

Practice Model of Xi Jinping Thought on Ecological Civilization

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Ecological development is essentially the process of building a resource-efficient, environment-friendly and ecologically-safe society, and of achieving modernization that features harmonious coexistence between man and nature. Xi Jinping Thought on Ecological Civilization offers answers to such theoretical and practical questions as why to build an ecological civilization, what the goal is and how to achieve it. Its practice model focuses on explaining the norms, content, paths and methods of building an ecological civilization. It is a structural and operable approach for implementing Xi Jinping Thought on Ecological Civilization and guiding the construction of ecological civilization. As an intermediate link between Xi Jinping Thought on Ecological Civilization and eco-civilization construction, the practice model is not only an indispensable part of the former, but also the key to combine the theory and practice concerning the two.

Keywords: Xi Jinping Thought on Ecological Civilization; practice model; construction of ecological civilization.

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1. Norms of Practicing Xi Jinping Thought on Ecological Civilization

The norms of practicing Xi Jinping Thought on Ecological Civilization refer to the general values, paths and principles in practicing Xi Jinping Thought on Ecological Civilization, representing the theoretical paradigm consisting of "one center", "one path", and "six principles".

1.1. Committing to the people-centered philosophy of development

In the report to the 19th National Congress of the Communist Party of China (CPC), General Secretary Xi Jinping put forward the vision on people-centered development,

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and answered such questions as who the development of socialism with Chinese characteristics is for, who to rely on, and who enjoys the benefits of development. As an important component of the five-sphere integrated plan for the development of socialism with Chinese characteristics, eco-civilization construction is surely imperative to commit to the people-centered philosophy of development. Xi Jinping Thought on Ecological Civilization emphasizes the people-centered philosophy, which is embodied in the following aspects:

- (i) Development is for the people. Differing from the nature-centrism or eco-centrism, Xi Jinping Thought on Ecological Civilization highlights that the fundamental purpose of people caring about and protecting nature is to meet the needs of the people. The report to the 18th CPC National Congress pointed out, “Promoting ecological progress is a long-term task of vital importance to the people’s well-being and China’s future. . . ., create a sound working and living environment for the people, and contribute our share to global ecological security.” Promoting the ecological progress is a concentrated expression of the Party’s commitment to putting people first, exercising power in the interests of the people, and safeguarding the fundamental interests of all the people. General Secretary Xi Jinping said, “There is no welfare more universally beneficial than a sound natural environment. In all things, we must act according to the will of the public. The environment is crucial to the well-being of the public, since blue skies and verdant surroundings allow us to feel the beauty and joy of life. Just as economic development is for the well-being of the people, so is environmental protection. In addition to creating more material and cultural wealth to meet people’s growing needs for a better life, we need also to provide more quality ecological goods to meet people’s growing demands for a beautiful environment. We must ensure that the environment benefits the people, stressing the resolution of prominent environmental problems that impact public health, accelerating the improvement of environmental quality, and providing more high-quality ecological goods as we strive to achieve social equity and justice and consistently meet the people’s growing needs for a beautiful environment (Xi, 2019a).”
- (ii) Development depends on the people. General Secretary Xi Jinping pointed out during the deliberation session of the Guizhou Delegation at the Second Plenary Session of the 12th National People’s Congress in March 2014 that lucid waters and lush mountains are by no means in opposition to mountains of gold and silver, and the key lies in the people (Xinhuanet, 2014). Since developing an ecological civilization is a cause in which the entire public participates and has a stake, we must turn building a beautiful China a conscious act of the whole society. Every person is a protector, contributor, and beneficiary of the environment, rather than a bystander or critic that stays out of the cause. We must boost people’s awareness of conserving resources and protecting the environment and ecosystems, foster ecological ethics and codes of conduct, and launch a green campaign to encourage all members of society to take actions to reduce energy resource consumption and pollutant emissions, thus contributing to ecological and environmental protection (Xi, 2019a). Judging from the demand side, people’s desire for and ability to pay for increasingly scarce ecosystem

services are the fundamental driving force for environmental protection and ecological conservation. General Secretary Xi Jinping stated that the primary contradiction in Chinese society has transformed into that between imbalanced and inadequate development and the people's growing needs for a better life, and now the people's demands for a beautiful environment have already become an important aspect of this challenge, with the public eagerly awaiting faster improvements in environmental quality (Xi, 2019a). From the view of the supply side, the level of ecological civilization is determined by the natural capital, man-made capital, and human capital, among which people are the active factor, so the accumulation of human capital is the fundamental driving force for environmental protection and ecological conservation.

