Sustainable Urban Renewal in China

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1. BACKGROUND

In the past 40 years, China has gone through the biggest and fastest urbanization process in the world. China's urbanization rate reached 63.89% at 2020, meaning that urban population is 902 million. Even with 2-years' COVID-19's attack, Chinese cities are not slowing down their steady steps. Either urbanization process or development stage in China is profoundly different from Europe. The urbanization rate of China just reached 50% in 2010, while main European countries reached this amount in late 19th Century or early 20th Century. Yet, since the climate issues could only be tangled by joint effort among both sides, green urbanisation (esp. urban regeneration) in China and associated transition tendency is a very relevant topic for EU-China urban and regional development cooperation.

2. CHALLENGES OF URBAN RENEWAL IN CHINA

2.1 CHALLENGE 1: MORE FREQUENT CLIMATE DISASTERS

Both European and Chinese cities are witnessing more frequent extreme weather disasters. 'Black Swan' incidents are no longer 'highly improbable'. The global disasters, which include geographic, meteorological and hydrological disasters that caused 100-thousand USD's loss, have grown from 250 in 1980 to 840 in 2018. Take the closest news as example, the similar devastating rainstorms destroyed city flooding prevention system at both Western Germany and Zhengzhou city during the previous summer. To be specific, the maximum rainfall reached 201.9mm/h during the peak hour 16:00-17:00 on 20th July in Zhengzhou, while the average rainfall per year in this city is only 641mm.

2.2 CHALLENGE 2: LOW FERTILITY RATE AND SMALLER FAMILIES IN AN AGING SOCIETY

According to the 7th National Population Census in China, only 12 million was born in 2020. With the total fertility rate as 1.3, the average population growth rate is only 0.53% and is keeping declining.
Chinese cities are entering aging society, while the proportion of 15-59 years' old drops 6.79%. Average population per household fells to 2.62, which shows the break down of traditional 3-persons' family pattern dated back to the 'one-child policy' era.

2.3 CHALLENGE 3: SLOWING DOWN URBANIZATION RATE

Despite of the rapid development in the past 4 decades, China's urbanization rate has dropped to 0.6-0.8% every year. It echoes China's GDP's drop to 6.1% in 2019 (2.3% in 2020, due to COVID-19). Major mega-cities have set the maximum population according to their environmental capacity in their master plans. Overall drinking water supply is usually the key threshold. For instance, Beijing is planned to accommodate 23 million peaking population by 2020. It means that this city is getting more and more selective on attracting talents and industries. It also gives great opportunities for government officials to look inwards and pay more attention on urban renewal.

2.4 HOW TO UNDERSTAND URBAN RENEWAL IN CHINESE CITIES?

To summarize, urban renewal in much more than just reserving and restoration of city memory in China. It

- **From growth-oriented to quality-oriented**: For the first time, "urban renewal action" is included in the <Proposal for the 14th Five-Year Plan of National Economic and Social Development and the Vision 2035>. This is no longer an industry hotspot or an academic concept, but a comprehensive approach to national development and the direction of urbanization, forcing on the transformation of traditional urban planning and management.
- **From high-carbon expansion to low-carbon compact (re)development**: City is considered as the key battlefield to decarbonization. According to IPCC， carbon emission from building sector contribute 1/3 of overall emission in China, 20% of which is during the operational phase and 18% is during the construction phase
- **From physical planning to integrated spatial governance**: Take the 'Future Community' Initiative as an example. It started in Zhejiang Province and has been promoted throughout the country. The namely 9 scenarios are highlighted as future neighborhood, education, health-care, business, traffic, low-carbon, architectural, service, and governance scenarios.

3. STRATEGIES AND APPROACHES

3.1 '30.60' - CARBON PEAKING AND NEUTRALITY OBJECTIVES

Chinese society is witnessing the paradigm change towards 'Ecological Civilization' in the past few years. In particular, the "Two-Mountain Theory", which could be literally understood as 'Lucid water and lush mountains are invaluable assets', is a Chinese interpretation of sustainable development. As President XI Jinping has indicated at the 75th Session of UN General Assembly in 2019, 'China, as the world's largest developing nation, has committed itself to peaking carbon emissions before 2030 and attaining carbon neutrality by 2060.' This gives the fundamental direction for overall strategies and urbanization policies in China for the coming decades.

3.2 STRATEGIES ON NATIONAL LEVEL

(1) <Complete and Accurate Implementation of Carbon Peak and Neutrality Objectives>, October 2021

This policy is considered as the keystone of "1+N" policy framework facing '30.60' objectives. It emphasises that establishing an overall control system of carbon dioxide emission is the core of carbon peaking and neutralization. Mandatory information disclosure is considered as the top priority. This overall control system is a comprehensive system, which not only includes the figures of the total carbon dioxide emissions, but also predicts emissions under different scenarios, based on mandatory information disclosure and combined with the needs of local economic and social development.
Besides, role of market is highlighted as the key engine to reach carbon neutrality. The government and the market are expected to coordinate as the 'two wheels to drive'.
In particular, key emission industries are picked as the crucial starting point for carbon peaking and carbon neutralization. They are expected to accelerate the transition of industrial structure, production mode, lifestyle and spatial layout, with the aim to conserve resources and protect the environment.

