China Council for International Cooperation on Environment and Development

Some suggestions on innovation-driven green urbanization transformation

---CCICED SPS on "Green Urbanization Strategy and Pathways Towards Regional Integrated Development"

2018 Policy Recommendation Report

(Discussion Paper)

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I. The great potential of green urbanization and the outstanding problems facing it

In 2016, China's urbanization level reached 57.4% (NBS, 2017). According to the experience of industrialized countries, it is estimated that by 2035, about 72% of China's population will live in cities and towns; in 2050, this proportion will rise to around 80%. This means that by 2050, China's urbanization will have a rising space of more than 20 percentage points. The newly added urban population will be about 300 million people, roughly equivalent to the current population size of the United States.

However, China's urbanization is faced with various severe challenges, manifested in various aspects such as environment, culture, society and governance. The fundamental reason behind lies in the fact that the existing urbanization model is largely a product of the traditional industrial era and has not adapted to the needs of the new era of digital green development. In the traditional industrial era, material wealth production is the core, and the corresponding urbanization model, including development content, economic geography spatial layout, infrastructure, transportation and logistics system, business and organizational model, institutions and policies, is substantially different from that in the digital green era. The new requirements are very different. With the advent of the digital age and green era, the pattern and path of future urbanization will also undergo great changes, and its implications for the environment and regional economic development will be very different.

Green urbanization is a comprehensive and profound transformation that has never been seen in human history. It is a new thing for both developed and developing countries, and there is no ready-made experience to draw on. Therefore, promoting green urbanization requires innovation and exploration in particular. This kind of innovation is not only the technological innovation that people usually discuss, but also the innovation in terms of the way of thinking, theories, development content and mode, organizational model, business model, institutional mechanism and policies.

According to our preliminary research, China's green urbanization has huge opportunities, but to make opportunities become reality, we need to overcome a lot of difficulties and challenges, mainly include:

First, the understanding of green urbanization is more at the level of green technology and urban planning and design, and lacks a deeper understanding of the intrinsic relationship between green urbanization and economic development, urban-rural relations, urbanization and regional coordinated development.

Second, there are obstacles to the free flow of urban and rural factors, making urban and rural development relatively isolated, especially in terms of labor and land.

Third, a large number of new green technologies face many institutional obstacles in the process of landing. Some of these are due to the existing institutional obstacles. For example, the promotion of energy-efficient buildings involves reforms in the heating system and the fees system. Other new technologies may need the creation of new conditions. For example, the promotion of high-efficiency air-conditioning energy-saving technologies requires new energy efficiency standards, and the promotion of energy performance management systems requires innovation in the financial system.

Fourth, a large number of low-cost green appropriate technologies are not fully valued.

II. Some preliminary recommendations

1. There must be a breakthrough in understanding. First, we must fully realize the impact of the current digital age and green development concept on the urbanization model, and we can no longer use the traditional way of thinking in green urbanization planning. Second, green urbanization is not just a narrow issue of buildings, planning and green technologies, but an issue of development content and mode. Third, the layout and planning of the city should give full play to the decisive role of the market and better play the role of the government.

2. We should forcefully promote the free flow of urban and rural factors, and consider the impact of urban planning on the countryside. Cities and villages are two sides of one problem. When formulating green urbanization plans and related policies, we must take into account the urban and rural overall planning and fully consider its impact on the rural economy, ecology, society and culture. At the same time, we should encourage urban talents to move to the countryside, and orderly and conditionally release the right to lease and use rural residential land to urban residents.

3. We should address the institutional barriers to the promotion of emerging green technologies. The biggest obstacle to green urbanization is not the lack of good green technologies, but the difficulty of landing and promotion of a large number of cost-effective and technologically feasible green technologies.

4. We should attach great importance to the promotion of a large number of low-cost green appropriate technologies. Technological innovation is not just about high-tech, but a large number of low-cost green technologies, like constructed wetland sewage treatment systems and passive buildings, can also play a huge role.

5. We should select some green technologies with great potential and low difficulty as a breakthrough to solve various obstacles in the process of promotion. Energy saving in room air conditioners is a possible breakthrough. At present, China's annual output of room air conditioners (RACs) accounts for 70% of the world, and it is technically feasible and economically reasonable to improve the energy efficiency of room air conditioners by 200-300%. However, due to the lack of new energy efficiency standards, this huge energy saving potential is difficult to be achieved.