- (iii) The fruits of development are shared by the people. The thoughts and actions about ecological or environmental equity were first produced in the modern civil rights movement and modern environmental movement that began in the United States in the 1950s, from which two different trends of thought have emerged since the beginning of the 21st century. The first is the concept of environmental equity or environmental justice, emphasizing the equal relationship between people in the use and protection of environmental resources; the second is ecological justice or green justice. In 2004, American scholars put forward a concept of ecological equity, emphasizing that the principle of equity should apply to not only human being but also other species. The first trend ignores the rights of people and other creatures in the biological chain to subsist and develop, while the second trend treats all creatures equally but ignores the fundamental purpose of protecting nature for humans. Compared to the above-mentioned, Xi Jinping Thought on Ecological Civilization centers on the people and emphasizes the protection of nature, and its purpose is to make the people lead a better life. General Secretary Xi Jinping pointed out, "Lush mountains, green fields, singing birds and blossoming flowers offer more than beauty to the eye. They are the basis for future development. . . . We must maintain the overall balance of the Earth's ecosystem, so that our children and children's children will not only have material wealth but also enjoy starry skies, green mountains and sweet flowers (Xi, 2019b)." This means that pursuant to Xi Jinping Thought on Ecological Civilization, ecological and environmental justice takes root in the equality of people in using the environment and protecting the ecology, that is, ecosystem services should be shared by people. Therefore, General Secretary Xi Jinping stressed that "a good ecological environment is the fairest public product and the most accessible welfare for the people (People's Daily, 2013a)." The National "12th Five-Year Plan" for Environmental Protection also incorporated the content and goal of achieving equal basic public services in terms of environmental protection for the first time.

1.2. Adhering to the development path featuring increased production, higher living standards and healthy ecosystems

The industrial civilization that began in the middle of the 18th century has pioneered the ages of steam engines, electricity, and information, and is creating an age of intelligence.

It has brought about tremendous progress in human society and helped humans become the dominant force in the change of the earth's ecological system, making the earth transiting from the Holocene to the Anthropocene.¹ The Anthropocene is both a challenge and an opportunity for mankind. On the one hand, humanity's subsistence and development are threatened by ecological destruction. On the other hand, humans, as regulators, can purposefully use their own power to adjust the relationship between organisms and the environment through a reasonable ecological structure and efficient functions, enabling material circulation and energy conversion to create a beautiful earth. Besides bringing about great progress in human civilization, traditional industrial civilization has also led to a serious ecological crisis, of which the root cause lies in its one-sided emphasis on production development and prosperity, while ignoring the need to foster healthy ecosystems. To cope with the ecological crisis and create a beautiful earth, it is certainly necessary to seize the opportunity, shift to the path of sustainable development, and give due weight to healthy ecosystems. However, it is obviously impossible and impracticable to ignore the need to increase production and raise living standards out of that consideration. The correct choice is to ensure not only the increased production and higher living standards, but also the healthy ecosystems, and integrate both of them into a unified process of sustainable development. The practice under Xi Jinping Thought on Ecological Civilization conforms to this process of natural history, and makes it possible to "stay on the path of sustainable development featuring advanced production, higher living standards and healthy ecosystems."

As a right choice for pursuing the model of sustainable development that aims to build a beautiful earth and a beautiful China, the development path featuring increased production, higher living standards and healthy ecosystems reflects the objective law of "the rise or fall of a civilization is closely tied to its relationship with nature". On the one hand, living in and developing along with ecosystems, people are the product of Mother Nature. For example, people are consumers in an ecosystem, subsisting on the organic matter (food) and oxygen provided by the producers (i.e. green plants that perform photosynthesis and provide organic matter and oxygen to themselves, consumers, and decomposers) in the ecosystem. Without them, people will not be able to subsist and develop. On the other hand, people collaborate in production by forming certain social connections or relations to realize the interchange of matter between man and nature and of labor between people, thus jointly creating, inheriting and spreading a civilization. Without the subsistence and development of people as the creator, inheritor, and spreader of a civilization, there would be no birth and evolution of the civilization. Therefore, the development of human civilization

¹ "Anthropocene" is a concept of geological age, emphasizing that the earth has entered a new geological age dominated by humans. It was put forward by the Nobel Prize winner in chemistry Paul Jozef Crutzen. In 2009, the International Commission on Stratigraphy established an Anthropocene Working Group (AWG) to investigate whether changes caused by human activities meet the criteria for officially opening a new geological era. The 35th International Geological Congress (IGC) held in South Africa in 2016 approved by informal voting that the earth has entered the Anthropocene. According to the well-known scientific journal *Nature*, on May 21, 2019, the AWG proposed that the earth has entered a new epoch, the Anthropocene, in the mid-20th century based on the radioactive material left by explosion of the first atomic bomb, and planned to submit a formal proposal to the International Commission on Stratigraphy in 2021.

is a history of the relationship between man and nature. The changes in natural ecosystems determine the rise or fall of human civilization. With this in mind and in response to ecological crisis, President Xi Jinping stated in the report to the 19th CPC National Congress, “we must pursue a model of sustainable development featuring increased production, higher living standards, and healthy ecosystems. We must continue the Beautiful China initiative to create good working and living environments for our people and play our part in ensuring global ecological security.”

