf> <sup>216</sup>Point 13 (f), page 7 <sup>217</sup>Point 118, page 30

There is an emphasis on integrating transport and mobility plans into overall urban and territorial plans and promoting a wide range of transport and mobility options, in particular by supporting "A significant increase in accessible, safe, efficient, affordable and sustainable infrastructure for public transport, as well as non-motorized options such as walking and cycling, prioritizing them over private motorized transportation" <sup>218</sup>.

*Viajeo PLUS*, *Viajeo PLUS*<sup>219</sup> (2013-2016) was an EC funded FP7 (Grant agreement ID: 605580) international cooperation project. The project aimed to benchmark outstanding solutions for innovative and green urban mobility in Europe, Latin America, China and Singapore and subsequently facilitate the uptake of these solutions across different cities in these regions, and in Mediterranean Partner Countries (MPCs). *Viajeo Plus* organised interactive showcases, meetings and workshops to allow stakeholders to gain first-hand experience of innovative solutions, exchange knowledge and information. This project also developed recommendations to the EC for future collaboration among cities and for cooperative research initiatives.



<sup>219</sup>CORDIS, Final Report Summary - VIAJEO PLUS (International Coordination for implementation of innovative and efficient urban mobility solutions): <https://cordis.europa.eu/project/rcn/109827/reporting/en>

<sup>218</sup>Point 114 (a)



Photo by Anastasia Dulgier

# 04

## SMART & INNOVATIVE CITIES



Photo by Eugene Production

**“Managing urban areas has become one of the most important development challenges of the 21st century. Our success or failure in building sustainable cities will be a major factor in the success of the post-2015 UN development agenda”<sup>220</sup>**

*- John Wilmoth,  
Director of UN DESA's Population Division,  
press-briefing at UN headquarters in New York,  
10 July 2014*

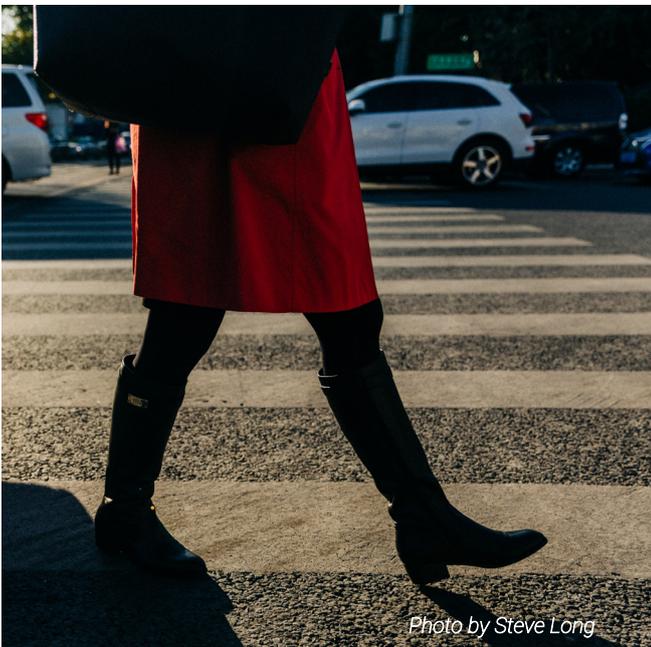


Photo by Steve Long



Photo by Vasela Vaclavikova

## Recommendation

The vitality and viability of cities is increasingly based on their ability to use and integrate digital services, technologies and solutions with strategic networks and partnerships. Today's urbanites live their lives in connected virtual spaces, pulsating with real-time information, intelligent devices, remote-access databases and participatory events. For cities, integrating these rapidly developing digital platforms in their long-term governance systems and physical environments presents a series of relevant challenges and opportunities.

Cities engage in partnerships with universities and industries, other public sector actors, and civil society, to gain access to a wealth of local knowledge and experiences, for planning, collective decision making and reflection, and, overall, to create more sustainable, longer lasting solutions and foster economic and social development. A public-private partnership (PPP) is a cooperative arrangement between two or more public and private sectors, typically of a long-term nature, to provide a public asset or service, in which the private party bears significant risk and management responsibility (World Bank, 2012). In the most recent years, these partnerships have been further extended into public-private-people partnerships (PPPP), including citizens and communities in the long term cooperation. Such participatory approaches enable individuals and communities to play an active and influential part in decisions which affect their lives.

*We recommend that Europe and China cooperate to develop successful approaches for smart, innovative cities and communities better and faster. Digital innovation in public sector, participatory approaches and public-private partnerships are needed for cities and communities to develop better urban services and infrastructures, de-risk, become more adaptive to external change and alleviate policy implementation bottlenecks. In short, to deal with any future challenges.*

## Public Procurement & Urban Investments

Public administrations can be more efficient, more effective, and more citizen and business-friendly. New public procurement strategies in urban areas are vital in reassessing the approach to purchasing, professionalizing public buyers, reducing bureaucratic obstacles, and taking gains from the benefits of the digital revolution, and to create policies aimed at a more innovative, green and socially-inclusive economy.

### The Chinese Perspective

*The New-Type Urbanisation Plan*<sup>221</sup> recommends use of market mechanisms to improve the level and diversity of urban public services, and to expand the scale of public procurement, to advance education, labour income, medical services, services for the elderly and housing.

The *13th Five-Year Plan for Economic and Social Development* aims to further boost infrastructure and public utility sectors by loosening market restrictions, promoting public-private partnerships and encourage use of non-public funding in these sectors<sup>222</sup>. Furthermore, it aims to encourage procurement of innovative products and services in major infrastructure projects as well as in projects promoting well-being<sup>223</sup>. The scope of government service procurement will be expanded and competition-based procurement of third party services will be promoted, to accelerate the opening of competitive operation in industries such as power, civil aviation, railway, petroleum, natural gas, postal services, and urban utilities, further open the banking, education, medical service, culture, internet, commerce, and logistics sectors, and carry out comprehensive trials to further open up the

<sup>220</sup><http://www.un.org/en/development/desa/news/population/world-urbanization-prospects-2014.html>

<sup>221</sup>New-Type Urbanisation Plan, Part 5, Chapter 16 "Improve the level of basic urban public service", Section 3 "Improve the basic public service system"

<sup>222</sup>13th Five-Year Plan for Economic and Social Development, Part III "New Systems for Development", Chapter 17 "Innovate and Improve Macroeconomic Regulation", Section 4 deals with "Investment and Financing Systems"

<sup>223</sup>Part V "An Optimized Modern Industrial System", Chapter 23 "Develop Strategic Emerging Industries", Section 4 "A better Environment for Developing Emerging Industries"

service sector. All types of discriminatory regulations will be eliminated and policies will be improved to ensure that all types of non-governmental capital are able to participate on an equal footing in the development of sectors such as medical services, education, childcare and early childhood education, elderly care, and sports<sup>224</sup>.

The same document describes how to develop systems for green labelling, green certification, and green government procurement in a coordinated manner, combined with acceleration of the formation of industrial systems for the green supply chain<sup>225</sup>. At the same time, service provision will be diversified. The government will no longer directly operate public services that can be provided through service procurement. For public services that can be provided through public-private partnerships, extensive efforts will be made to attract nongovernmental investment. A catalogue for the procurement of public services completed and released, and competitive mechanisms through means such as franchising, designated commissioning, strategic cooperation, and competitive evaluation will be introduced<sup>226</sup>.

### The European Perspective

*Innovative and responsible public procurement* is one of the themes on the *Initial list of Priority Themes*<sup>227</sup> in the Urban Agenda for the EU<sup>228</sup>, where it is stated that "The objective is to use this powerful tool to address social and environmental objectives and to do more with less. This will cover innovative approaches in procurement" (p. iv).

In the fall of 2018, the EU's *Public procurement strategy*<sup>229</sup>

was released, and the strategy focuses on six strategic policy priorities. The European Commission's public procurement strategy is rethinking the entire approach to purchasing through ensuring wider uptake of innovative, green, and social procurement, professionalising public buyers, cutting red-tape, and capitalising on the benefits of the digital revolution so that public administrations can be made more efficient, more effective, and more citizen and business-friendly. This includes policies aimed at creating a more innovative, green and socially-inclusive economy. The strategy also states that "A substantial part of public investment within the European Union is spent through public procurement (around €2 trillion per year, representing 14% of EU GDP), and high quality public services depend on modern, well-managed and efficient procurement". It goes on to say "The public sector can also use procurement to boost jobs, growth and investment, and to create an economy that is more innovative, resource and energy efficient, and socially-inclusive".

The European Commission also released documents on *Green Public Procurement*<sup>230</sup> and *Public Procurement of Innovative solutions (PPI)*<sup>231</sup> in late 2018, with the aim of helping stimulate a critical mass of demand for more sustainable goods and services, and contributing to the creation of a strong and stable demand for innovative solutions through government procurement.

### The Global Perspective

In the UN's *2030 Agenda for Sustainable Development* one finds the 17 Sustainable Development Goals (SDGs), and Goal 12 *Responsible Consumption and Production* states

<sup>224</sup>Chapter 24 "Increase Quality and Efficiency within the Service Sector", Section 3 "Better Institutions and Policies for Service Sector Development"

Chapter 48 "Develop Green and Environmentally Friendly Industries", Section 1 "Environmentally Friendly Goods and Services"

<sup>226</sup>Part XV "Support for Public Wellbeing", Chapter 61 "Provide More Public Service", Section 3 "Innovative Public Service Provision"

<sup>227</sup>The list was established based on a survey among Member States and representatives of urban and regional authorities in July 2015 organised by the Netherlands and under consideration of the Commission Staff Working document ('Results of the Public Consultation on the key features of an Urban Agenda for the EU, SWD (2015) 109 final/2), published on 27 May 2015 as well as the results of three thematic workshops on this matter (organised by the European Commission in September 2015).

<sup>228</sup>Urban Agenda for the EU – Pact of Amsterdam: [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>229</sup>EC's Public procurement strategy: [https://ec.europa.eu/growth/single-market/public-procurement/strategy\\_en](https://ec.europa.eu/growth/single-market/public-procurement/strategy_en)

<sup>230</sup>EC's Green Public Procurement: [http://ec.europa.eu/environment/gpp/index\\_en.htm](http://ec.europa.eu/environment/gpp/index_en.htm)

<sup>231</sup>EC's Public Procurement of Innovative Solutions: <https://ec.europa.eu/digital-single-market/en/public-procurement-innovative-solutions>

as a target to “Promote public procurement practices that are sustainable, in accordance with national policies and priorities”<sup>232</sup>(p. 25).

The *UN's New Urban Agenda*<sup>233</sup> mentions the importance of sustainable, open and transparent procurement and procurement mechanisms several times, and states that “We also encourage the adoption of building performance codes and standards, renewable portfolio targets, energy-efficiency labelling, retrofitting of existing buildings and public procurement policies on energy, among other modalities as appropriate, to achieve energy-efficiency targets”<sup>234</sup>(p. 30). The *UN NUA* mentions the importance of sustainable, transparent and accountable investment in urban development several places, and states that “We will promote best practices to capture and share the increase in land and property value generated as a result of urban development processes, infrastructure projects and public investments”<sup>235</sup>(p. 34).



<sup>232</sup>UN SDG Goal 12 Responsible Consumption and Production, point 12.7: <https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>  
<sup>233</sup>UN New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf>  
<sup>234</sup>Point 121  
<sup>235</sup>Point 137

## Productive Cities & Urban Entrepreneurship

Urban populations and urban economies grow across the globe, and managing urban areas and providing opportunities for all residents is of great importance to national prosperity, international progress and global stability. Clear and consistent national policies, robust institutions, accountable and well-resourced local governments, universal access to essential services, an inclusive approach to development, and well-informed and engaged citizens, are key for cities to reach their potential as sustainable engines for growth.

### The Chinese Perspective

*The Made in China 2025 Initiative*<sup>236, 237</sup> presents an important element of the strategic framework for the economic development of Chinese cities. Manufacturing innovation centres and industrial design centres will be built and developed, demonstration centres for new industrialization will be established, and advanced manufacturing centres will be cultivated.

The *New-Type Urbanisation Plan*<sup>238</sup> aims to develop a distinctive urban industrial system that is in accordance with the carrying capacity of the urban resources and environment, natural factor endowment and comparative advantages. The overall aim is building an environment that is conducive for business, entrepreneurship and employment. The plan promotes the transformation of metropolis and large cities into service economy-based industrial structures, accommodates the diverse needs of the consumers, improves the level of services, and expands service

provision and quality. Furthermore, traditional industries will be transformed and upgraded, and the specialised division of labour and responsibilities between cities will be strengthened. The plan also supports creation of innovation infrastructures such as innovation centres, innovation clusters, innovation service providers, and risk investment institutions, and strengthens IPR usage and protection. The overall aim is to create a policy environment supporting innovation-driven development promoting technological, business model and management innovation, and to establish mechanisms for collaborative innovation between industry and academia.

