

Evolution of the Green Development Concept and the Path to Green Development



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1 Introduction

China's rapid economic development since the launch of the reform and opening up has come with huge consumption and inefficient use of energy and resources, resulting in serious ecological damages and environmental degradation that has hindered economic development and had a negative impact on people's life. The traditional model of development contributed significantly to material progress, but it also caused serious damage to the environment. Green development is a different model of development, representing a revolution in the understanding of development and a fundamental solution to environmental and resource issues. Unlike the traditional way of production and consumption featuring massive manufacturing, consumption and emissions, green development pursues coordination between resources, production and consumption, so as to achieve economic and social development while protecting the environment and achieve harmony between man and nature. In pursuit of green development, we need to adjust the economic and energy structures, improve our land development plan, adjust the industrial distribution across regions, promote the development of the environmental protection industry and circular economy to build a high-quality economy. In addition, green development encourages simple, moderate, green, and low-carbon ways of life, and opposes extravagance and excessive consumption.

The concept of green development in China covers a wider scope than in the West where it involves mainly industrialization. It is a new concept of development advocating environmental-friendly, circular and low-carbon development and seeking sustainable development and prosperity of an ecological civilization. Five-year plans for economic and social development are major documents that embody

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China's understanding of development and best illustrate how green development evolved in China from ideas to actions. One of the strengths of China's political system as a socialist country is that long-term development plans at the national level continues well with coherence. For implementation of the green development strategy, relentless efforts are required to change the way of economic development and people's way of life. China is at an advantage thanks to the continuity in its development plans, which ensures that the green development strategy will be continuously followed over a long period of time. However, top-level strategies alone are by no means enough for green development. In addition to national plans, it also requires concerted efforts from authorities at provincial, municipal and county levels, and a cohort of plans including national development plans, special plans, regional plans, and land development plans. With national development plans in an overarching position, the aforementioned plans designed by governments at all levels, each with specific functions, complement one another and constitute a coherent system. These plans facilitate the implementation of the green development strategy at various levels, thus contributing to the fulfillment of China's overarching goals. At a certain administrative level, special plans provide more details for the development plans in specific areas of work and must be consistent with national development plans and land development plans.

Green development is a central concept in the 13th Five-year plan. This article examines China's national and provincial development plans during the 11th, 12th and 13th five-year plan periods, and analyzes the evolution of the concept of green development from the perspectives of the guiding thought, basic principles, goals and targets, and content of the plans. Also analyzed are the implementation of the green development strategy and the path to green development at different levels of the Chinese government based on plans of JS province and CS city during the 13th Five-Year Plan period.

2 Evolution of the Concept of Green Development Through the 11th, 12th and 13th Five-Year Plans

Based on analysis of China's 11th, 12th and 13th five-year plans for economic and social development from the perspectives of guiding thoughts, development goals and major content, this article examines the evolution of the concept of green development and its policy implications with the belief that green development is embodied in development plans at different stages, and that the focus in the pursuit of green development has changed from resource utilization to resource-environment balance, and ultimately to overall improvement of the environment.

To achieve green development, it is a must to significantly enhance resource utilization efficiency and hold down consumption of resources. The 11th Five-Year Plan set binding targets for resources and environment for the first time. Among the 22 targets for national economic and social development, seven are related to resources