1.3. Insisting on the “six basic principles”

In the important article entitled “Pushing China’s Development of an Ecological Civilization to a New Stage,” General Secretary Xi Jinping came up with the six principles that must be upheld in promoting ecological progress, which thoroughly reveal the core of Xi Jinping Thought on Ecological Civilization and must be implemented during ecological conservation.

First, man and nature should coexist in harmony. This is the fundamental, core, and first principle for implementing Xi Jinping Thought on Ecological Civilization and guiding the building of an ecological civilization. It is also one of the 14 points established by the 19th CPC National Congress to form the basic policy that underpins Chinese people’s endeavors to uphold and develop socialism with Chinese characteristics. General Secretary Xi Jinping pointed out that “humanity relies on nature, and the relationship between the two is one of symbiosis (Xi, 2016b).” The concept of “symbiosis” is derived from biology and can be interpreted in narrow and broad senses. In a narrow sense, “symbiosis” is a mutually beneficial relationship formed between two different organisms in close contact. In a broad sense, “symbiosis” refers to a relationship between different species that have frequent and close contact, including the symbiosis in which both species are highly dependent and exert no adverse effects on each other; the commensalism in which one species benefits while the other stays unaffected; the mutualism in which both species are bound to benefit; and the parasitism in which one species benefits while the other suffers damage, as well as amensalism and mutual harm. The first three can be collectively referred to as harmonious symbiosis, while the last three are of disharmonious symbiosis. Man and nature form a community of life. The interaction between the two through the cycle of matter, energy, and value may be a harmonious or disharmonious symbiosis. As the World Scientists’ Warning to Humanity once stated, “human beings and the natural world are on a collision course. Human activities inflict harsh and often irreversible damage on the environment and on critical resources. If not checked, many of our current practices put at serious risk the future that we wish for human society and the plant and animal kingdoms, and may so alter the living world that it will be unable to sustain life in the manner that we know.” (Kendall, 2000). To harmonize the relationship between man and nature and make the community of life for man and nature sustainable, human beings must use their own power to promote the benign interaction and harmonious coexistence, and stop the vicious interaction and disharmonious symbiosis between the two. Therefore, in building an ecological civilization, it is required to be committed to the harmony between man and nature.

Second, lucid waters and lush mountains are invaluable assets. The harmony between man and nature is essentially to ensure the benign interaction between satisfying human needs and protecting nature, that is, the harmony between development and protection, rather than benefiting one at the expense of the other. Therefore, since the United Nations issued *Our Common Future* in 1987, especially after the United Nations Conference on Environment and Development in 1992, the international community has emphasized the need to adopt a holistic approach to development and protection. Under the condition that mankind assumes the main responsibility of ensuring the harmony between man and nature, mankind must protect nature so as to realize the benign interaction between man and nature. Why do humans protect nature? Xi Jinping Thought on Ecological Civilization affirms the equivalence of nature with wealth and holds that lucid waters and lush mountains are invaluable assets. By protecting nature, people are protecting productive forces and enhancing human well-being. This is the fundamental basis of the positive interaction between development and environmental protection. It is in this sense that the principle expounds the relationship between economic development and environmental protection, reveals that by protecting the environment people are protecting productive forces, and by improving the environment people are developing productive forces, thus pointing out a new path for achieving coordination between development and conservation. Therefore, the practice under Xi Jinping Thought on Ecological Civilization takes this principle as the core.

Why is nature the same as wealth? Why should natural environment be considered precious? To begin with, lucid waters and lush mountains are natural and ecological assets.² The useful things that they provide to humans are natural services or ecosystem services.³ According to the United Nations Millennium Ecosystem Assessment (MA),⁴ natural services include supply services (food, fresh water, fuel, fiber, genetic resources, biochemical agents), regulation services (climate regulation, hydrological regulation, disease control, water purification, pollination), cultural services (spiritual and religious value,

² Ecological value refers to the systematic functions that natural objects serve each other and the whole of nature. Its meaning mainly comprises three aspects: (i) Any biological individual on the earth not only serves the interests of its own survival in its struggles for life, but also creates the living conditions of other species and individuals. In this sense, any biological species and individual have a positive meaning (value) for the survival of other species and individuals. (ii) The existence of any species and its individuals on the earth play a role in maintaining the stability and balance of the entire ecosystem of the earth, which is another manifestation of ecological value. (iii) A stable and balanced natural system on the whole is a necessary condition for human existence (subsistence), so it is of environmental value for human subsistence. The report to the 18th CPC National Congress used the concept of ecological value, the first appearance in the Party's literature, marking the Party's sublimated views of nature.

³ Natural service, also known as ecosystem service, refers to the benefits that people obtain from nature (ecosystems). This concept and its research originated in the 1970s, and Westman proposed this concept earlier. Ecosystem service is currently one of the research hotspots in ecology, geography, and economics, but there has been no consistent definition of the concept so far.