The *National Key Special "Thirteen-Five" National Science and Technology Innovation Plan*<sup>239</sup> supports that Beijing and Shanghai will build globally influential science and technology centres. The upgrading of provincial high-tech zones will be steadily promoted, the new high-tech area in the central and western regions will be promoted, and the upgrading of the hi-tech zone in the country will be accelerated by promoting national high-tech zones in most of the cities in the country. It is planned to identify an Innovation-Driven Development Demonstration County by selecting the characteristic county (city) with demonstration driving ability. Focus on the construction of scientific and technological cooperation platform(s) between research units and counties (cities), cultivate and strengthen agricultural and hi-tech industry, develop transformation and innovation service platform of the county (city), promote science and technology achievements, and enhance the evaluation of innovation drive.

<sup>236</sup>Notice of the State Council on Printing and Distributing "Made in China 2025": [http://www.gov.cn/zhengce/content/2015-05/19/content\\_9784.htm](http://www.gov.cn/zhengce/content/2015-05/19/content_9784.htm) (in Chinese)

<sup>237</sup>China Manufacturing 2025 - Putting Industrial Policy Ahead of Market Force. European Union Chamber of Commerce in China. 2015

<sup>238</sup>New-Type Urbanisation Plan, Part 5 "Increase Urban Sustainable Deployment Capabilities"

<sup>239</sup>National Key Special "Thirteen-Five" National Science and Technology Innovation Plan: [http://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2016/201703/t20170315\\_131996.htm](http://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2016/201703/t20170315_131996.htm) (in Chinese)

## The European Perspective

The abovementioned Chinese perspective from the NUP is highly comparable to the *Smart Specialisation Policies of regions in the European Union*<sup>240</sup>, in which it is stated that Europe needs to empower its regions and help them create value through embracing innovation, digitisation, decarbonisation and developing people's skills. In 2017, the European Commission proposed a new set of actions to further help Europe's regions invest in their niche areas of competitive strength ("smart specialisation") and generate the innovation, resilience and growth needed. Introduced in 2014 in all regional policy programmes, smart specialisation has made a real difference in the way European regions are designing their innovation strategies, creating or reinforcing cooperation at all levels, especially with local business spheres. The Commission is building on this positive experience with two pilot projects on Tailored support for the specific challenges of regions facing industrial transition and Interregional innovation partnerships supported by *EU funds*<sup>241</sup>. In Pilot action 2 it is stated that "The aim is to help certain regions to boost their innovation capacity, remove investment barriers, equip citizens with the right skills and prepare for industrial and societal change, and to identify and scale up 'bankable' interregional projects that can create European value chains in priority sectors such as big data, bioeconomy, resource efficiency, connected mobility or advanced manufacturing" (p. 2). The Commission will also look at ways of facilitating further synergies and combinations between the different innovation, growth and competitiveness EU programmes and instruments that currently exist.

**"I think that would be interesting to involve more in cooperation projects the private sector, not just large industry, but also small and medium enterprises and start-ups working and testing innovative solutions in fields like sustainable energy and urban agriculture. Their involvement might be more challenging due to language and resources barriers but could have the potential to offer opportunities for coordination and scaling up sustainable "niche" practices and solutions"**

-Giovanna Giuffrè,  
Partner, ISINNOVA,  
Online interview with NTNU,  
28 June 2017

## The Global Perspective

The *UN New Urban Agenda's* states that "We commit ourselves to promoting an enabling, fair and responsible business environment based on the principles of environmental sustainability and inclusive prosperity, promoting investments, innovations and entrepreneurship"<sup>242</sup>(p. 17). In the document one also finds commitments to fostering a vibrant urban economy is, and strengthening entrepreneurship is stated as one of the factors in reaching such a goal<sup>243</sup>.

<sup>240</sup>Smart Specialisation Policies of Regions in the European Union: [https://ec.europa.eu/commission/news/smart-specialisation-european-regions-2017-jul-18\\_en](https://ec.europa.eu/commission/news/smart-specialisation-european-regions-2017-jul-18_en)

<sup>241</sup>Tailored support for the specific challenges of regions facing industrial transition and Interregional innovation partnerships supported by EU funds: [http://ec.europa.eu/regional\\_policy/sources/docgener/guides/smart\\_spec/pilot\\_actions\\_en.pdf](http://ec.europa.eu/regional_policy/sources/docgener/guides/smart_spec/pilot_actions_en.pdf)

<sup>242</sup>UN New Urban Agenda: Point 58

<sup>243</sup>Point 40

## Public-Private Partnership

**“Currently, private business, particularly foreign-invested enterprises in China (FIEs), have found it relatively difficult to participate in PPP projects in the sectors of urbanisation or environmental protection. To better leverage the investment from public sector and private sector as well as to improve regulatory environment for FIEs, more high-level legislation is expected from the central government of China, including the administrative rules from the State Council or even the law from the National People's Congress on regulating PPP projects and clarifying the obligations and rights of stakeholders involved. In addition, considering most PPP projects are owned by the local government and the tendering and bidding process is required, more transparency and clear information disclosure system at the local level is highly recommended”**

*Kevin Gao,  
former Working Group Coordinator (Government Affairs),  
EUCCC,  
Online interview with NTNU,  
21 June 2017*

A *public-private partnership (PPP)* is a cooperative arrangement between two or more public and private sectors, typically of a long-term nature. It is often defined as a long-term contract between a private party and a government agency for providing a public asset or service, in which the private party bears significant risk and management responsibility<sup>244</sup>.

### The Chinese Perspective

PPP's have been developing in China since the late 1980's, but the year 2014 was a landmark year in this development. During the 2014, the Chinese government issued numerous important documents encouraging private investment in public services and infrastructure. The Ministry of Finance announced the establishment of a PPP-centre and published approval for 1043 new PPP projects across the country, representing a total investment of close to 2 trillion RMB<sup>245</sup>.

The 13th Five-Year Plan for Economic and Social Development aims to establish a system of lists of powers and responsibilities for the management of enterprise investment projects and better ensure that enterprises have decision-making powers over their investments, while further “streamlining investment approval procedures when applying for government approval”, and states that “We will further lift market access restrictions on sectors such as infrastructure and public utilities, and use public-private partnership models such as franchise operations and government procurement

<sup>244</sup>International Bank for Reconstruction and Development / The World Bank, Asian Development Bank, and Inter-American Development Bank: Public-Private Partnerships Reference Guide Version 2.0:

<http://documents.worldbank.org/curated/en/600511468336720455/pdf/903840PPP0Ref0Box385311B000PUBLIC0.pdf>

<sup>245</sup>What is Public-private Partnerships?: <https://www2.deloitte.com/cn/en/pages/real-estate/articles/what-is-public-private-partnerships.html>

### **URBAN-EU-CHINA Industry Workshop on New Type of Urbanisation: Innovation without Barriers**

*On 11 September 2018 in Beijing, around 120 policy makers, national authorities, industries, cities, academia, civil society and other stakeholders from China and Europe were invited to the 2018 EU-China Industry Workshop on New Type of Urbanisation organised by the European Chamber and China Academy of Urban Planning and Design (CAUPD) of the Ministry of Housing and Urban-Rural Development (MOHURD) for the EU-China Innovation Platform on Sustainable Urbanisation (URBAN-EU-CHINA) funded by the European Commission under the framework of HORIZON 2020.*

of services to encourage the involvement of nongovernmental capital through investment, construction, and operations in these sectors"<sup>246</sup>.

The plan also promotes diversification in the methods of service provision, and for the government to no longer directly operate public services that can be provided through service procurement: "For public services that can be provided through public-private partnerships, extensive efforts will be made to attract non-governmental investment"<sup>247</sup>. A catalogue for the procurement of public services will be published, and competitive mechanisms such as franchising, designated commissioning, strategic cooperation, and competitive evaluation will be introduced.

### **The European Perspective**

Since the 1990s, 1749 PPP's worth a total of 336 billion Euro have been implemented in the EU<sup>248</sup>. The European Commission has been encouraging the use of PPP's for some years, as part of the Europe 2020 strategy<sup>249</sup>. Most PPP's have been implemented in the field of transport, which in 2016 accounted for one third of the entire year's investment, ahead of healthcare and education<sup>250</sup>. PPP's have a significant role in public sector infrastructure development in the EU, and in 2008 the European PPP Expertise Centre (EPEC) was established to support the public sector across Europe in delivering better PPP's, and to support EU member states in their work with PPP's<sup>251</sup>.

The 3 main pillars of public-public partnerships in EU research are as follows

- "Joint Programming Initiatives Member-State driven R&I programmes on societal challenges that have been directly established since 2010 by the Council and which are partly supported by Horizon 2020 through ERA-NET's
- Article 185 of the Treaty on the Functioning of the European Union (TFEU) allows the EU to participate in research programmes undertaken jointly by several EU member countries
- ERA-NET Cofund instrument under Horizon 2020 is mainly used to 'top-up' single joint calls and actions of a transnational nature"<sup>252</sup>.

Under Horizon 2020, the European Commission has joined forces with important industry partners

<sup>246</sup>13th Five-Year Plan for Economic and Social Development, PART III: New Systems for Development, Chapter 17: Innovate and Improve Macroeconomic Regulation, Section 4: Investment and Financing Systems

<sup>247</sup>PART XV: Support for Public Services, Chapter 61: Provide More Public Services, Section 3: Innovative Public Service Provision

<sup>248</sup>European Court of Auditors: Public Private Partnerships in the EU: Widespread shortcomings and limited benefits. Special Report. 2018: [https://www.eca.europa.eu/Lists/ECADocuments/SR18\\_09/SR\\_PPP\\_EN.pdf](https://www.eca.europa.eu/Lists/ECADocuments/SR18_09/SR_PPP_EN.pdf)

<sup>249</sup>European Commission, Europe 2020 strategy: [https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy\\_en](https://ec.europa.eu/info/business-economy-euro/economic-and-fiscal-policy-coordination/eu-economic-governance-monitoring-prevention-correction/european-semester/framework/europe-2020-strategy_en)

<sup>250</sup>European Court of Auditors: Public Private Partnerships in the EU: Widespread shortcomings and limited benefits. Special Report. 2018: [https://www.eca.europa.eu/Lists/ECADocuments/SR18\\_09/SR\\_PPP\\_EN.pdf](https://www.eca.europa.eu/Lists/ECADocuments/SR18_09/SR_PPP_EN.pdf)

<sup>251</sup>European Investment Bank, European PPP Expertise Centre, about EPEC: <https://www.eib.org/eppec/>

<sup>252</sup>EC Public-Public Partnerships: <https://ec.europa.eu/programmes/horizon2020/en/h2020-section/public-public-partnerships-0>

## Open Urban Innovation 2.0

to work on the formidable challenges of the future, and “Through partnerships with the private sector, Horizon 2020 pools Europe’s resources to tackle the biggest challenges, support competitiveness, deliver high quality jobs, and encourage greater private investment in research and innovation”<sup>253</sup>.

These PPP’s are agreements that allow EU countries to draw up joint research programmes where the aim is to pool national research efforts in order to make better use of Europe’s public research and development resources and tackle common challenges more effectively.

In addition, there are also ten so-called contractual public-private partnerships between the EU and business representatives that have strategic importance for the European industry, where “The EU contributes with €7.1 billion while industry is committed to leverage further investments in research and innovation, work on cutting-edge technologies and ensure the competitive edge of the European industry”<sup>254</sup>.

### The Global Perspective

The UN New Urban Agenda does not directly address PPP’s, but contains references to the importance of “multi-stakeholder partnerships in urban development processes”<sup>255</sup> (p. 39), and “enhanced international cooperation and partnerships among Governments at all levels, the private sector, civil society”<sup>256</sup> (p. 32).

Cities are confronted on a daily basis with new and complex social, environmental, economic, cultural, and technological challenges. Through open innovation they can find new ways to meet these challenges and meet the needs of the citizens. A typical feature of current processes of open urban innovation is the adoption of collaborative approaches to the definition, production and implementation of products and services.

### The Chinese Perspective

The New-type Urbanisation Plan states that “Cities are important spaces for innovation based on science and technology, education and human resources, promoting innovation-driven development. The form innovation eco-systems providing the policy environment, financial environment and culture environment for innovation, stimulating social innovative vitality, promoting technological innovation as well as business model innovation and management innovation”<sup>257</sup>.

The Plan emphasises the necessity for establishing mechanisms for collaborative innovation between industry and academia, strengthening companies’ dominant position in technological innovation, allowing large companies to play a dominant role in innovation, and stimulating SMEs’ innovation vitality. It goes on to suggest a string of ways to do this; building innovation centres, gather innovative talents, foster innovation clusters, improve the innovation service system, develop innovation public platforms and risk investment institutions, and promote the capitalisation and industrialisation of innovation achievements. And to strengthen IPR usage and protection,

<sup>253</sup>European Commission, Partnerships with Industry and Member States: <https://ec.europa.eu/programmes/horizon2020/en/area/partnerships-industry-and-member-states>

<sup>254</sup>European Commission, Contractual public-private partnerships: <https://ec.europa.eu/programmes/horizon2020/en/contractual-public-private-partnerships>

<sup>255</sup>UN New Urban Agenda, Point 153

<sup>256</sup>Point 126

<sup>257</sup>New-Type Urbanisation Plan: According to Part 5 “Increase Urban Sustainable Deployment Capabilities”, Chapter 14 “Strengthen support for urban industrial employment”, Section 2 “Enhance urban innovation capacity”

**URBAN-EU-CHINA Foresight Workshop: A Research & Innovation Agenda for EU-China Cooperation on Sustainable Urbanisation 2019-2029**

On 11 September 2018 in Beijing, 35 participants from China and European countries attended URBAN-EU-CHINA's third Foresight Workshop. The event offered an opportunity for European and Chinese urban stakeholders to discuss their experiences and visions on what Europe and China could achieve by cooperating on sustainable urbanisation. During the workshop, the participants discussed transition pathways that could connect long-term visions with the operational realities of Chinese and European cities, and define possible targets, enablers, challenges, instruments and success criteria to be included in the framework of the EU-China Partnership on Sustainable Urbanisation. The target group for this Foresight Workshop consisted of urban experts from public and private sector with experience in cooperation between Europe and China. The workshop was held in English but with possibility for some groups to discuss in Chinese. The workshop adopted the Knowledge Café methodology to engage the participants in creative and inspirational conversation leading to wiser and more collectively informed proposals. The participants worked in small, interactive groups where each of them spoke out and shared their knowledge with the others.

and improve stimulation mechanisms for technological innovation. It also describes ways to promote the fostering of innovative talents in higher education, and accelerate the establishment of a modern vocational education system.