and environment, accounting for 31.8% of the total, including water resources (for industrial and agricultural use), energy, land (mainly farmland), forests, etc. It also raised requirements for the reduction of the discharges of major pollutants and encouraged reuse of solid wastes. The targets are mainly about enhancing efficiency, such as reducing water consumption per unit of industrial value-added and raising the efficiency coefficient of irrigation. The plan aimed to build a resource-conserving and environmentally friendly society by promoting circular economy, protecting and restoring the environment, intensifying environmental protection, tightening management of resources, making proper use of ocean and climate resources and taking other measures. Though the 11th Five-Year Plan did not use the wording “green development,” it still highlighted the importance of resource conservation and environmental protection in promoting growth model transformation, industrial restructuring and upgrading, and higher-quality development. The seven targets were all met in 2010, and six were exceeded. The targets related to resources and the environment were binding, curbing the emissions of major pollutants, reversing the trend of environmental degradation, and contributing to China’s efforts to upgrade its industrial structure and transform the growth model. “Green development” was first mentioned and elaborated in Part VI of the 12th Five-Year Plan for National Economic and Social Development, “Pursue Green Development: Develop a Resource-Conserving and Environmentally Friendly Society.” The said plan includes “achieving significant results in resource conservation and environmental protection” as a major goal, aiming to improve the incentive and constraint mechanisms for energy conservation and emissions reduction. It set eight targets related to resources and the environment. To achieve green development, the 12th Five-Year Plan proposed to actively respond to global climate change, strengthen resource conservation and management, vigorously develop circular economy, enhance environmental protection, promote ecological protection and remediation, and accelerate the development of systems for water conservancy and disaster prevention and mitigation. All of the eight targets were met in 2015. In particular, the discharge of major pollutants dropped significantly, the installed capacity of clean-energy power generation saw significant growth, and coal consumption and CO₂ emissions started to decrease. China’s economic growth was decoupled from pollutant emissions, creating a favorable condition for further improvement of the environment. The 13th Five-Year Plan for National Economic and Social Development followed the country’s overall deployment for economic, political, cultural, social, and ecological progress and the new concept of development. While the 11th and 12th five-year plans focused on building a resource-conserving and environmentally friendly society, the 13th Five-Year Plan aimed to achieve overall improvement in the quality of the environment and ecosystems by accelerating functional zoning, promoting economical and intensive use of resources, strengthening comprehensive environmental governance, intensifying ecological conservation and restoration, actively responding to global climate change, improving mechanisms for ensuring ecological security, and developing green and environmentally friendly industries. It contained 10 targets related to resources and the environment, including those for air quality and surface water

quality, which were included for the first time, marking a strategic adjustment to the priorities in China's environmental protection efforts.

The 11th, 12th and 13th five-year plans respectively included 7, 12 (in 8 categories) and 16 (in 10 categories) targets related to resources and the environment, accounting for 31.8%, 33.3% (42.9% in terms of the numbers of targets) and 40% (48. % in terms of the number of targets) of the total. The concept of green development and the targets related to resources and the environment gained importance and preponderance. These targets can be divided into three types: targets of resources and energy, targets of pollution control, and targets of ecological security. Resources and energy targets mainly involved the consumption of resources and energy in production, pollution control targets were about emission reduction and environmental quality, and ecological security targets were mainly about farmland and forests.

Examining these targets, we note that from the 11th to the 13th five-year plan, the concept of green development evolved, showing mainly the following changes:

First, the focus of environmental efforts shifted from monitoring intensity or efficiency to controlling both intensity and total consumption. The 11th Five-Year Plan included, for the first time, a target for energy consumption intensity per unit of GDP as a binding target, requiring it to be down by 20% from the level of 2005. The 12th Five-Year Plan set the target of decreasing energy consumption per unit of GDP by 16% from the level of 2010, and aimed to keep the total energy consumption within reasonable limits, showing that China is attaching importance to the control of both energy consumption intensity and total energy consumption. Based on achievements made in the 11th and 12th Five-Year Plan periods, progresses were significant in energy conservation. As China's GDP increased from RMB 18.2 trillion in 2005 to RMB 67.7 trillion in 2015, up 14.04% annually, its total energy consumption increased from 2.22 billion tons of standard coal equivalent in 2005 to 4.3 billion tons of standard coal equivalent in 2015, up only 6.83% annually, much lower than that the GDP growth. According to the 13th Five-Year Plan, China will decrease its energy consumption per unit of GDP by 15% by 2020, and will impose limits on total energy consumption, consumption intensity, water resource consumption, and land use for construction purposes. This means that China continued with the practice of controlling both total resource consumption and the consumption intensity in the management of water resources, land for construction and other resources. Imposing limits on both total consumption and consumption intensity is a natural consequence of the development of China's policies for conservation and efficient use of resources. It is vital to addressing the environmental and resource challenges that China is facing. Such measures embody China's determination to control pollution with continuous efforts and improve the environment, which will create a huge market for the energy conservation and environmental protection industries.