⁴ The United Nations Millennium Ecosystem Assessment (MA) was called for by the United Nations former Secretary-General Kofi Annan and launched on June 5, 2001. It was an international cooperation project funded by relevant United Nations agencies and other international organizations and participated by about 1,360 experts from 95 countries. It lasted 4 years with a budget of 24 million US dollars and produced the reports of Millennium Ecosystem Assessment. The conclusions, predictions and recommendations of these reports are of great significance to future ecological protection.

homesick complex, cultural heritage, aesthetics, education, incentives, entertainment and ecotourism), and support services (soil formation, nutrient cycling, primary production, oxygen production, habitat provision), all of which provide essential benefits for human production and life. Second, lucid waters and lush mountains are social and economic assets. In the underdevelopment stage of human beings, the natural services provided by lucid waters and lush mountains were sufficient or surplus relative to human needs. Therefore, lucid waters and lush mountains together with their natural services, though have value in use, were generally not economic assets that is scarce relative to human needs, and did not involve the issue of effective use and protection. However, with human development, lucid waters and lush mountains together with their natural services have gradually become scarce. This scarcity means that not only lucid waters and lush mountains together with their natural services have become economic assets, but their effective use and protection have become an issue involving the subsistence and development of human society, and they have become man-made nature in the process of being effectively used and protected, and automatically turn into man-made social assets.

Third, a good ecological environment is the most accessible welfare for the people. The basic principle that a sound ecological environment is the fairest public good⁵ is in essence environmental equity and justice.

(i) This principle is an inherent requirement for promoting the construction of a people-centered ecological civilization. Humans and the ecological environment⁶ constitute a community of life, and the ecological environment is an indispensable provider of natural services for humans. For the subsistence, health and development of everyone, no matter what activities they engage in and when and where they live, the natural services provided by the ecological environment are indispensable. Therefore, to promote the building of a people-centered ecological civilization, it is necessary to uphold environmental equity and justice. (ii) This principle is an inevitable choice to solve the main contradiction in building an ecological civilization. With the evolution of the relationship between man and nature,

⁵ Generally speaking, according to whether consumption is competitive and exclusive, goods can be divided into four categories: (i) private goods that are both competitive and exclusive; (ii) pure public goods that are neither competitive nor exclusive; (iii) quasi-public goods that are not competitive but exclusive; (iv) public resources that are competitive but not exclusive. The public goods refer to pure public goods in a narrow sense, comprise pure public goods and quasi-public goods in a neutral sense, and include pure public goods, quasi-public goods, and public resources in a broad sense. The various natural services provided by the natural environment do not necessarily belong to the same type of goods. Regulation services and support services are basically pure public goods, while supply services and cultural services are basically public resources (Shi, 2020). Therefore, in the phrase “a good ecological environment is the fairest public product,” the public goods are referred to in a broad sense.

⁶ First, the “ecological environment” was first introduced to China as a scientific and technological term in the early 1980s, but there are different understandings of it so far, among which the representative point of view is that the natural environment is same as the environment. According to Article 2 of the Environmental Protection Law of the People’s Republic of China revised in 2014, the environment “refers to the total body of all natural elements and artificially transformed natural elements affecting human existence and development”; second, the ecological environment, i.e. ecosystems and the environment, among which ecosystems represent the relationship between organisms and between organisms and their environment; third, the ecological environment is identical to the environment that is suitable for humanity’s subsistence and development. This term used here is referred to in the first sense.

the contradiction between the people's ever-growing needs for a beautiful environment and the unbalanced and inadequate development of high-quality ecological goods has become a major issue in the building of an ecological civilization. To address this contradiction, ecosystem services must be included in the goal of providing equitable access to basic public services, and more high-quality ecological goods must be provided equally to all people. Therefore, General Secretary Xi Jinping requested to accelerate the improvement of environmental quality, and provide more high-quality ecological goods as we strive to achieve social equity and justice and consistently meet the people's growing needs for a beautiful environment (Xi, 2019a). (iii) This principle is the only way to solve environmental problems. Breaking away from the man-man relationship, it is impossible to cope with the ecological crisis of the Anthropocene. The environmental equity and justice is a basic moral principle and norm that regulates the relationship of rights, obligations and interests between people in the development, utilization and protection of natural services. It embodies the interactivity of contradictions between people, and between man and nature, requiring people to comply with the principle of equal rights and obligations toward the ecological environment, equity in possession and use of natural services, and distribution of responsibilities and obligations to protecting the ecological environment, in order to achieve the harmony between man and nature. However, due to historical reasons, the inequality of rights and obligations toward the ecological environment in real life is prominent, which is the root cause of environmental problems. It means that the solution to environmental problems must conform to the requirements of environmental equity and justice, straighten out the relationship of rights, obligations and interests between people regarding the ecological environment, and address the inequality of rights and obligations toward the ecological environment in real life, ensuring people's equal access to benefits in the development, utilization and protection of natural services. Therefore, the only way to address environmental problems is to take environmental equity and justice as the basic principle, and adhere to the basic principle that a sound ecological environment is the fairest public good and the most accessible welfare for the people.