In 2016, the CPC Central Committee and the State Council issued the *Outline of the National Innovation-Driven Development Strategy* that highlights the strategic priority to science and technology as the basis for innovation<sup>258</sup>. Among the strategic tasks, cities play an important role: "The development of intelligent city and digital social technology, to promote people-oriented new urbanization. Relying on new technologies and management innovation to support the new urbanization, modern urban development and public services, innovation and social governance methods and means to speed up the comprehensive management of social security process, promote peace in China. Development of transportation, electricity, communications, underground pipe network and other municipal infrastructure standardization, digital, intelligent technology, promote green building, smart city, eco-city and other key technologies in large-scale application. Strengthen major disasters, public safety and other emergency shelter major technology and product research."

The introductory statement of the second part of 13th Five-Year Plan for Economic and Social Development reads as follows<sup>259</sup>: "We will see that scientific and technological innovation leads the way in all areas of innovation. We will strengthen basic research, bolster primary innovation, innovation based on the integration of existing technologies, and innovation based on import and assimilation, and

<sup>258</sup>The Central Committee of the Communist Party of China issued the "Outline of National Innovation Driven Development Strategy" 19 May 2016 : [http://www.most.gov.cn/yw/201605/t20160520\\_125675.htm](http://www.most.gov.cn/yw/201605/t20160520_125675.htm) (in Chinese)

<sup>259</sup>13th Five-Year Plan for Economic and Social Development, Part II, which is devoted to "Innovation-Driven Development"

improve China's own capacity for innovation, so as to provide an inexhaustible driving force for economic and social development". The Chapter headings also define a clear framework in line with the innovation-driven strategy:

- Ensure Innovation in Science and Technology Takes a Leading Role
- Encourage Public Start-ups and Innovations
- Establish Innovation Promoting Institutions and Mechanisms
- Prioritize Human Resource Development

Neither in the New-type Urbanisation Plan nor in the Strategy for Innovation-Driven Development or in the 13th Five-Year Plan the term Open Innovation 2.0 is mentioned, but the description of the tasks is close to the definitions used in Europe where Open Innovation 2.0 is described as "Open Innovation 2.0 (OI2) is a new paradigm based on principles of integrated collaboration, co-created shared value, cultivated innovation ecosystems, unleashed exponential technologies, and extraordinarily rapid adoption"<sup>260</sup>.

### The European Perspective

Open Innovation 2.0 is based on the principles of "integrated collaboration, co-created shared value, cultivated innovation ecosystems, unleashed exponential technologies, and rapid adoption due to network effects" (Curley and Salmelin, 2018, p.1<sup>261</sup>), to secure involvement and co-creation of partners and stakeholders in different sectors for a joint and integrated project approach, including cities, citizens, industry partners, academia.. It is used by the European Commission, amongst others, as a policy for the digital single market. The Open Innovation 2.0

paradigm informs the European Commission policy on a digital single market, with five key elements<sup>262</sup>

- Networking;
- Collaboration: involving partners, competitors, universities, and users;
- Corporate Entrepreneurship: enhancing corporate venturing, start-ups and spin-offs;
- Proactive Intellectual Property Management: creating new markets for technology;
- Research and Development (R&D): achieving competitive advantages in the market.

The *Urban Agenda for the EU*<sup>263</sup> will "make full use of the European Innovation Partnership "Smart Cities and Communities"(EIP SCC)" (p. 6), and states that "the scientific work and solutions developed by the Joint Programming Initiative Urban Europe (JPI UE) in the area of research and innovation will be used to promote and exchange evidence based proposals for urban policy and urban projects" (p. v).

The *European Innovation Partnership on Smart Cities and Communities (EIP SCC)* was established by the European Commission in 2012, and is an initiative supported by the European Commission that brings together cities, industry, small business (SMEs), banks, research and others. It aims to improve urban life through more sustainable integrated solutions and addresses city-specific challenges from different policy areas such as energy, mobility and transport, and ICT. It builds on the engagement of the public, industry and other interested groups to develop innovative solutions and participate in city governance<sup>265</sup>.

The *Joint Programming Initiative Urban Europe (JPI UE)*

<sup>260</sup>M. Curley and Bror Salmelin: Open Innovation 2.0: A New Paradigm. Open Innovation Strategy and Policy Group, 13 June 2006; see: <https://ec.europa.eu/digital-single-market/en/open-innovation-strategy-and-policy-group>

<sup>261</sup>Curley, M., & Salmelin, B. (2018). Open Innovation 2.0. The New Mode of Digital Innovation for Prosperity and Sustainability. Innovation, Technology, and Knowledge Management. Cham, Switzerland: Springer International Publishing.

<sup>262</sup><https://ec.europa.eu/digital-single-market/en/open-innovation-20>

<sup>263</sup>European Commission, Urban Agenda for the EU – Pact of Amsterdam: [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>265</sup>EC Smart Cities:

[https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/city-initiatives/smart-cities\\_en](https://ec.europa.eu/info/eu-regional-and-urban-development/topics/cities-and-urban-development/city-initiatives/smart-cities_en)

was created in 2010 to address the global urban challenges of today with the ambition to develop a European research and innovation hub on urban matters and create European solutions by means of coordinated research<sup>266</sup>. It is a Member States instrument designed to focus on reducing fragmentation in research whilst simultaneously strengthening research and innovation projects by having European countries and actors voluntarily work together and align their national interests.

The *Orientation Paper*<sup>267</sup> (2017) for the Digital Transition Partnership in The Urban Agenda for the EU states that “Urban Platforms should be developed in the future so that cities can function as open urban innovation platforms for digital transition through key enabling technologies” (p. 14). It underlines that business models should be developed for the urban context, so that cities can function as open urban innovation platforms and utilize their dynamic capabilities to foster urban growth. When addressing the eco-systemic value potential of urban digital transition, five perspectives to business models that can be established that will enable simultaneous value provisioning and utilization in open urban innovation platforms are listed, one of which is “Opening the urban innovation platforms for developing and testing new innovations and products” (p. 17).

### **The Global Perspective**

In the *UN New Urban Agenda*, businesses are called on “to apply their creativity and innovation to solving sustainable development challenges in urban areas, acknowledging that private business

activity, investment and innovation are major drivers of productivity, inclusive growth and job creation”<sup>268</sup> (p. 33). The Agenda further includes a commitment to “adopting a smart-city approach that makes use of opportunities from digitalization, clean energy and technologies, as well as innovative transport technologies, thus providing options for inhabitants to make more environmentally friendly choices and boost sustainable economic growth”<sup>269</sup>(p. 19).

*The 2016 UCI Annual Forum (15/12/16)*, The UCI Annual Forum<sup>270</sup> discussed Urban China 2025+, and provided insightful discussions on urban innovation, inclusive city and green city. The 2016 UCI Annual Forum was held on December 15 in Beijing. The theme of UCI’s 2016 Annual Forum was Urban China 2025+: Innovative, Inclusive, Green. UCI cooperated with China Center for Urban Development (CCUD), The World Bank, Energy Foundation and Hang Lung Center for Real Estate of Tsinghua University to provide insightful discussion on urban innovation, inclusive city and green city. The speakers also included leading figures from the public, private and academic sectors. Jonathan Woetzel, Co-Chair of Urban China Initiative, Director of McKinsey Global Institute and Senior Partner of McKinsey & Company, chaired the conference.

<sup>266</sup>JPI Urban Europe: <https://jpi-urbaneurope.eu/about/intro/>

<sup>267</sup>Urban Agenda for the EU, the Orientation Paper of the Digital Transition Partnership: [https://ec.europa.eu/futurium/sites/futurium/files/digital\\_transition\\_orientation\\_paper.pdf](https://ec.europa.eu/futurium/sites/futurium/files/digital_transition_orientation_paper.pdf)

<sup>268</sup>UN New Urban Agenda, Point 133

<sup>269</sup>Point 66

<sup>270</sup>The Urban China Initiative, 2016 Annual Forum: Urban China 2025+: [http://www.urbanchinainitiative.org/en/content/details\\_24\\_62323.html](http://www.urbanchinainitiative.org/en/content/details_24_62323.html)

**“ Efforts are needed to ensure the comparability of the data collected at urban level: the data represents the basis for monitoring the results achieved as well as evaluating the opportunities for sustainable practices upscaling and replication”.**

-Giovanna Giuffrè,  
Partner, ISINNOVA,  
Online interview with NTNU,  
28 June 2017

## Digital Urban Data, Platforms & Tools

Cities are at the frontlines of many difficult economic, environmental and social issues, ranging from income inequality and transportation issues, to a lack of affordable housing and declining urban environments. Digital urban platforms are the implementation of a logical architecture that integrates data flows across city systems, exploits digital technology sensors, cloud, mobile applications, and social media<sup>271</sup>.

### The Chinese Perspective

The Chinese National Innovation-Driven Innovation Strategy aims to promote new forms of people-centred urbanisation in China, using digital social technology to modernize urban development, public services, governance and social security. This strategy includes a comprehensive urban scope, including sectors such as “transportation, electricity, communications, underground pipe networks and other municipal infrastructure standardization, digital, intelligent technology, green building, smart city, eco-city and other key technologies in large-scale application”. In addition, the strategy supports digitization for more resilient cities, including objectives such as protection from major disasters, increasing public safety, and providing emergency shelter.

This ambition is mirrored in the *13th Five-Year Plan*, promoting the development of modern information infrastructure, including Internet of Things, to create “cities that make full use of modern information technology and big data, to develop smart infrastructure, convenient public services, and refined social governance”<sup>272</sup>. The

plan also includes the intention to “build Smart cities as we strengthen modern information infrastructure and promote the development of big data and the Internet of Things”<sup>273</sup>. The *Special Plan for Science and Technology Innovation in Urbanization and Urban Development in the Thirteenth Five-year Plan*<sup>274</sup>, emphasizes the establishment of the “four environmental protection” big data system of urban construction and study the corresponding data acquisition mechanism<sup>275</sup>. This includes green building demonstration projects with post-occupancy evaluation and a corresponding database of best practices, as well as green building management technology based on big data, Building Information Modelling (BIM), and quantification and precision technology of green building waste management.

The *New-Type Urbanisation Plan*<sup>276</sup> emphasizes the informatisation of urban planning and management as one of the priorities in the development of smart cities, aiming, amongst others, to “develop digital city management, promote the building of platforms and expand their functions; establish a unified urban geospatial information platform and database for buildings; build a public information platform for smart cities; and comprehensively promote the digital and accurate management of urban infrastructure, such as urban planning, land usage, urban pipelines (for heat, water, electricity, etc.) network, landscaping, environmental protection, and so on”. Modernisation of industrial development, informatisation and digitalisation are given priority, transforming traditional industries and manufacturing towards more service-oriented and data-driven business models.

<sup>271</sup>MatchUP project, Urban Platform: <https://www.matchup-project.eu/solutions/urban-platform/>  
<sup>272</sup>13th Five-Year Plan for Economic and Social Development, Part VIII, Chapter 34, Section 1  
<sup>273</sup>Part VIII, Chapter 34, Section 1

<sup>274</sup>Special Plan for Science and Technology Innovation in Urbanization and Urban Development in the Thirteenth Five-year Plan: [http://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2017/201709/t20170907\\_134797.htm](http://www.most.gov.cn/mostinfo/xinxifenlei/fgzc/gfxwj/gfxwj2017/201709/t20170907_134797.htm) (in Chinese)

<sup>275</sup>Third Chapter, The Key Tasks, Box 3 “Green building and building infrastructure”:

<sup>276</sup>New-Type Urbanisation Plan, Chapter 18 “Promote the construction of New-type Cities”, “Green Cities and Smart Cities”, “Priorities in the Construction of Smart Cities”

## The European Perspective

Digital transition is one of the themes on the *Initial list of Priority Themes*<sup>278</sup> in the Urban Agenda for the EU<sup>279</sup>, where it is stated that “The objective is to provide better public services to citizens and create business opportunities. The focus will be on: data collection (including ownership), better use of open data, data management (including the capacity of citizens, Urban Authorities and privacy issues) and digital services (incl. new technologies) and accessibility of digital public services to disabled and elderly citizens (in accordance with international WCAG 2.0 standards)” (p. iv).