(2) <Action Plan for Carbon Dioxide Peaking Before 2030>, October 2021

This policy illustrates the national roadmap towards the first milestone, i.e. carbon dioxide peeking. In particular, the Forth chapter focuses on how to reach carbon peaking in urban and rural development. It points out key sectors that should be paid attention to, including:

- Promoting urban and rural green transition, accelerating building efficiency improvement with 100% national green building labels by 2025; restructuring of energy consumption in building stock with objective that usage of in urban buildings reach 8% by 2025;
- Promote low-carbon transformation in town and village development.

(3) <Instructions of Preventing Massive Demolishment-and-Rebuilding in Urban Renewal>, Aug 2021

- Shift from the 'real estate development model' toward 'urban management model': attract more enterprises in a long-term operation and individual residents for micro-renewal;
- Restriction on massive demolishment: the overall demolishment floor area should be no more than 20% of overall current total floor area;
- Restriction on massive re-building: within one renewal unit or project, the demolishment floor area \ new building floor area should be no more than 2;
- Restriction on massive re-location and change of social structure: local or close placement of residents should be no less than 50%.

(4) <Guidelines on Green Development in Urban and Rural Areas>, July 2021

This is the key policy focusing on green development in urban and rural area. The overall objectives are: By 2025, the green development system and policy system of urban and rural construction are basically completed. By 2035, the comprehensive green development of urban and rural construction and rapid improvement on carbon emission reduction are reached. Besides, it also indicated:

- Promote the urban-rural integrated development;
- Transform the development mode of urban and rural construction;
- Innovative working methods.

(5) <Guidelines for Regeneration of Old Residence Community in City and County>, July 2020

This is the key policy focusing on green development in urban and rural area. It follows the logic that an integrated, green, and people-centric residence regeneration strategy can help make communities inclusive and sustainable.

3.3 ACTIONS ON MUNICIPAL LEVELS

Alongside with the national strategies, local cities have already explored their own contextualized innovations. The following table could give some glimpse.

City	Project	Features
Beijing	Mini-Hutong & Mini-Courtyard	• Urban Acupuncture; • As a series of architectural experiment in Beijing Design Week 2013
	Beijing Steel Plant Park Redevelopment	• Led by government; • Stimulated by mega-event: 2022 Winter Olympic (office & venue); selected as the only C40 “Climate Positive” program in China
Shanghai	Tian-zi-fang area	• Shanghai firstly proposed ‘organic regeneration’ • Stated from self-organization by contemporary artists and traditional crafting industry
Xiamen	Tsan-tshù-uann village	• Bottom-up regeneration, self-organized community building; • The most artistic-style fishing village in China
Shenzhen	Shuiwei Village Apartment	• Cooperation between government, enterprise and villagers; • First social housing project that is regenerated from village houses; • Win-win for all stakeholders

4. SUGGESTIONS FOR THE CITY-TO-CITY/REGION-TO-REGION COOPERATION

The objectives of this training is to help EU cites/regions to deeply understand Chinese context and transfer the knowledge to the IURC China cooperation process. Thus, having shared the above-mentioned social, economic and technical context of Chinese urban renewal, it is crucial to identify potential pilot areas in the future cooperation between European and Chinese counterparts. In other words, what are the niches in Sino-Europe urbanization cooperation?

4.1 COOPERATION POTENTIALS BY SECTOR

The future urban/region cooperation should be no-doubtfully concentrated on climate issues, focusing on both mitigation and adaptation. The relevant sectors include but not limited to the following:

- **Green Building**: Full-Life-Circle emission monitoring, PEDF (Photovoltaic, Energy storage, Direct current, & Flexibility);
- **Clean Energy:** Energy storage technology, hydrogen energy;
- **Green Transport:** Clean energy vehicles; driverless vehicles;
- **Water Management**: Reclaimed water utilization;
- **Ecological System**: GEP (Gross Ecosystem Product), NbS (Nature-based Solutions), urban biodiversity, ecological Restoration;
- **Circular Economy**: 'City Mining' - household waste management; smart manufacturing;
- **Green Financing**: Carbon Trading, Green bond, insurance, etc.; Public carbon credit system;
- **Smart Urban Infrastructure:** Smart governance on community level, city level and national level.

4.2 COOPERATION POTENTIALS BY ACTIVITIE

There is clear tendency that China is getting less direct ODA (Official Development Assistance) but participating/leading more bilateral dialogue. The potential activities include but not limited to the following:

- **Policy dialogue:** strong interest on 'how', i.e. institutional transplantation & institutional innovation (eg: policy incentives regarding)
- **Piloting**: Joint planning for pilot area/district (eg: Sino-German eco city cooperation under the framework of China Society for Urban Studies and dena), pilot project demonstration;
- **Technology application**: Joint research, joint venture, patent assignment
- **Standardization cooperation:** Joint research, and replication.

5. Conclusions

As Prof. Chris Hamnett wisely raised in his lecture: Is Chinese urbanization unique? If so, how different? Anyone that is/will be involved in Europe-China cooperation should keep in mind of the fact that this process is centrally led by state government and driven by local growth coalition with land revenue system. With the strong pressure pursing '30.60' – carbon peaking and neutrality objectives, Chinese cities are stepping into a new era of green urbanization, in which will face many shared challenges with their European peers. This is where two sides could meet and better understand each other.