Fourth, the mountains, rivers, forests, farmlands, lakes and grasslands are a life community. It is in line with the principle of systematic governance of ecological environment, which is the inherent requirement of scientific governance. As the material basis for humanity's subsistence and development, the ecological environment is a whole composed of atmosphere, hydrological resources, landforms, animals, plants, microorganisms, and soil. These internal elements are not brought together mechanically or accidentally in time and space. They form a natural system through the interaction and interplay among matter, energy, and information flow. This is an objective law that does not depend on human will. Therefore, General Secretary Xi Jinping stated that it is necessary to recognize, respect and comply with this objective law, and revealed this law by proposing that mountains, rivers, forests, farmlands, lakes and grasslands are a life community. Just as humans need the fields for food, the fields need the rivers, the rivers need the mountains, the mountains need the soils, and the soils need the forests and grasslands (Xi, 2013).” He emphasized the need to seek out a new path for environmental governance by treating it as a systematic project

and looking at it from an overall perspective. “Rather than continuing to treat superficial symptoms through stopgap measures with government departments each looking out for their own immediate problems while holding each other back, we must make plans that take all factors into consideration and simultaneously implement multiple comprehensive measures to ensure that our efforts to build an ecological civilization permeate all fields, regions, and processes.” “We must take all of the ways that we impact nature into account from a broad and long-term perspective, and avoid being penny-wise and pound-foolish, biting off more than we can chew or emphasizing one thing while neglecting another, for this would ultimately cause long-term environmental damage on a system-wide scale (Xi, 2019a).” However, it has been commonly seen in real life that problems are being viewed and considered in an isolated, one-sided, and temporary way, rather than in an associated, systematic and comprehensive way. Therefore, according to Xi Jinping Thought on Ecological Civilization, eco-civilization construction should hold a basic principle that mountains, rivers, forests, farmlands, lakes and grasslands are a life community, so as to achieve systemic governance of the ecological environment with all elements, regions, and processes.

Fifth, the strictest regulations and laws must be applied in protecting the environment. This principle emphasizes that the protection of the ecological environment must rely on the regulations and laws, with the utmost conscientious mastery of the standards for formulating and implementing the regulations and systems, and monitoring their implementation. The rigidity and authority of the regulations and systems must be firmly established, and no alternative, adjustment or compromise shall be allowed. Accountability must be ensured, no matter the person, place, or time frame being investigated. We must persist in getting to the bottom of these issues, and never let our institutions and regulations become “toothless tigers”, and deviate from the basic principle of harmony between man and nature. As the largest public good, the ecological environment, on the one hand, will bring about a “free rider” phenomenon due to its non-competitive and non-exclusive nature as a pure public good, making the supply of natural services insufficient; on the other hand, the competitiveness and non-exclusiveness of the ecological environment as public resources will lead to its over-utilization, resulting in resource depletion, environmental pollution, and ecological degradation. The Third Plenary Session of the 18th CPC Central Committee clearly stated that “in order to promote ecological progress, we must establish complete and integrated institutions and systems, implement the strictest source protection system, damage compensation system and accountability system. We will also improve environment treatment and ecological restoration systems, and use set rules to protect the ecological environment (People’s Daily, 2013b).” “When those who uphold the law are strong, the state is strong; when they are weak, the state is weak. Institutions depend on concrete enforcement and rigorous oversight.” (Xi, 2019a) However, most of China’s prominent problems in environmental protection are related to inadequate systems, lax regulations, imperfect laws, lacking enforcement, and ineffectual punishment. To protect the material basis on which mankind depends for subsistence and development, it is requested to accelerate innovation of regulations, ensure that regulations offer more and have adequate peripheral support, rigorously enforce regulations, and turn regulations into rigid and inviolable constraints. For this purpose, the principle should be a basic principle

for building an ecological civilization. It is necessary to use regulations to check the use of power, protect blue skies and increase green coverage, and ensure accountability, thus guaranteeing that the CPC Central Committee's decisions and arrangements on building an ecological civilization are firmly implemented and produce real results.