In the introduction in the *Action Plan for Digital Transition*<sup>280</sup> (2018), opportunities and dilemmas that the digital era offers for cities are mentioned, and that also in digitalised societies citizens should have right to control their own data, including making profit from the value of their data. The Action Plan states that “Cities should also support their citizens to minimise digital divide, and make people aware of all aspects of digitalisation. As digitalisation advances people will want to have more control over the developments as well as tools to evaluate the progress”<sup>281</sup> (p. 5-6).

The Action Plan points to “digital tools and new technologies being key factors for increasing citizen inclusion (e.g. Virtual Reality for visualisation, Augmented Reality for holistic experience, open data for transparency, platforms for data collection and sharing opinions and utilization of me-data and my data) when it comes to urban planning” (p. 33), but that many cities still lack the finance or knowledge to implement platforms for

(digital) participatory urban planning. It argues that “At the same time, (private) actors who acquire data in cities are restricted by legal and economic issues (e.g. right of ownership, business models) regarding sharing the data with public authorities for purposes of general interest. Therefore this action is linked to Action 7, where access and reuse not only refers to data but to platforms for data collection and storage, as well as software based on artificial intelligence. On the other hand, access and reuse of public data by the private sector needs to be addressed if cities are to act both as enablers of economic growth and as considerers of the consequences related to e.g. security issues”<sup>282</sup> (p. 33). The main goal “Developing the business approach and city tools for digital transition that acknowledges the scalability, sustainability, replicability and adaptability of citizen-centric and inclusive digital services”<sup>283</sup> (p. 48).

The Action Plan emphasizes that better public services have direct impact on the quality of life and have a positive effect on slowing out-migration, and suggests that “Service provision must adapt to demographic changes, and digital tools could help here”<sup>284</sup> (p. 59), and underlines that “Digitalization is not done for the sake of digitalization itself, but as part of strategic vision on creating new tools and allowing new policies aiming at sustainable development of urban and rural areas”<sup>285</sup> (p. 59).

## The Global Perspective

The *UN's New Urban Agenda*<sup>286</sup> states a commitment “to adopting a smart-city approach that makes use of opportunities from digitalization, clean energy and

<sup>278</sup>The list was established based on a survey among Member States and representatives of urban and regional authorities in July 2015 organised by the Netherlands and under consideration of the Commission Staff Working document (“Results of the Public Consultation on the key features of an Urban Agenda for the EU, SWD(2015) 109 final/2), published on 27 May 2015 as well as the results of three thematic workshops on this matter (organised by the European Commission in September 2015).

<sup>279</sup>European Commission (2016) Pact of Amsterdam, [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>280</sup>Urban Agenda for the EU, the Action Plan of the Digital Transition Partnership, [https://ec.europa.eu/futurium/en/system/files/ged/digital\\_transition\\_action\\_plan\\_for\\_dgum\\_300818\\_final.pdf](https://ec.europa.eu/futurium/en/system/files/ged/digital_transition_action_plan_for_dgum_300818_final.pdf)

<sup>281</sup>Part 1

<sup>282</sup>Part 2.8

<sup>283</sup>Part 2.13

<sup>284</sup>Part 4.1.9, Action 4

<sup>285</sup>Part 4.1.8, Action 15

<sup>286</sup>UN New Urban Agenda : <http://habitat3.org/wp-content/uploads/NUA-English.pdf>

technologies"<sup>287</sup> (p. 19), and has one point devoted to the promotion of digital tools in society: "We will promote the development of national information and communications technology policies and e-government strategies, as well as citizen-centric digital governance tools, tapping into technological innovations, including capacity-development programmes, in order to make information and communications technologies accessible to the public, including women and girls, children and youth, persons with disabilities, older persons and persons in vulnerable situations, to enable them to develop and exercise civic responsibility, broadening participation and fostering responsible governance, as well as increasing efficiency. The use of digital platforms and tools, including geospatial information systems, will be encouraged to improve long-term integrated urban and territorial planning and design, land administration and management, and access to urban and metropolitan services"<sup>288</sup> (p. 39).

The UN NUA also states that "We will foster the creation, promotion and enhancement of open, user-friendly and participatory data platforms using technological and social tools available to transfer and share knowledge among national, subnational and local governments and relevant stakeholders, including non-State actors and people, to enhance effective urban planning and management, efficiency and transparency through e-governance, approaches assisted by information and communications technologies, and geospatial information management"<sup>289</sup> (p. 40).

*2017 Global (Shanghai) Artificial Intelligence Innovation Summit and World Urban Planning AI Summit (30.08.2017)*, The event gathered experts within the AI/Digitalisation field to discuss, promote and encourage AI development and industrial innovation in China.

The 2017 Global (Shanghai) Artificial Intelligence Innovation Summit<sup>290</sup> was successfully held in West Bund Art Center, Shanghai. Nearly one thousand participants from various circles, including government officials and industry experts, were present at this summit. Hosted by Professor Wu Zhiqiang, Vice President of Tongji University, Director of the Intelligent City Knowledge Service System of the International Knowledge Centre for Engineering Sciences and Technology (IKCEST), the summit had six topics: The Power of Innovation, Artificial Intelligence on the Run, Artificial Intelligence Be Master of Future, Intelligent Manufacturing under New Wave of Artificial Intelligence, Innovation Process Digitalization with Artificial Intelligence and China's AI Renaissance. After the speeches, some guests started a high-level dialogue on New Opportunity for Artificial Intelligence and Industry Development.

<sup>287</sup>Point 66  
<sup>288</sup>Point 156  
<sup>289</sup>Point 160

<sup>290</sup>IKCEST website, 2017 Global (Shanghai) Artificial Intelligence Innovation Summit held in Shanghai: <http://www.ikcest.org/article-53552.htm>

*BURBA*, The *BURBA* projec<sup>291</sup> (2011-2013) was a FP7-funded initiative (Grant agreement ID: 265177) to optimise waste collection and management, including the “bottom up selection, collection and management of urban waste”. The *BURBA* project aimed to develop an automatic system for intelligent waste management. The system consists of intelligent waste containers and an IT tool for waste collection and transport management. This includes RFID (Radio Frequency Identification) to reliably identify individual receptacles, users, single marked items or waste categories. In addition, it integrates cell-phone-based LBS (location-based service) to allow easy identification of the geographical position of the most suitable waste container and to improve its utilization by the citizen (the closest one to user actual position, not full, adequate for that waste category, etc).



*VIAJEO*, Public transport passengers often have to combine different types of transport – such as trams, buses and metros – to travel across a city. Without an encyclopaedic knowledge of timetables, routes and traffic conditions, they risk picking the slowest routes or getting stuck in congestion.

The EU-funded (FP7 Grant Agreement 233745) project *VIAJEO*<sup>292</sup> (2009-2012) built a platform that combines transport and traffic data for a city in real time, helping travellers plan faster journeys and work around delays. Project coordinator Yanying Li, senior project manager at the European Road Transport Telematics Implementation Coordination Organisation (ERTICO) in Belgium, said: “The aim of the project was to improve public transport data to make it more reliable.” Because the platform shares information about traffic problems, transport routes and transport emissions, she adds, transport providers and city traffic managers can manage short-term hold-ups, plan better for the long term and reduce the environmental impact of travel.

<sup>291</sup>CORDIS, Final Report Summary - *BURBA* (Bottom Up selection, collection and management of *URBAN* waste): <https://cordis.europa.eu/project/rcn/97290/reporting/en>

<sup>292</sup>European Commission website, A smart platform for smoother city travel: <https://ec.europa.eu/programmes/horizon2020/en/news/smart-platform-smoother-city-travel>

# 05

## COLLABORATIVE INNOVATION

**“With respect to the cooperation between Europe and China on urbanisation. Accomplishments have been witnessed in the cooperation of local governments of both sides in the form of city-to-city matchmaking. However, industries are the major motivation and drive force for the long-term cooperation and concrete economic outcome. It is of great necessity to put more resources in facilitating the cooperation among industries from Europe and China, not only for the multi-nationals but also for the small-medium sized enterprises. One effective solution could be to organise series of conferences, seminars and matchmaking events for specific industries along with study tours for both sides based on industries' demands”**

*Kevin Gao,  
former Working Group Coordinator (Government Affairs),  
EUCCC,  
Online interview with NTNU,  
21 June 2017*



## Recommendation

Strategic joint EU-China research and innovation cooperation in sustainable urbanisation is a long-standing priority for both regions, supported by large-scale cooperation programmes such as the EU-China Urbanisation Partnership<sup>293</sup>, strategic policy documents such as EU-China 2020 Strategic Agenda for Cooperation<sup>294</sup>, and EU-China joint funding mechanisms such as the EU-China Co-Funding Mechanism (CFM) for Research and Innovation<sup>295</sup>.

These efforts have resulted in a number of joint projects in the 7th Framework Programme for Research and Technological Development<sup>296</sup> (FP7) and Horizon 2020<sup>297</sup> (H2020), bilateral mechanisms with European Member States<sup>298</sup>, joint calls<sup>299</sup> organised by Joint Programming Initiative Urban Europe with the National Natural Science Foundation of China, and cooperation projects at regional, city and institutional level. Political agreements between cities supported by active dialogue have enabled large-scale flagship projects for urban innovation and entrepreneurship both for established business and young start-ups. Large-scale urban cooperation mechanisms, such as H2020 SCC01 Smart Cities and Communities Lighthouse<sup>300</sup> projects and H2020 SC5 Nature-Based Solutions<sup>301</sup> projects, create 5-year frameworks for innovation and demonstration oriented cooperation between cities, private sector and research in Europe, enabling fast iteration and practice-based learning to create better urban conditions on the ground. The Chinese New Areas would benefit greatly from international cooperation with these large-scale collaborative European demonstration projects to promote sharing of knowledge and resources to address urban, regional, and global issues such as sustainability, city-to-city connectivity, industry links, and city development.

*We recommend that China and Europe cooperate more closely on city-to-city partnerships, and in particular the larger scale clustering mechanisms at city and regional level that include increase cooperative innovation between companies, public sector, research and capacity building.*

*In addition to individual city and regional cooperation, we recommend that China consider providing a funding mechanism similar to the European H2020 SCC01 lighthouse projects, and enabling the CFM to support joint calls for Chinese and European city-industry-research clusters, for knowledge exchange and cooperation with the Chinese New Areas and similar strategic urban projects.*



<sup>293</sup> Joint Declaration on The EU-China Partnership on Urbanisation (2012): [https://ec.europa.eu/energy/sites/ener/files/documents/20120503\\_eu\\_china\\_joint\\_declaration\\_urbanisation\\_en.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_urbanisation_en.pdf)  
<sup>294</sup> European External Action Services EEAS (2013): The EU-China 2020 Strategic Agenda for Cooperation, 23 November 2013: [https://eeas.europa.eu/headquarters/headquarters-homepage/15398/eu-china-2020-strategic-agenda-cooperation\\_ga](https://eeas.europa.eu/headquarters/headquarters-homepage/15398/eu-china-2020-strategic-agenda-cooperation_ga)  
<sup>295</sup> EU-China Co-Funding Mechanism (CFM): <http://chinainnovationfunding.eu/eu-china-co-funding/>  
<sup>296</sup> FP7 in brief: [https://ec.europa.eu/research/fp7/understanding/fp7inbrief/what-is\\_en.html](https://ec.europa.eu/research/fp7/understanding/fp7inbrief/what-is_en.html)  
<sup>297</sup> H2020 homepage: <https://ec.europa.eu/programmes/horizon2020/en>  
<sup>298</sup> EURAXESS: <https://euraxess.ec.europa.eu/useful-information>  
<sup>299</sup> JPI Urban Europe website: <https://jpi-urbaneurope.eu/calls/sustainable-urbanisation-china-europe/>  
<sup>300</sup> European Commission Smart Cities & Communities: <https://ec.europa.eu/inea/en/horizon-2020/smart-cities-communities>  
<sup>301</sup> NCPS website: <http://www.ncps-care.eu/?p=2883>

## Large-Scale Cooperation Programmes

### The EU-China Sustainable Urbanisation Flagship Initiative<sup>303</sup>

Strategic joint research and innovation actions to turn challenges into opportunities for growth, jobs and better living conditions for millions of urban citizens both in Europe and China.

"Through targeted research and innovation actions in various topics surrounding cities (transport, environment, energy, urban planning etc.), Europe and China are striving for cost-effective, integrated green solutions that provide multiple benefits, increase urban resilience to changes and leverage costly problems into opportunities for growth, jobs and better living conditions for millions of urban citizens both in Europe and China. With the strong commitment to continue to develop the research and innovation pillar of the EU-China Sustainable Urbanisation Partnership, a package of actions was launched under Horizon 2020 to promote innovative nature-based solutions for climate and water resilience in cities, inclusive urban regeneration, city planning and development, and a platform of sustainable urbanisation stakeholders. The Co-funding mechanism was to provide momentum for a strong Chinese participation in these topics"<sup>304</sup> (p. 4).

"On 16 December 2015, the Chinese Ministry of Science and Technology launched its first call for proposals under the EU China Co-funding Mechanism<sup>305</sup> (CFM) for Research and Innovation. Up to 200 million RMB, or 28 million euro, were made available annually by the Chinese side for the benefit of China-based entities that participate in joint projects with European partners under Horizon 2020. Sustainable urbanisation was one of the priority areas for the first CFM Call"<sup>306</sup> (p. 2).