Second, China sought to improve environmental quality while controlling the total consumption of energy and resources. For the first time, the 13th Five-Year Plan included targets for air quality and surface water quality, specifically targets of the proportion of days with good air quality in cities at and above the prefecture level, decrease in PM 2.5 concentration in cities with poor air quality at and above prefecture level, proportion of surface water quality at or above Grade III, and proportion of

surface water rated below Grade V in quality. This change reflects a shift of focus in environmental protection from quantity to quality. It is imperative to properly handle the relationship between quantity and quality in environmental protection. Setting limits on quantity is a major way to improve the environment. As pollutant emissions from various sources have direct or indirect impact on the environment, emissions reduction, though not the only way to improve the environment, contributes significantly to environmental quality improvement. The 13th Five-Year Plan included targets for total emissions of sulfur dioxide, nitrogen oxides, ammonia and nitrogen, and chemical oxygen demand which shall be achieved by putting in place relevant facilities and phasing out outdated capacity at pollution sources in major industries. Meanwhile, emissions reduction shall be achieved without compromising development quality. Emissions reduction is a fundamental and compulsory requirement, while environmental quality improvement is a red line that must not be crossed.¹

Third, the binding effect of green development targets grew. In the 11th Five-Year Plan, five of the seven resource and environment-related targets were binding, in the 12th Five-Year Plan, seven out of eight such targets were binding, and in the 13th Five-Year Plan, all were binding. Binding targets, which are considered government commitment to society, have binding effect on governments at all levels, especially government performance related to public services, environmental protection and land use. It is evident that the plans for national economic and social development have had an increasingly binding effect in the environment and resource sectors. This significantly improved the constraint mechanism which ensured that governments at all levels would fulfill their environmental protection responsibilities, so that China on the whole can meet or even exceed the green development targets as scheduled.

3 Implementation of the Green Development Concept at Local Levels

Development plans for the 13th Five-Year Plan period of 29 provincial-level regions in China were gathered from the Internet and a brief look through them reviewed that 19 had targets related to resources and the environment, accounting for over 30% of the total. Most of them have specific requirements for environmental quality improvement, mostly the same or even higher than the national targets, including targets for the proportion of days with good air quality in cities at and above the prefecture level, decrease in PM 2.5 concentration in cities with poor air quality at and above the prefecture level, proportion of surface water quality at or above Grade III, and proportion of surface water below Grade V.

Nonetheless, we still found the following problems in their pursuit of green development. First, the binding force of green development targets needs to be strengthened. While local authorities have set most environment and resource-related targets as binding ones (Beijing and Jilin each has one anticipatory target related to resources

¹<http://politics.people.com.cn/n1/2016/0122/c1001-28075425.html>.

and the environment), the targets are not specific enough. For decrease in energy consumption per unit of GDP, CO₂ emissions reduction per unit of GDP, and major pollutants emissions reduction, only Hunan and Chongqing set specific targets, while all other provincial regions only required fulfilment of the national targets, showing that local authorities are hesitant and conservative about setting targets. Second, there is a lack of coordination between the national and provincial green development targets. Of the 12 regions with targets for the proportion of non-fossil fuel in primary energy consumption in their development plans, only seven aimed higher than the national target. Third, there is a lack of coordination and collaboration between different regions in the pursuit of green development. In designing development strategies and environmental protection measures, most provinces have only considered their own conditions, not paying due attention to coordination and collaboration with other provincial-level regions.

In the following section, we will further analyze the implementation of the green development strategy at the provincial and city levels based on the development plans of JS province and CS city in the province.

JS province strongly advocates green development. The guiding thought of its development plan is to fully implement the new concept of development and the strategy of sustainable development, and stick to green development to deliver a better life to the people, which is in line with the strategic significance of green development. The plan includes the same number of targets related to resources and the environment as in the national development plan, with slight differences in wording. As for the specific targets, five are the same with corresponding national ones, three are higher, and two are lower. In setting specific tasks, the province attaches great importance to improving environmental quality, and gives priority to air pollution, water pollution and soil pollution control. To achieve the targets, the province introduced measures to control the discharge of multiple pollutants and to coordinate between pollution control efforts of different provinces. The plan also proposed to strengthen the reform of the system for building an ecological civilization and improve the mechanisms for performance evaluation and accountability in this regard. JS, an economically developed province in China with high GDP and a high growth rate, contributed about 10% of the country's GDP each year during the 11th and 12th five-year plan periods. Over the past decade, however, JS had been seeing a greater proportion of the secondary industry than the national level in its overall economic structure, while that of the tertiary sector had been lower than the national level. The economic growth model driven by manufacturing is a major reason why the proportion of fossil fuel in JS's energy portfolio was significantly higher than the national level. To pursue green development amid rapid industrial growth, JS province faced arduous tasks to improve its energy portfolio, accelerate the development of non-fossil energy, promote industrial upgrading and improve its industrial structure.