Sixth, joint efforts must be made in building a global ecological civilization. There are many reasons for proposing this basic principle. First of all, as General Secretary Xi Jinping pointed out, "planet Earth is the only home for mankind," the building of an ecological civilization is vital to the future of mankind, and "a beautiful homeland is the shared aspiration of mankind (Xi, 2019b)." Second, the earth's ecological environment is indivisible. It cannot be subdivided infinitely according to national boundaries, thus environmental protection is characterized as a cross-border operation. Besides, there are certain thresholds for protecting the earth's ecological environment. For example, according to the *Paris Agreement* signed in 2016, in order to prevent the global ecological environment crisis, mankind must limit the global temperature rise to well below 2.0°C, or even below 1.5°C, above pre-industrial levels. Obviously, this is not what any single country or regional group can achieve even if it does its best. Therefore, the whole world must work together to protect the global ecological environment. No country can ignore these issues, and no country will fare well by going it alone. Third, common but differentiated responsibilities have become an important principle of international environmental law. The first thing to emphasize is the commonality of responsibilities. Any country, whether it is large or small, located in northern or southern hemisphere, or has whatever geographical environments, should be obliged to protect the global environment, participate in the global environmental protection, and assume obligations in protecting and improving the environment. Constant efforts should be steadfastly made to implement the building of a global ecological civilization. Finally, "China is ready to work with all other countries to build a better homeland and a community with a shared future for mankind (Xi, 2019b)." Although China is still a developing country, due to its huge population and economic scale, it has become an increasingly prominent participant, contributor, and leader in the movement to build a global ecological civilization. By being deeply involved in global environmental governance, it is possible for China to build its voice and influence in global environmental governance system, guide the transformation of the international order, and form solutions for environmental protection and sustainable development around the world, seeing that the principles and practices of ecological civilization benefit the peoples of all countries.

2. Layout of Practicing Xi Jinping Thought on Ecological Civilization

The community of life for man and nature is formed and developed by the continuous interaction and inter-coupling between man and nature. The scientific research on the modern coupled human and natural systems (CHANS) shows that man and nature are coupled in organization, space and time, and their interactions range from direct to indirect, from neighboring to remote, from local to global, and from simple to complex. It means that to realize the harmony between man and nature, we must manage the community of

life for man and nature in all respects. General Secretary Xi Jinping combined the Marxist philosophy of the relationship between man and nature with the progress in scientific research on modern CHANS. Based on the overall strategy of pursuing national rejuvenation in a world that is undergoing momentous changes of a kind not seen in a century, he formed a three-dimensional layout of practice under the thought on ecological civilization, involving all fields, regions, and processes, and comprising five systems and two patterns.

2.1. Building systems for an ecological civilization

From an all-round perspective, the community of life for man and nature is a system of coupling across different elements. In the sense of earth system science, it is the coupling between the atmosphere, hydrosphere, lithosphere, biosphere, and noosphere; in the sense of human society, it is the coupling between human politics, economy, society, culture, and ecological environment. Nature provides essential natural services for human survival and development. According to the United Nations Millennium Ecosystem Assessment (MA), natural services include supply services, regulation services, cultural services and support services. Through the cycle of matter, energy and value, these services permeate all human systems of politics, economy, society, culture, and ecological life, directly or indirectly influencing the welfare of human beings. It means that for the harmony between man and nature, it is necessary to coordinate the various systems of human society and build systems for an ecological civilization in an all-round way. Therefore, the 18th CPC National Congress proposed to incorporate the building of an ecological civilization into the *Five-sphere Integrated Plan* for building socialism with Chinese characteristics, i.e. integrating it into all aspects and the whole process of economic, political, cultural, and social advancement. On that basis, the 19th CPC National Congress put forward the scientific concept of common, all-round and coordinated development in every dimension of material, political, cultural-ethical, social, and eco-environmental progress. General Secretary Xi Jinping dialectically unified the theoretical logic and historic logic of building an ecological civilization in China, and clearly proposed to act quickly to establish the following ecologically focused systems: a cultural system in which environmental concepts and values are norms, an economic system aimed at integrating industries and ecosystems, a system of responsibilities and objectives centered on improving environmental quality, a system of institutions backed by modernized governance systems and capacity, and a safety system that emphasizes the maintenance of well-functioning ecosystems and the effective prevention and control of environmental risks. These five systems are rooted in China, reflect the wishes of the Chinese people, adapt to the requirements of development for the new era, and complement each other in forming a pattern of ecological development that is suited to the *Five-sphere Integrated Plan* for building socialism with Chinese characteristics. The cultural system is the superstructure; the economic system is the material basis; the system of responsibilities and objectives is the political responsibility; the system of institutions is the fundamental guarantee; and the safety system is the natural

foundation. Therefore, it is important to promote the five systems in a coordinated way in the building of an ecological civilization.

2.2. Forming a spatial pattern of ecological civilization

Undoubtedly, it is necessary to find a foothold for the systems of an ecological civilization. This foothold will have an overall, long-term, and fundamental effect on ecological civilization and decides its rise or fall. Therefore, the spatial pattern is a major theoretical and practical issue facing the building of an ecological civilization. Xi Jinping Thought on Ecological Civilization attaches great importance to the spatial pattern of eco-civilization construction. The 18th and 19th CPC National Congresses both clearly demanded the formation of a spatial pattern that is resource-efficient, environmental-friendly and ecologically secure.