"Strategic joint EU-China research and innovation cooperation in environment and sustainable urbanisation is a long-standing priority for both regions, and it has been pursued with a number joint projects in FP7 and no less than 8 topics in Horizon 2020 so far. For the period of 2018-20 cooperation will target green urban mobility and sustainable electrification in large urban areas, and reduction of transport impact on urban air quality (...). These topics are intended to promote balanced and substantial cooperation between European and Chinese partners"<sup>308</sup>.

### BELT AND ROAD INITIATIVE<sup>309, 310</sup>

In 2013, the Belt and Road initiative (BRI) was launched by President Xi Jinping as an infrastructure development strategy<sup>311</sup>. The full title of the strategy is "Silk Road Economic Belt and 21st-Century Maritime Silk Road"..The Chinese government calls the initiative "a bid to enhance regional connectivity and embrace a brighter future"<sup>312</sup>. It is the largest and most ambitious international infrastructure development strategy ever.

The BRI is an ambitious effort to improve regional cooperation and connectivity on a trans-continental scale. Originally, the initiative aims to strengthen infrastructure, trade, and investment links between China and some 65 other countries that together accounts for over 30 percent of global GDP, 62 percent of population, and 75 percent of known energy reserves. The BRI consists primarily of the Silk Road Economic Belt, linking China to Central and South Asia and onward to Europe, and the New Maritime Silk Road, linking China to the nations of South East Asia,

<sup>302</sup>Joint communication to the European Parliament, the Council, the European Economic and Social Committee, the Committee of the Regions and the European Investment Bank, Connecting Europe and Asia - Building blocks for an EU Strategy: [https://eeas.europa.eu/sites/eeas/files/joint\\_communication\\_-\\_connecting\\_europe\\_and\\_asia\\_-\\_building\\_blocks\\_for\\_an\\_eu\\_strategy\\_2018-09-19.pdf](https://eeas.europa.eu/sites/eeas/files/joint_communication_-_connecting_europe_and_asia_-_building_blocks_for_an_eu_strategy_2018-09-19.pdf)

<sup>303</sup>EU-CHINA SUSTAINABLE URBANISATION FLAGSHIP INITIATIVE; [https://eeas.europa.eu/sites/eeas/files/eu\\_china\\_research\\_in\\_urbanisation.pdf](https://eeas.europa.eu/sites/eeas/files/eu_china_research_in_urbanisation.pdf)

<sup>304</sup>EU-CHINA SUSTAINABLE URBANISATION FLAGSHIP INITIATIVE; [https://eeas.europa.eu/sites/eeas/files/eu\\_china\\_research\\_in\\_urbanisation.pdf](https://eeas.europa.eu/sites/eeas/files/eu_china_research_in_urbanisation.pdf)

<sup>305</sup>EU-China Research and Innovation Co-Funding Mechanism - First call launched by China; <https://ec.europa.eu/programmes/horizon2020/en/news/eu-china-research-and-innovation-co-funding-mechanism-first-call-launched-china>

<sup>306</sup>EU-CHINA SUSTAINABLE URBANISATION FLAGSHIP INITIATIVE; [https://eeas.europa.eu/sites/eeas/files/eu\\_china\\_research\\_in\\_urbanisation.pdf](https://eeas.europa.eu/sites/eeas/files/eu_china_research_in_urbanisation.pdf)

<sup>308</sup>Flagship Initiatives - Calls targeting China in the 2018-2020 Workplan for Horizon 2020; <https://euraxess.ec.europa.eu/worldwide/china/flagship-initiatives-calls-targeting-china-2018-2020-workplan-horizon-2020>

<sup>309</sup>Vision and Actions on Jointly Building Silk Road Economic Belt and 21st-Century Maritime Silk Road. 28 March 2015; [http://en.ndrc.gov.cn/newsrelease/201503/t20150330\\_669367.html](http://en.ndrc.gov.cn/newsrelease/201503/t20150330_669367.html)

<sup>310</sup>Action plan on the Belt and Road Initiative; [http://english.gov.cn/archive/publications/2015/03/30/content\\_281475080249035.htm](http://english.gov.cn/archive/publications/2015/03/30/content_281475080249035.htm)

<sup>311</sup>J. Xi: Promote Friendship Between Our People and Work Together to Build a Bright Future. Speech at Nazarbayev University. 8 September 2013. [https://www.fmprc.gov.cn/mfa\\_eng/wjdt\\_665385/zyjh\\_665391/t1078088.shtml](https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/t1078088.shtml)

<sup>312</sup>China unveils action plan on Belt and Road Initiative: [http://www.xinhuanet.com/english/2015-03/28/c\\_134105372.htm](http://www.xinhuanet.com/english/2015-03/28/c_134105372.htm)

**“The Belt and Road Initiative will have a large impact on Central Asia and Europe. This is a big opportunity for strengthening cooperation between Europe and China. For Europe to utilize the BRI's full potential a joint European strategy would be important. The recent Communication “Connecting Europa and Asia - Building Blocks for an EU Strategy”<sup>302</sup> is a step in the right direction.”**

*-Manfred Horvat,  
Honorary Professor, Vienna University of Technology,  
Austria/ Adjunct Professor,  
NTNU Norwegian University of Science and Technology,  
Online interview with NTNU,  
14 June 2017*

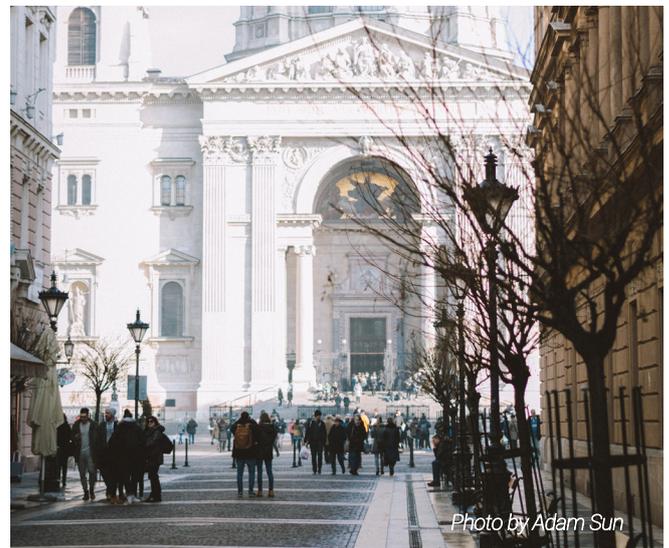
the Gulf Countries, North Africa, and on to Europe. Six economic corridors have been identified to link countries to the BRI. The scope of the initiative is still taking shape - more recently the initiative has been defined to be open to all countries as well as international and regional organizations<sup>313</sup>. The BRI involves more than 120 countries by now that signed agreements with China.

Investment and trade cooperation is a major task in building the Belt and Road, and the Initiative strives to improve investment and trade facilitation, and remove investment and trade barriers for the creation of a sound business environment within the region and in all related countries. Amongst the priority area for implementing the Initiative one finds facilities connectivity, improving the infrastructure-connectivity and technical standard systems, promoting green and low-carbon infrastructure construction and operation management, promoting cooperation in the connectivity of energy infrastructure, lowering non-tariff barriers, jointly improving the transparency of technical trade measures, and enhancing trade liberalization and facilitation, as well as establishing entrepreneurial and investment cooperation mechanisms<sup>314</sup>.

In 2015, the EU and China signed a Memorandum of Understanding to establish the *EU-China Connectivity Platform*<sup>315</sup> with the main aim to strengthen connections and identify and utilize synergies between China's BRI and the EU's Trans-European Networks Transport Networks.

During the 20th EU-China Summit in July 2018, synergies between China's Belt and Road Initiative and the EU's initiatives (incl. EU Investment Plan and extended Trans-European Transport Networks) and the establishment of the China-EU Co-investment Fund (launch of the first co-investment under the Fund) were amongst the topics on the agenda<sup>316</sup>.

The BRI was promoted by two high-level Belt and Road Forums for International Cooperation in 2017 and 2019<sup>317, 318</sup>. For the present Research and Innovation Strategy it is important to note that in the List of Deliverables of the 2019 2nd B&R Forum, Point 10, it says that on 27 April 2019 “the National Development and Reform Commission of China (CCUD China Center for Urban Development) jointly built the Belt and Road Sustainable Cities Alliance with the UN-Habitat, the WHO, UCLG-ASPAC, Eurocities and the Energy Foundation”<sup>319</sup>.



<sup>313</sup>Belt and Road Initiative; <https://www.worldbank.org/en/topic/regional-integration/brief/belt-and-road-initiative>

<sup>314</sup>Action Plan on the Belt and Road Initiative: [http://english.gov.cn/archive/publications/2015/03/30/content\\_281475080249035.htm](http://english.gov.cn/archive/publications/2015/03/30/content_281475080249035.htm)

<sup>315</sup>European Union-China Connectivity Platform Action Plan (13 July 2018); <https://ec.europa.eu/transport/files/2018-07-13-eu-china-connectivity-platform-action-plan.pdf>

<sup>316</sup>European Commission - Press release, EU-China Summit: deepening the strategic global partnership: [http://europa.eu/rapid/press-release\\_IP-18-4521\\_en.htm](http://europa.eu/rapid/press-release_IP-18-4521_en.htm)

<sup>317</sup>Belt and Road Cooperation: Shaping a Brighter Shared Future. Joint Communique of the Leaders' Roundtable of the 2nd Belt and Road Forum for International Cooperation. 27 April 2019, Beijing, China. <http://www.beltandroadforum.org/english/n100/2019/0427/c36-1311.html>

<sup>318</sup>List of Deliverables of the 2nd B&R Forum for International Cooperation. Global Times. 27 April 2019, point 10: <http://www.globaltimes.cn/content/1147744.shtml>

<sup>319</sup>UN-Habitat to extend joint engagements through China's Sustainable Cities Alliance; <https://unhabitat.org/un-habitat-to-extend-joint-engagements-through-chinas-sustainable-cities-alliance/>

**“The establishment of the co-funding mechanism will have a major impact on the EU-China strategic partnership, in which cooperation in research and innovation has now become a significant component”**

-Carlos Moedas,  
European Commissioner for  
Research, Science and Innovation,  
during the Joint Conference in Promoting Excellence  
through Enhanced EU-China Researcher's Mobility and  
Cooperation,  
in Beijing,  
07 September 2015

## EU-China Joint Funding Mechanisms

“The China-EU Co-funding mechanism on research and innovation (CFM) cooperation has played a significant role in supporting win-win STI cooperation since its launch in December 2015. During the 20th EU-China Summit in July 2018, the European Commission and Chinese Ministry of Science and Technology (MOST) agreed on the renewal of the CFM for research and innovation for the period 2018-2020 to support joint projects between European and Chinese universities, research institutions and companies”<sup>324</sup> (p. 1). They also “confirmed their commitment to improving framework conditions, notably reciprocal access to Science, Technology and Innovation resources, and to promoting open access to publications and research results”<sup>325</sup>(5). Under the Co-funding mechanism (CFM) the Chinese Ministry of Science and Technology (MOST) is providing “financial support on a competitive basis to China-based entities that will participate in joint projects with European partners under Horizon 2020. For the period 2018-2020, MOST intends to reserve an annual budget of up to 200 Million RMB, and the EC intends to reserve a budget of up to 100 Million Euro in Horizon 2020 calls targeting cooperation with China”<sup>326</sup>(p. 1).

“Having the right framework conditions in place is essential for EU-China STI Cooperation and for making Europe and China attractive global research and innovation players. Framework conditions have been constantly improving in recent years. Funding for research and innovation in China is abundant and the recent reform of the Chinese STI funding system promise more transparency, quality and opening to international cooperation”<sup>327</sup> (p. 18).

Bilateral instruments, such as bilateral Sino-European calls, have proved successful when put into multilateral settings and contexts. European Joint Programming Initiatives (JPIs) are incorporating numerous European funding agencies, which use bilateral instruments and open up for international STI collaboration.

### Chinese Research and Innovation Funding

The main Chinese government research and innovation funding agencies are the Ministry of Science and Technology (MoST), Chinese Academy of Sciences (CAS), National Natural Science Foundation of China (NSFC), Ministry of Industry and Information Technology (MIIT) and the Ministry of Education (MoE).

The Chinese research and innovation funding system underwent a major reform between 2014 –17 (China State Council 2014) and over 100 programmes merged to create five new research and innovation funding “pillars”:

- National Science Foundation of China
- National Science and Technology Mega Projects
- National Key Research and Development Projects
- Technology Innovation Guidance Fund
- Bases and Talents Programme

In terms of openness to international researchers and companies, only those working in China at NSFC registered institutes can participate in the calls. The international calls are to be funded by the appropriate external resource, such as Horizon 2020. Although there are still a few European programmes which pay for Chinese participation, there are no Chinese calls which

<sup>324</sup>European Commission, People's Republic of China – Country Page: [http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020\\_localsupp\\_china\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020_localsupp_china_en.pdf)  
<sup>325</sup>European Commission - Roadmap for EU-China S&T cooperation: [https://ec.europa.eu/research/iscp/pdf/policy/cn\\_roadmap\\_2018.pdf](https://ec.europa.eu/research/iscp/pdf/policy/cn_roadmap_2018.pdf)  
<sup>326</sup>European Commission, People's Republic of China – Country Page: [http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020\\_localsupp\\_china\\_en.pdf](http://ec.europa.eu/research/participants/data/ref/h2020/other/hi/h2020_localsupp_china_en.pdf)  
<sup>327</sup>European Commission, Roadmap for EU-China S&T cooperation: [https://ec.europa.eu/research/iscp/pdf/policy/cn\\_roadmap\\_2018.pdf](https://ec.europa.eu/research/iscp/pdf/policy/cn_roadmap_2018.pdf)

will pay for European participation in their activities (apart from a few small grants funded by the Ministry of Education).