The development plan of CS city for the 13th Five-Year Plan period follows the concept of green development, requiring implementation of the new concept of development in all aspects to seek economic, political, cultural, social, and ecological progress. The fundamental principle is to pursue green growth and implement the green development strategy. However, the significance of green development is

not fully reflected in the targets set. There are six targets related to resources and the environment, accounting for 18.2% of the total, lower than the level of JS's plan and the national plan. The plan includes targets for industrial water consumption, total consumption in production, improvement of air quality and surface water quality, pollutant emission reduction, and wetland conservation, the last of which is a special characteristic of CS city. Many environmental factors, such as farmland, forests and energy structure are left, and the targets, especially the targets for air quality, surface water quality, and major pollutant discharge reduction, are not specific enough. To achieve its targets, CS, with a strong economy, emphasized green development and made great efforts to transform and upgrade its economic structure by restructuring energy-intensive and highly polluting traditional industries, moving faster to phase out outdated capacity, pushing major industries towards the high end of the industry chain, improving technology, developing environmentally friendly emerging industries, and fostering new growth drivers. There is a gap between what CS said about green development in its development plan and what it actually did. Though green development is highlighted in the city's development plan for the 13th Five-Year Plan period as a guiding thought, a basic principle, a development strategy and an important goal of development, resource and environment-related targets make up only a small proportion of all the targets set, covering a limited scope and having inadequate binding force.

4 Conclusions and Recommendations

The concept of green development is proposed to address China's problems in resources, the environment and development in the new era. It is an innovative development model that is conducive to resource conservation, environmental protection and ecological improvement while taking into full consideration the carrying capacity of the environment and resource endowment. In China's pursuit of green development, development plans play a leading role. If China is to actually achieve its targets for green development, what is specified in the national plan must truly count at local levels, and this requires coordination between various policies and measures and collaboration between different levels of the government. Therefore, to continue its pursuit of green development in the 14th Five-Year Plan period, China is recommended to:

- (1) Strengthen macro control and guidance for local governments in regard to green development. In accordance with the overall requirement, the government needs to strengthen the macro control and differential constraints on provincial-level governments in the preparation of their own development plans to ensure that the national binding targets for resources, the environment and ecology can be met.
- (2) Develop a stronger sense of responsibility for green development in local governments, and stimulate their enthusiasm and creativity for this purpose.

Measures should be taken to help local governments develop a stronger sense of responsibility for the environmental quality within their jurisdictions. To implement specific tasks and measures for the achievement of the national targets of green development, local governments shall be encouraged to take the initiative to understand fully the requirements proposed by higher-level authorities in advance and allocate relevant tasks and targets accordingly. Local governments are advised to seek advice from higher-level environmental protection authorities before making their own development plans, so as to ensure the consistency between targets and tasks at various levels. Local governments at all levels should work to transform pressure for the solution of problems related to resources and the environment into motivations for green development and improvement of environmental quality.

- (3) Promote collaboration between different administrative areas for green development. In addition to local authorities' efforts for green development based on local conditions, it is also necessary to strengthen cooperation between regions, establish a long-term mechanism for inter-regional collaboration for pollution control, and conduct inter-regional cooperation in ecological remediation and environmental governance.
- (4) Let better developed regions spearhead green development efforts. Better developed regions should pioneer in the pursuit of green development to accumulate experience and serve as demonstrations for other regions.
- (5) Unleash the enthusiasm of local governments, especially basic-level governments, for green development in addition to making plans. In particular, we must make full use of people's wisdom and creativity and establish a long-term mechanism for market-driven green development.