In terms of forming such a spatial pattern, the layout of practicing Xi Jinping Thought on Ecological Civilization includes the following three aspects:

- (i) Considering a beautiful China and a beautiful planet as a whole. The earth is an organism capable of spatial interaction. As human activities cover an increasingly wider range and go global, this kind of spatial interaction has continuously expanded from the single circulation of matter and energy within nature to the double circulation of matter, energy, persons, and value between nature and society, making the coupling and symbiosis between man and nature spread from local to global, from short range to long range, and cross borders. Therefore, the practice under Xi Jinping Thought on Ecological Civilization upholds the principle of making joint efforts in building global ecological civilization, combines the law of coupling between man and natural space with the logic of the unity of opposites concerning national sovereignty, and emphasizes the need to coordinate the building of a beautiful China and a beautiful planet in ecological progress. This is manifested in two aspects. First of all, efforts have been made in both ideological understanding and practice to promote the building of a beautiful China. The Fifth Plenary Session of the 18th CPC National Congress incorporated the Beautiful China initiative into the five-year plan for national economic and social development for the first time. The 19th CPC National Congress proposed to develop China into a great modern socialist country that is prosperous, strong, democratic, culturally advanced, harmonious, and beautiful by the middle of the 21st century, elevating the Beautiful China initiative to the level of Chinese nation's great revival for the first time. Since the 18th CPC National Congress, under the leadership of the CPC Central Committee with General Secretary Xi Jinping at the core, the level of China's ecological civilization has gone through a historic turnaround with wide-ranging implications. Second, efforts have been made in both ideological understanding and practice to promote the building of a beautiful planet. General Secretary Xi Jinping pointed out that "planet Earth is the only home for mankind", "a beautiful homeland is the shared aspiration of mankind", and "China is ready to work with all other countries to build a better homeland and a community

with a shared future for mankind (Xi, 2019b)", calling on the people of all countries to "be good friends to the environment, cooperate to tackle climate change, and protect our planet for the sake of human survival," and "to build an open, inclusive, clean, and beautiful world that enjoys lasting peace, universal security, and common prosperity (Xi, 2017b)." He further stated at the general debate of the 75th Session of the United Nations General Assembly that humankind should launch a green revolution and make Mother Earth a better place for all (Xi, 2020). Since the 18th CPC National Congress, China has been committed to build a community with a shared future for mankind, actively responding to global climate change, protected global biodiversity, and fully and thoroughly implemented the United Nations *2030 Agenda for Sustainable Development*, undertaken international obligations that are consistent with its development stage, responsibilities and actual capabilities, established wide-ranging mechanisms for bilateral and multilateral cooperation and communication, strengthened South–South cooperation, and take vigorous actions to contribute to the building of global ecological civilization. China has become an increasingly important participant, contributor, and champion in the movement to build global ecological civilization (Ministry of Foreign Affairs of the PRC, 2020).

- (ii) Optimizing the layout of China's territorial space. China is a super large country with a vast territory, a long history, and a huge population, featuring rich spatial diversity, significant spatial differences, and strong spatial interaction. To build an ecological civilization within the country, it is necessary to combine the unity and diversity of territorial space, and form an effective pattern of territorial space, avoiding the use of a one-size-fits-all or atomistic approach. Therefore, the layout of territorial space for building an ecological civilization is an important part of practicing Xi Jinping Thought on Ecological Civilization. Since the 18th CPC National Congress, the CPC Central Committee has attached great importance to form a pattern of territorial space in ecological development. This is mainly shown in two aspects. The first is the efforts made to innovate the paradigm for territorial space layout. The China Functional Zoning Plan issued in June 2011 proposed to establish an efficient, coordinated and sustainable development pattern of territorial space. In 2017, the Outline of the National Territory Planning (2016–2030), the first territorial planning ever published in China, proposed to create a safe, harmonious, open, coordinated, competitive and sustainable pattern of territorial development. Despite the differences in the vision between the two documents, both of them focus on "development". This is not adapted to the requirements of building an ecological civilization. Since the 19th CPC National Congress, relevant departments of territorial space planning have discarded the paradigm that highlights "development", and proposed a new paradigm of sustainable development integrating politics, economy, society, culture, and ecosystems. Several Opinions of the Central Committee of the CPC and the State Council on Establishing the System of Territorial and Spatial Planning and Supervising its Implementation (hereinafter referred to as the "Opinions") stated that it is required to form a pattern of territorial space that is safe, harmonious, competitive and conducive to sustainable development, where space for production is used intensively and

efficiently, the living space is livable and proper in size, and the ecological space is unspoiled and beautiful. The second is the efforts made to reform the system for the development and protection of territorial space. In 2013, the Decision of the Central Committee of the Communist Party of China on Some Major Issues Concerning Comprehensively Deepening the Reform requested a reform in the system for the development and protection of territorial space. In 2015, the *Overall Plan to Reform the System for Developing an Eco-civilization* proposed to build a system for the development and protection of territorial space on the premise of a property rights system for territorial space resource assets, on the basis of territorial spatial planning, and with the use control of territorial space as the main approach. Afterwards, on the one hand, the territorial space use control system has been gradually improved with some official documents issued one after another, such as the Opinions of the Central Committee of the Communist Party of China and the State Council on Improving the Strategy and System of Major Functional Zones, the Guiding Opinions on Promoting the Overall Reform of the System of Natural Resource Property Rights and the Guiding Opinions on Establishing a System of Natural Reserves with National Parks as the Main Body; on the other hand, the Opinions has been issued to establish the five administrative levels, three planning types and four sub-systems⁷ for the operation of territorial space planning.