### Joint Programming Initiative Urban Europe

The "JPI Urban Europe was created in 2010 to address the global urban challenges of today with the ambition to develop a European research and innovation hub on urban matters and create European solutions by means of coordinated research. (...) Currently, JPI Urban Europe has 14 members: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Italy, Latvia, the Netherlands, Norway, Slovenia Sweden and the United Kingdom. Poland, Portugal, Romania, Spain and Turkey are observers, as well as the European Commission. More countries are involved in specific JPI Urban Europe activities"<sup>328</sup>.

The Joint Programme Initiative Urban Europe (JPI UE) as a transnational research and innovation programme is meant to be a showcase for meaningful programme management, alignment of national and institutional research programmes and joint solutions to address global urban challenges.

The pilot call Sustainable and Liveable Cities and Urban Areas<sup>329, 330</sup> was "organized by JPI UE and the National Natural Science Foundation of China (NSFC), invited interdisciplinary Sino-European consortia when opened on January 31st, 2018"<sup>331</sup>. After a number of joint workshops between European and Chinese stakeholders and experts, the Pilot Call was initiated and launched

(with deadline in June 2018) as joint initiative of nine European funding agencies, members in JPI UE, and NSFC, the main Chinese funding agency. Based on the Strategic Research and Innovation Agenda (SRIA) of JPI Urban Europe and the 13th Five-Year Plan of the NSFC the main research area for this Pilot Call was Sustainable Urbanisation in the Context of Economic Transformation & Climate Change. The aim of the Pilot Call in 2018 was to bring together and strengthen Chinese and European research and innovation communities of sustainable urbanisation and assess a possible framework for cooperation and implementation for future joint calls. Sino-European research and innovation projects should also support the development of a long-term roadmap for future joint calls and cooperation activities.

"JPI UE and the China Center for Urban Development<sup>332</sup> (CCUD) signed a Memorandum of Understanding in July 2016 that laid the ground for exchange of information and joint activities in the area of sustainable urbanisation. In May 2018 they released a joint report called Sustainable Urban Development – Main Challenges and Good Practices in Europe and China<sup>333</sup> at the EU-China Forum in Tianjin. The report provides a good basis for shaping future cooperation between JPI UE and CCUD that shows that the two organisations are well positioned for facilitating the creation of Sino-European partnerships between experts and city stakeholders supporting sustainable urbanisation and urban development in Europe and China"<sup>334</sup>.

In January 2019, JPI UE published their STRATEGIC RESEARCH AND INNOVATION AGENDA 2.0<sup>335</sup> (JPI UE

<sup>328</sup>JPI Urban Europe: <https://jpi-urbaneurope.eu/about/intro/>  
<sup>329</sup>JPI Urban Europe and NSFC Pilot call Sustainable and Liveable Cities and Urban Areas: <https://jpi-urbaneurope.eu/calls/sustainable-urbanisation-china-europe/>

<sup>330</sup>Sustainable Urbanisation in the Context of Economic Transformation and Climate Change: Sustainable and Liveable Cities and Urban Areas Europe-China Joint Call for Proposals: [https://jpi-urbaneurope.eu/app/uploads/2018/03/NSFC-JPI-UE-Joint-Call-31-January-2018\\_V13-3.pdf](https://jpi-urbaneurope.eu/app/uploads/2018/03/NSFC-JPI-UE-Joint-Call-31-January-2018_V13-3.pdf)

<sup>331</sup>JPI Urban Europe and NSFC Pilot call Sustainable and Liveable Cities and Urban Areas: <https://jpi-urbaneurope.eu/calls/sustainable-urbanisation-china-europe/>  
<sup>332</sup>CCUD is a public institution under the National Development and Reform Commission (NDRC) specialized in policy research and consultancy on urbanisation and urban development for the government and national level and authorities at lower administrative levels.  
<sup>333</sup>Sustainable Urban Development – Main Challenges and Good Practices in Europe and China. Joint Report, JPI Urban Europe and CCUD, Executive Summary: [https://jpi-urbaneurope.eu/app/uploads/2018/05/Executive-Summary-of-JPI-UE-CCUD-Report\\_EN\\_Final.pdf](https://jpi-urbaneurope.eu/app/uploads/2018/05/Executive-Summary-of-JPI-UE-CCUD-Report_EN_Final.pdf)

<sup>334</sup>JPI Urban Europe website, JPI Urban Europe and CCUD release Joint Report: <https://jpi-urbaneurope.eu/news/jpi-urban-europe-and-ccud-release-joint-report/>

<sup>335</sup>JPI Urban Europe STRATEGIC RESEARCH AND INNOVATION AGENDA 2.0: <https://jpi-urbaneurope.eu/app/uploads/2019/02/SRIA2.0.pdf>

SRIA 2.0), in which the need for internationalisation and widening participation on sustainable urbanisation is emphasized, and it is stated that “Sustainable urbanisation is a global issue, with global policy references and a high potential for Europe to contribute to urban transitions in developed and less developed regions and countries. Benefits from international cooperation do not only arise from global scientific exchange but also from city-city partnerships if co-creation and validation of approaches in different local situations are supported” (p. 35). It goes on to point out that “JPI Urban Europe has already gained experiences in international cooperation and implemented a joint call with the Belmont Forum, another one with NSFC, China” (p. 36), and that they have developed a framework for international cooperation based on these experiences. Within this framework “cooperation with global and international research funding networks to align strategies and research agenda”, “promoting scientific evidence and good practice for urban policy on international level and in cooperation with international networks” and “gradually open up cooperation with new countries outside of Europe, with particular focus on establishing entry points on all continents” (p. 36) are the proposed priorities for continuing international outreach and collaboration.

### Cooperation between China and Individual European Countries<sup>336, 337</sup>

The majority of international co-funded research and innovation initiatives are administered by the NSFC on the Chinese side. Some of the major ministries have

also established international co-funding plans, notably MoST with the EU's Horizon 2020, but also MIIT and MoE. The models used have been greatly standardised and now China-based researchers are dependent on Chinese funding for their support whereas in the past, their participation was often paid for by the international funding agency.



Photo by Fredy Martinez

<sup>336</sup>Roadmap for EU-China S&T cooperation: [https://ec.europa.eu/research/iscp/pdf/policy/cn\\_roadmap\\_2018.pdf](https://ec.europa.eu/research/iscp/pdf/policy/cn_roadmap_2018.pdf)

<sup>337</sup>EU-China Co-funding Mechanism for Research and Innovation Cooperation: [https://ec.europa.eu/research/iscp/pdf/most\\_faq\\_cfm\\_en.pdf](https://ec.europa.eu/research/iscp/pdf/most_faq_cfm_en.pdf)

## Strategic Policy Documents in the context of Sino-European Cooperation on Sustainable Urbanisation

The thematic priorities for Sino-European cooperation in the area of sustainable cooperation have been identified on the basis of a detailed analysis of EU, EU-China, and Chinese policy documents, in addition to UN policy documents.

In the European Union, the EU Urban Agenda (2016) is the most important document on urbanisation.

At the level of EU-China Cooperation, the basic document is the EU-China Partnership on Urbanisation (2012), and later the EU-CHINA SUSTAINABLE URBANISATION FLAGSHIP INITIATIVE (2014-).

In China, the basic policy documents for future urban development and sustainable urbanisation in China are:

- The National New-Type of Urbanisation Plan (2014-2020)
- The Central Urban Work Conference (2015)
- The National Innovation-Driven Innovation Strategy (2016)
- The 13th Five-Year Plan for Economic and Social Development of the PRC (2016)

Within the United Nations, the 2030 Agenda for Sustainable Development and the UN New Urban Agenda are the most important documents on urbanisation.

### CHINESE POLICY DOCUMENTS

#### The National New-Type of Urbanisation Plan (2014-2020)<sup>338</sup>

The Chinese National New-Type Urbanisation Plan was introduced in 2014 to serve as a guideline for China's urban development, and incorporates lessons learnt from home and abroad<sup>339</sup>. It is a national plan proposed for development of a scientific and reasonable urban development model by 2020. The plan aims to connect four major plans of ecological progress, urbanisation quality, expanding domestic demand and rural-urban coordination<sup>340</sup>. Approximately 42 trillion RMB was assigned to finance China's urbanisation efforts over the seven-year period.

The Chinese National New-Type of Urbanisation Plan gives priority to people-centred urbanisation, including priorities such as guiding people movement reasonably, promoting integration of rural migrants into cities and urban agglomerations, supporting development of public services for permanent residents, improving citizens' quality of life, ensuring social equality and rule of law, and making all residents share the benefits.

#### The Central Urban Work Conference (2015)

The Central Urban Work Conference was a meeting in which the central government described the guiding plan for the development of cities. The one held in 2015 was the first such meeting since the reform and opening-up policy was initiated in 1978. In those close to four decades, China has witnessed massive urbanisation and increase in urban population, from around 18 percent in 1978 to more than 50 percent in 2015<sup>341</sup>.

<sup>338</sup>National New-Type of Urbanisation Plan (2014-2020): [http://www.gov.cn/zhengce/2014-03/16/content\\_2640075.htm](http://www.gov.cn/zhengce/2014-03/16/content_2640075.htm) (in Chinese)

<sup>339</sup>China's National New-Type Urbanisation Plan: <http://www.dragon-star.eu/chinas-national-new-type-urbanisation-plan/>  
<sup>340</sup>Ali Cheshmehzangi: China's New-type Urbanisation Plan (NUP) and the Foreseeing Challenges for Decarbonization of Cities: A Review, <https://www.sciencedirect.com/science/article/pii/S1876610216315818>

<sup>341</sup>Central Urban Work Conference, 20 December 2015: [http://www.chinadaily.com.cn/china/2015-12/30/content\\_22863986.htm](http://www.chinadaily.com.cn/china/2015-12/30/content_22863986.htm)

In December 2015, the Chinese government convened the Central Urban Work Conference for the first time in 37 years. The CUWC was chaired by President Xi Jinping and attended by Prime Minister Li Keqiang and other members of the high-level political leadership of China. The CUWC is a clear sign that urban development has a priority position on the political agenda and is at the centre of reform. China's urban development has entered a new phase with some 100 million new urban residents projected by 2020, and migrant workers needing to be given the same rights as their urban counterparts.

In January 2016, in an executive meeting of the State Council in the follow-up of the CUWC, Prime Minister Li Keqiang emphasized the importance of deepening human-centred urbanisation in order to improve liveability of Chinese cities and boost economic development by stimulating investment and consumption.

### **The National Innovation-Driven Innovation Strategy (2016)**<sup>342</sup>

In May 2016, China unveiled guidelines for "a national strategy that maps out three major steps to promote the country's innovation-driven development. The document, which was jointly published by the Communist Party of China Central Committee and the State Council, pledged to build China into an innovative nation by 2020, and an international leader in innovation by 2030"<sup>343</sup>. Urbanisation is an important topic in document.

The National Innovation-Driven Innovation Strategy states as an objective "The development of intelligent city and digital social technology, to promote people-oriented new urbanization: Relying on new technologies and management innovation to support the new urbanization, modern urban development and public services, innovation and social governance methods and means to speed up the comprehensive management of social security process, promote peace in China. Development of transportation, electricity, communications, underground pipe network and other municipal infrastructure standardization, digital, intelligent technology, promote green building, smart city, eco-city and other key technologies in large-scale application. Strengthen major disasters, public safety and other emergency shelter major technology and product research"<sup>344</sup>.

### **The 13th Five-Year Plan for Economic and Social Development of the PRC (2016)**<sup>345</sup>

Since 1953, the Communist Party of China have issued their Five-Year Plans, which are a series of social and economic development initiatives. They are the most important overall planning and policy documents issued by the country's central authorities, and the current plan is the 13th one issued.

The Five-Year Plan mainly aims to arrange national key construction projects, manage the distribution of productive forces and individual sector's contributions to the national economy, map the direction of future development, and set targets<sup>346</sup>.

<sup>342</sup>The Central Committee of the Communist Party of China issued the "Outline of National Innovation Driven Development Strategy" 19 May 2016: [http://www.most.gov.cn/yw/201605/t20160520\\_125675.htm](http://www.most.gov.cn/yw/201605/t20160520_125675.htm) (in Chinese)

<sup>343</sup>China unveils strategy for innovation-driven development: <http://www.scio.gov.cn/32618/document/1478253/1478253.htm>

<sup>344</sup>The Central Committee of the Communist Party of China issued the "Outline of National Innovation Driven Development Strategy" 19 May 2016: [http://www.most.gov.cn/yw/201605/t20160520\\_125675.htm](http://www.most.gov.cn/yw/201605/t20160520_125675.htm) (in Chinese)

<sup>345</sup>13th Five-Year Plan for Economic and Social Development: <http://en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf>

<sup>346</sup>What is the Five-Year-Plan: <http://www.china.org.cn/english/MATERIAL/157595.htm>

The 13th Five-Year Plan for Economic and Social Development gives priority to people-centered urbanisation: "In committed pursuit of people-centered urbanization based on city clusters, supported by the comprehensive carrying capacity of cities, and safeguarded by institutional innovations, we will step up the pace of new urbanisation, make further progress in building a new socialist countryside, strive to bridge the gap between urban and rural development, and facilitate urban and rural integration"<sup>347</sup>.

As an additional supporting background document, the report *The State of China's cities* (2016/2017) has been taken into account.

*The State of China's Cities (2016/2017)*<sup>348</sup> laid out in detail the updates on urban development in China in recent years. The compilation of the report coincided with the pending adoption of the UN's Sustainable Development Goals (SDG) and the enacting of the New Urban Agenda. Therefore, the report laid special stress on how China's cities integrate into the mainstream of world development, and by defining the theme of that year as Global Perspective and China Practice: Planning for Future of Cities, it focused more on how China is aligning itself with the international standards and adopting the practice based on its own specific conditions, among other things.

The report was presented by the China Science Center of International Eurasian Academy of Sciences, the China Association of Mayors, the Urban Planning Society of China and UN-Habitat.

## EUROPEAN POLICY DOCUMENTS

### The Urban Agenda for the EU (2016) - 'Pact of Amsterdam'<sup>349</sup>

"The Urban Agenda for the EU is an integrated and coordinated approach to deal with the urban dimension of EU and national policies and legislation. By focusing on concrete priority themes within dedicated Partnerships, the Urban Agenda seeks to improve the quality of life in urban areas"<sup>350</sup>.

"The Urban Agenda for the EU was launched in May 2016 with the Pact of Amsterdam. It represents a new multi-level working method promoting cooperation between Member States, cities, the European Commission and other stakeholders in order to stimulate growth, liveability and innovation in the cities of Europe and to identify and successfully tackle social challenges"<sup>351</sup>.

"In order to realize the full potential of the European Union and deliver on its strategic objectives, the Urban Agenda for the EU strives to involve Urban Authorities in achieving Better Regulation, Better Funding and Better Knowledge<sup>352</sup> (knowledge base and exchange):

- EU legislation is to a large extent implemented in Urban Areas and has direct and indirect implications for Urban Authorities. EU legislation sometimes has conflicting impacts and its implementation at local level can be difficult. Therefore, EU regulation should anticipate these difficulties.
- Urban Authorities are among the key beneficiaries of EU funding. Access to existing funding is however sometimes administratively burdensome. The Urban Agenda for the EU aims to improve

<sup>347</sup>13th Five-Year Plan for Economic and Social Development, the headline paragraph of Part VIII "New Urbanisation"

<sup>348</sup>The State of China's Cities (2016/2017): <https://unhabitat.org/books/the-state-of-chinas-cities-2016-2017/>

<sup>349</sup>European Commission (2016) Pact of Amsterdam: <https://ec.europa.eu/futurium/en/urban-agenda>

<sup>350</sup>European Commission, The Urban Agenda for the EU website:

[http://ec.europa.eu/regional\\_policy/en/policy/themes/urban-development/agenda/](http://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/)

<sup>351</sup>A new call to join urban agenda partnerships: [https://europa.eu/cultural-heritage/news/new-call-join-urban-agenda-partnerships\\_en](https://europa.eu/cultural-heritage/news/new-call-join-urban-agenda-partnerships_en)

<sup>352</sup>What is the Urban Agenda for the EU?: <https://ec.europa.eu/futurium/en/urban-agenda-eu/what-urban-agenda-eu>

accessibility and coordination of existing funding possibilities and to contribute to their simplification.

- Knowledge on how Urban Areas evolve is fragmented and successful experience can be better valorised, diffused and exploited. The Urban Agenda for the EU therefore intends to enhance a better urban policy knowledge base and the exchange of good practice"<sup>353</sup> (p. 3).

Within the Urban Agenda for the EU, the 12 Partnerships that have been defined so far are as follows: Inclusion of Migrants and Refugees, Air Quality, Housing, Urban Poverty, Circular Economy, Digital Transition, Urban Mobility, Jobs and Skills in the Local Economy, Energy Transition, Climate Adaptation, Innovative and Responsible Public Procurement and Sustainable Use of Land and Nature-Based Solutions. Each Partnership involves cities, Member States, the Commission and stakeholders such as NGOs or businesses, on a voluntary and equal basis. Together they work on developing and implementing concrete actions to successfully tackle challenges of cities and to contribute to smart, sustainable and inclusive growth<sup>354</sup>.

**Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: The Urban Dimension of EU Policies – Key Features of an EU Urban Agenda (2014)**<sup>355</sup>

"An EU urban agenda could respond to several objectives. An EU urban agenda could serve to enhance the quality, efficiency and effectiveness of policies through better coordination of policies, actors

and governance levels and a better understanding of urban development contexts in the conception and implementation of policies. It could strengthen cities' engagement and ownership of EU and national policymaking and implementation. It could support cities' capacity for transition and structural change to ensure viable urban economies and a socially, environmentally and territorially sustainable development of urban areas. By being linked to holistic local development objectives it could bring EU policymaking closer to the citizens. Finally, it could be instrumental in EU's development aid policies and be a vehicle to promote global sustainability issues. The majority of EU policies have an urban dimension, directly or indirectly. However, there is a potential for improvement and a stronger engagement and interaction between the various governance levels and a stronger focus on urban policy priorities in national and European policymaking"<sup>356</sup> (p. 10).

"The Urban Agenda for the EU will contribute to the implementation of the UN 2030 Agenda for Sustainable Development, notably Goal 11 Make cities inclusive, safe, resilient and sustainable' and the global 'New Urban Agenda' as part of the Habitat III process"<sup>357</sup> (p. 6).

**Joint Communication to the European Parliament and the Council - Elements for a new EU strategy on China (2016)**<sup>358</sup>

The Joint Communication proposed elements for a new EU strategy on China, and was intended to constitute the China dimension of implementing the Juncker Commission's political guidelines, contributing to the

<sup>353</sup>European Commission (2016) Pact of Amsterdam: <https://ec.europa.eu/futurium/en/urban-agenda>

<sup>354</sup>The Urban Agenda for the EU: [https://ec.europa.eu/regional\\_policy/en/policy/themes/urban-development/agenda/](https://ec.europa.eu/regional_policy/en/policy/themes/urban-development/agenda/)

<sup>355</sup>Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions the urban dimension of EU policies – Key features of an EU urban agenda: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52014DC0490>

<sup>356</sup>Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions the urban dimension of EU policies – Key features of an EU urban agenda: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52014DC0490>

<sup>357</sup>Initial list of Priority Themes in the Urban Agenda for the EU: [https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam\\_en.pdf](https://ec.europa.eu/futurium/en/system/files/ged/pact-of-amsterdam_en.pdf)

<sup>358</sup>Joint Communication to the European Parliament and the Council - Elements for a New EU Strategy on China: [http://eeas.europa.eu/archives/docs/china/docs/joint\\_communication\\_to\\_the\\_european\\_parliament\\_and\\_the\\_council\\_-\\_elements\\_for\\_a\\_new\\_eu\\_strategy\\_on\\_china.pdf](http://eeas.europa.eu/archives/docs/china/docs/joint_communication_to_the_european_parliament_and_the_council_-_elements_for_a_new_eu_strategy_on_china.pdf)

jobs, growth and investment agenda and to reinforcing the EU as a global actor. It takes into account the views of the European Parliament in its December 2015 report on the EU's relations with China, and aimed to set out a policy framework for EU engagement with China for the next five years.

"The *EU-China 2020 Strategic Agenda for Cooperation*<sup>359</sup> fulfils an important role as the highest-level joint document guiding the EU-China Comprehensive Strategic Partnership. But the EU needs its own strategy, one which puts its own interests at the forefront in the new relationship; which promotes universal values; which recognises the need for and helps to define an increased role for China in the international system; and is based on a positive agenda of partnership coupled with the constructive management of differences" (p. 2).

## SINO-EU POLICY DOCUMENTS

**EU-China Urbanisation Partnership (Better City Better Life) (2012)**<sup>360</sup>

"Leaders announced the establishment of the China-EU Partnership on Urbanisation, which aims at promoting exchanges and cooperation in a wide range of sustainable urban development. The two sides agreed to hold the first China-EU Mayors' Forum in 2012", Premier WEN, President Barroso, President Van Rompuy, Joint Statement of the EU-China Summit, 14 February 2012, Beijing.

"The objective of the Partnership is to provide an open political platform for European and Chinese

stakeholders to cooperate and share experiences in addressing the economic, social and environmental challenges of urbanisation". It will offer a natural framework for concerted actions, such as a new programme designed to assist Chinese mayors, and the creation of an annual EU-China Urban Forum from 2012 onwards. The political initiative should also constitute a platform for Member States to leverage their existing and future actions in the field of urbanisation in China. The EU-China Urbanisation Partnership aims "at tackling challenges through cooperative efforts between stakeholders at all appropriate levels, including national, regional and local levels"<sup>361</sup> (p. 2).

**EU-CHINA SUSTAINABLE URBANISATION FLAGSHIP INITIATIVE – strategic joint research and innovation actions to turn challenges into opportunities for growth, jobs and better living conditions for millions of urban citizens both in Europe and China**<sup>362</sup>

Research and innovation forms one of the five pillars of the EU-China Partnership on Urbanisation launched in 2012. The EU-China Joint Workshop on Urban Innovation held in the city of Foshan in May 2013 focused on topics of common interest surrounding sustainable development and urban planning, green urban mobility, and sustainable energy solution for cities. Sustainable urbanisation has also been confirmed as a joint priority at the EU-China Innovation Cooperation Dialogue<sup>363</sup>.

Cooperation for the period 2018-2020 will target sustainable urbanisation with nature-based solutions

<sup>359</sup>EU-China 2020 Strategic Agenda for Cooperation: [http://eeas.europa.eu/archives/docs/china/docs/eu-china\\_2020\\_strategic\\_agenda\\_en.pdf](http://eeas.europa.eu/archives/docs/china/docs/eu-china_2020_strategic_agenda_en.pdf)

<sup>360</sup>EU-China Partnership on Urbanisation (2012): [https://eeas.europa.eu/delegations/sierra-leone/15425/eu-china-partnership-urbanisation-factsheet\\_ga](https://eeas.europa.eu/delegations/sierra-leone/15425/eu-china-partnership-urbanisation-factsheet_ga)

<sup>361</sup>Joint Declaration on The EU-China Partnership on Urbanisation (2012): [https://ec.europa.eu/energy/sites/ener/files/documents/20120503\\_eu\\_china\\_joint\\_declaration\\_urbanisation\\_en.pdf](https://ec.europa.eu/energy/sites/ener/files/documents/20120503_eu_china_joint_declaration_urbanisation_en.pdf)

<sup>362</sup>EU-China Sustainable Urbanisation Flagship Initiative: [https://eeas.europa.eu/sites/eeas/files/eu\\_china\\_research\\_in\\_urbanisation.pdf](https://eeas.europa.eu/sites/eeas/files/eu_china_research_in_urbanisation.pdf)

<sup>363</sup>EU-China Sustainable Urbanisation Flagship Initiative: [https://eeas.europa.eu/sites/eeas/files/eu\\_china\\_research\\_in\\_urbanisation\\_2018.02.06\\_0.pdf](https://eeas.europa.eu/sites/eeas/files/eu_china_research_in_urbanisation_2018.02.06_0.pdf)

for urban ecosystems and natural treatment solutions for water security in cities. These topics are intended to promote balanced and substantial cooperation between European and Chinese partners.

"Through targeted research and innovation actions in various interrelated topics surrounding cities (transport, environment, energy, urban planning etc.), Europe and China strive for cost-effective, integrated technological and nature-based solutions that provide multiple benefits, resource and energy efficiency, reduce GHG emissions, increase urban resilience to changes, better health and leverage costly problems into opportunities for growth, jobs and better living conditions for millions of urban citizens both in Europe and China" (p. 4). The Co-funding mechanism will provide momentum for a strong Chinese participation in these topics.

Strategic joint EU-China research and innovation cooperation in sustainable urbanisation is a long-standing priority for both sides and it has been pursued with a number of joint projects in FP7 and Horizon 2020.

#### **EU-China 2020 Strategic Agenda for Cooperation (2013)**<sup>364</sup>

The EU-China 2020 Strategic Agenda for Cooperation fulfils an important role as the highest-level joint document guiding the EU-China Comprehensive Strategic Partnership.

"Relations between the EU and China have developed fast since diplomatic ties were established in 1975,

and in particular the creation of the EU-China Comprehensive Strategic Partnership in 2003 has deepened and broadened cooperation in a wide range of areas" (p. 2), including urbanisation.

As significant actors in a multipolar world, the EU and China share a responsibility for promoting peace, prosperity and sustainable development for the benefit of all. In 2013, they agreed to continue to consolidate and develop their strategic partnership to the benefit of both sides, based on the principles of equality, respect and trust. The EU reaffirmed its respect for China's sovereignty and territorial integrity. China also reaffirmed its support to EU integration.

"The EU and China both put forward strategic development plans - China's two centenary goals and the 12th Five Year Plan, the EU 2020 Strategy - which presented potential for synergies to enhance cooperation for win-win results. The two sides were committed to promoting the EU-China Comprehensive Strategic Partnership in the next decade. In that perspective, both sides jointly adopted the EU-China 2020 Strategic Agenda for Cooperation" (p. 2). Addressing climate change, protecting the environment, promoting transparent international energy markets and facilitating resource-efficient, far-reaching, socially inclusive and low-carbon development policies were placed high on the international action list.

Both parties agreed on prioritizing green growth as a key area of strategic and practical EU-China cooperation, to continue promoting cooperation

<sup>364</sup>The EU-China 2020 Strategic Agenda for Cooperation: [http://eeas.europa.eu/archives/docs/china/docs/eu-china\\_2020\\_strategic\\_agenda\\_en.pdf](http://eeas.europa.eu/archives/docs/china/docs/eu-china_2020_strategic_agenda_en.pdf)

on the environmental flagship initiatives developed respectively by China and the EU, "that innovation has an important contribution to make to achieve sustainable development, and that effective protection of Intellectual Property Rights is crucial to support the effective development and deployment of innovative solutions and emerging industries" (p. 9). In addition, a number of important social challenges that need to be addressed, including social security and health care, high and quality employment and demographic ageing, were touched upon.

The Urbanisation section of this document states as follows<sup>366</sup>:

1. "Carry out cooperation and promote advanced technology and managerial experience in sustainable urban development planning, urban infrastructure and management and urban-rural integration, including transparent and equitable consultative procedures with public and business stakeholders;
2. Ensure the success of the EU-China Urbanisation Partnership Forum, the EU-China City Expo and the EU-China Mayors' Forum, improve the governing framework of the EU-China Partnership, support the development of numerous relevant city pairings and steer EU-China urbanisation cooperation by the Joint Steering Committee of the EU-China Urbanisation Partnership. Support the development of EC-Link as a cooperation platform to enhance the impact of the Partnership;
3. Conduct dialogues and share experience on urban planning and design, urban socio-economic issues,

good administration, natural and cultural heritage preservation, green and low-carbon development, disaster prevention and control, urban mobility and eco-buildings and construction standards in the building sector;

4. Actively build demonstration cities, support EU-China urban cooperation projects, promote cooperation between cities, and between cities and industrial parks and enterprises, creating a level playing field for all stakeholders involved, and reinforcing cooperation in the fields of finance and innovation to elevate the quality and level of urban development" (p. 11).

## UN POLICY DOCUMENTS

### UN: The 2030 Agenda for Sustainable Development (2015)<sup>367</sup>

"Transforming our World: the 2030 Agenda for Sustainable Development, including its 17 Sustainable Development Goals (SDGs) and 169 targets was adopted on 25 September 2015 by Heads of State and Government at a special UN summit. The Agenda is a commitment to eradicate poverty and achieve sustainable development by 2030 worldwide, ensuring that no one is left behind. The adoption of the 2030 Agenda was a landmark achievement, providing for a shared global vision towards sustainable development for all"<sup>368</sup>.

Out of the 17 Goals to Transform Our World, several are urbanisation-related, but especially SDG 11 is pinpointed towards urbanisation. SDG 11 "Sustainable

<sup>366</sup>UN's 2030 Agenda for Sustainable Development: <https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>  
<sup>367</sup>European Commission website, The 2030 Agenda for Sustainable Development and The SDGs, [http://ec.europa.eu/environment/sustainable-development/SDGs/index\\_en.htm](http://ec.europa.eu/environment/sustainable-development/SDGs/index_en.htm)  
<sup>368</sup>The EU-China 2020 Strategic Agenda for Cooperation, PART III. SUSTAINABLE DEVELOPMENT, initiative IV. (8 in the overall plan); Urbanisation

Cities and Communities – Make cities and human settlements inclusive, safe, resilient and sustainable”, aims to renew and plan cities and other human settlements in a way that offers opportunities for all, with access to basic services, energy, housing, transportation and green public spaces, while reducing resource use and environmental impact.

### **UNHabitat3: The New Urban Agenda (2016)**<sup>369</sup>

“World leaders have adopted the New Urban Agenda, which sets a new global standard for sustainable urban development, and will help us rethink how we plan, manage and live in cities. The New Urban Agenda is a roadmap for building cities that can serve as engines of prosperity and centres of cultural and social well-being while protecting the environment. The Agenda also provides guidance for achieving the Sustainable Development Goals and provides the underpinning for actions to address climate change.

Now it is up to national governments and local authorities to implement the Agenda, with technical and financial partnerships and assistance from the international community.

In the New Urban Agenda, leaders have committed to:

- Provide basic services for all citizens: These services include: access to housing, safe drinking water and sanitation, nutritious food, healthcare and family planning, education, culture and access to communication technologies.
- Ensure that all citizens have access to equal opportunities and face no discrimination: Everyone

has the right to benefit from what their cities offer. The New Urban Agenda calls on city authorities to take into account the needs of women, youth and children, people with disabilities, marginalized groups, older persons, indigenous people, among other groups.

- Promote measures that support cleaner cities: Tackling air pollution in cities is good both for people's health and for the planet. In the Agenda, leaders have committed to increase their use of renewable energy, provide better and greener public transport, and sustainably manage their natural resources.
- Strengthen resilience in cities to reduce the risk and the impact of disasters: Many cities have felt the impact of natural disasters and leaders have now committed to implement mitigation and adaptation measures to minimize these impacts. Some of these measures include: better urban planning, quality infrastructure and improving local responses.
- Take action to address climate change by reducing their greenhouse gas emissions: Leaders have committed to involve not just the local government but all actors of society to take climate action taking into account the Paris Agreement on climate change which seeks to limit the increase in global temperature to well below 2 degrees Celsius. Sustainable cities that reduce emissions from energy and build resilience can play a lead role.
- Fully respect the rights of refugees, migrants and internally displaced persons regardless of their migration status: Leaders have recognized that

<sup>369</sup>UN's New Urban Agenda: <http://habitat3.org/wp-content/uploads/NUA-English.pdf>

migration poses challenges but it also brings significant contributions to urban life. Because of this, they have committed to establish measures that help migrants, refugees and IDPs make positive contributions to societies.

- Improve connectivity and support innovative and green initiatives: This includes establishing partnerships with businesses and civil society to find sustainable solutions to urban challenges
- Promote safe, accessible and green public spaces: Human interaction should be facilitated by urban planning, which is why the Agenda calls for an increase in public spaces such as sidewalks, cycling lanes, gardens, squares and parks. Sustainable urban design plays a key role in ensuring the liveability and prosperity of a city<sup>370</sup>.

In order to achieve this, the New Urban Agenda will require new urban rules and regulations, improved urban planning and design, and municipal finance, among other things.

**UNDP. Sustainable Urbanization Strategy (2016) - UNDP's support to sustainable, inclusive and resilient cities in the developing world<sup>371</sup>**

"The Sustainable Urbanization Strategy outlines how UNDP is responding to rapid urbanisation in developing countries and its consequences for sustainable development. It outlines how UNDP will support countries and cities, building upon its past and current work on urbanisation. The strategy presents the complex and evolving urban challenges and the interrelated development choices which cities face as

they strive to achieve the SDGs and implement the New Urban Agenda. It also sets out UNDP's comparative advantage and experience in core thematic areas which are relevant to achieving the SDGs in cities and urban areas"<sup>372</sup>.



<sup>370</sup>United Nations, Sustainable Development Goals, The New Urban Agenda: Key Commitments: <https://www.un.org/sustainabledevelopment/blog/2016/10/newurbanagenda/>

<sup>371</sup>UNDP's Sustainable Urbanisation Strategy (2016):

<sup>372</sup>UNDP website: <https://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/sustainable-urbanization-strategy.html>

# 06

## CONCLUSIONS & NEXT STEPS



Photo by Sacha Styles

## Next Steps

Based on in-depth desktop studies, as well as interviews with stakeholders and experts, the outcomes of partner meetings and workshops, and information shared by Chinese and European stakeholders and invited speakers at events, URBAN-EU-CHINA recommends that

- Europe and China develop and promote joint measures for people-centred cities and communities, with cooperation mechanisms to support mutual learning of the important experiences made in practice.
- China and Europe cooperate more closely on comprehensive and integrated approaches to create green cities and communities, with an integrated approach including environmental, technological, regulatory, social, cultural, economic, spatial and other perspectives.
- Europe and China cooperate to develop successful approaches for smart, innovative cities and communities better and faster. Digital innovation in public sector, participatory approaches and public-private partnerships are needed for cities and communities to develop better urban services and infrastructures, de-risk, become more adaptive to external change and alleviate policy implementation bottlenecks. In short, to deal with any future challenges.
- China and Europe cooperate more closely on city-to-city partnerships, and in particular the larger scale clustering mechanisms at city and regional level that include increase cooperative innovation between companies, public sector, research and capacity building.
- In addition to individual city and regional cooperation, we recommend that China consider providing a funding mechanism similar to the European H2020 SCC01 lighthouse projects, and enabling the CFM to support joint calls for Chinese and European city-industry-research clusters, for knowledge exchange and cooperation with the Chinese New Areas and similar strategic urban projects.

For the second, revised version of the Strategic Research and Innovation Agenda, URBAN-EU-CHINA will organise a co-creative process to build upon the first version of the R&I Agenda. The version at hand has been developed mainly by analysing strategy documents and the material generated in URBAN-EU-CHINA events such as the industry workshops and the foresight workshops, and the events such as the annual EU-China Forum on Sustainable Urbanisation. Besides gathering individual feedback from stakeholders, a feedback survey and a series of workshops, round table discussions and meetings will be organised to bring UEC partners from EU and China and other interested stakeholders together. The Joint Programming Initiative Urban Europe, the European Innovation Partnership on Smart Cities and Communities, and the EU Member States Science and Technology Working Group on Sustainable Urbanisation will be engaged in this feedback mapping, amongst others stakeholder groups.

The aim is to identify requirements and needs to jointly translate them into adequate pathways and instruments for implementing the R&I Agenda.

A task force consisting of URBAN-EU-CHINA partners from EU and China will be supporting the process. More specifically, the task force will support the planning and organisation of the activities and analysing the results.

The final version of the Research and Innovation Agenda on EU-China Cooperation for Sustainable Urbanisation will be released in December 2019.

# 07

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<https://www.un.org/sustainabledevelopment/sustainable-consumption-production/>

The 2016 Urban China Initiative: Annual Forum (15/12/16)

[http://www.urbanchinainitiative.org/en/content/details\\_24\\_62323.html](http://www.urbanchinainitiative.org/en/content/details_24_62323.html)

2017 Global (Shanghai) Artificial Intelligence Innovation Summit held in Shanghai

<http://www.ikcest.org/article-53552.htm>

Two Countries, One Challenge: Ageing Solutions for Education, Insurance and Urban Life in China and Germany (30/11 – 01/12/2017)

<https://www.sustainable-urbanisation.org/en/events/two-countries-one-challenge-ageing-solutions-for-education-insurance-and-urban-life-in-china>

Sino-German Dialogue Forum on the Environment and Climate Change: Exploring Solutions in Urban Solid Waste Management (06/06/18)

<https://sino-german-dialogue.org/>

United Nations Climate Change, What is the Paris Agreement

<https://unfccc.int/process-and-meetings/the-paris-agreement/what-is-the-paris-agreement>

Urban Knowledge Network Asia (UKNA)

<https://www.ukna.asia/>

# 08

## ANNEX

### Interview Guide

The URBAN-EU-CHINA project aims to create a Strategic Research and Innovation Agenda for EU-China cooperation on sustainable urbanization.

As a first step to identify and structure the key challenges and opportunities in EU-China cooperation, the consortium partners, Advisory Board and other key stakeholders will be interviewed to extract their experiences and other knowledge that can help draft the Research and Innovation Agenda.

#### Interview guide

As the target group is formed by experts and stakeholders from EU and China, the interviews will be executed in Chinese and English.

#### Interview questions

Name (姓名): \_\_\_\_\_

Affiliation (工作单位): \_\_\_\_\_

Email (电邮): \_\_\_\_\_

Position (所在职位): \_\_\_\_\_

**1. Based on your previous experience, what are the most important challenges in cooperation between EU and China on sustainable urbanization?**

基于您以往的经验，您认为在中欧可持续城市化合作中最为严峻的挑战是什么？

**2. Why, in your opinion, have these challenges not yet been solved? What kind of novel solution would be needed to solve the challenges? Which kinds of experts and stakeholders would need to be involved?**

您为什么觉得这些挑战最为重要，您认为如何才能解决这些挑战？有哪些具体的措施可以解决这些挑战？需要哪些专家和相关方加入才可以解决？

**3. Do you see any upcoming opportunities for improving sustainable urbanization, and the cooperation between EU and China in this field?**

您在未来的中欧城市化合作领域有哪些机遇？



Photo by Yiran Ding

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For further information, kindly check  
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