- (iii) Jointly building green “Belt and Road”. In the Anthropocene,⁸ human beings are the main force driving the dynamic changes of the earth system. The total land area, population, and GDP of Asia, Europe and Africa account for more than 56%, 70%, and 62% of the world’s total, respectively. They represent the world’s most important energy production bases and the fastest growing economies, thus they are the main spaces for optimizing the relationship between man and nature, building a beautiful home planet and a clean and beautiful world. China is located at the edge where the Asia–Europe continent and the Pacific Ocean meet each other, and enjoys the advantage of connecting Asia, Europe, and Africa via land and sea. In order to build a community with a shared future for mankind and a beautiful planet, since the 18th CPC National Congress, General Secretary Xi Jinping has proposed the Belt and Road Initiative (BRI) to build an all-round, multi-level, and complex interconnected

⁷ The “five administrative levels, three planning types and four sub-systems” means: according to administrative levels, the territorial spatial planning is classified into national, provincial (or municipality, autonomous region), city, county, and township levels; according to content, the territorial spatial planning is classified into overall planning, detailed planning and special planning; according to the nature of work, the territorial spatial planning is classified into preparation and approval, implementation and supervision, laws and regulations, and technical standards.

⁸ “Anthropocene” is a concept of geological age, emphasizing that the earth has entered a new geological age dominated by humans. It was put forward by the Nobel Prize winner in chemistry Paul Jozef Crutzen. In 2009, the International Commission on Stratigraphy established an Anthropocene Working Group (AWG) to investigate whether changes caused by human activities meet the criteria for officially opening a new geological era. The 35th International Geological Congress (IGC) held in South Africa in 2016 approved by informal voting that the earth has entered the Anthropocene. According to the well-known scientific journal *Nature*, on May 21, 2019, the AWG proposed that the earth has entered a new epoch, the Anthropocene, in the mid-20th century based on the radioactive material left by explosion of the first atomic bomb, and planned to submit a formal proposal to the International Commission on Stratigraphy in 2021.

network among Asia, Europe and Africa and the nearby oceans, thus achieving diversified, independent, balanced and sustainable development in the three continents. It is worth noting here that green development has always been the basic goal of the BRI (People's Daily, 2015a). In order to achieve this goal, China issued the Guidance on Promoting Green Belt and Road (Ministry of Ecology and Environment of the PRC, 2017), initiated the establishment of the International Coalition for Green Development on the Belt and Road with international partners (The Central People's Government of the PRC, 2019), built the Big Data Service Platform on Ecological and Environmental Protection, and implemented the Green Silk Road Envoy Program, which serves as a platform for the BRI cooperation on green development.

2.3. Forming a temporal pattern of ecological civilization

The life community of man and nature is coupled across time, and the time factor is an important aspect that cannot be ignored in the building of an ecological civilization. On the one hand, human beings and their networks and environments of any point in time are always the product of past development and also the starting point for the next step in development; on the other hand, expectations influence actions and actions change expectations. To build an ecological civilization, it is imperative to pay full attention to the role of time, and make an overall planning for coming generations, so as to achieve sustainable development that not only meets the needs of contemporary people, but does not harm the ability of future generations to meet their needs. Therefore, the practice model of Xi Jinping Thought on Ecological Civilization has an important feature, that is, conforming to the historical trend and people's aspirations, and giving play to the advantages of the socialist market economy system. By developing long-term strategic visions, and decomposing them into successive five-year strategic plans, and then further into 2- or 3-year action plans and annual plans, it is possible to link together the past, present and future of eco-civilization construction, and make concerted and unremitting efforts to hammer away until tasks are done, ensuring the path dependence and path creation of ecological progress. General Secretary Xi Jinping insisted on taking sustainable development as a national strategy, and pointed out that "what we are doing today to build an ecological civilization will benefit generations to come" and "building an ecological civilization is vital to sustain the Chinese nation's development" (Xi, 2017a) and it is important to stay independent and follow the path of sustainable development that suits China's own national conditions. He also stated that by 2035 there will be a fundamental improvement in environmental quality, and the goal of building a Beautiful China will be basically attained; and by the middle of the 21st century, environmentally friendly ways of living and developing will be fully formed, and the efforts to build a beautiful China will be successful (Xi, 2019a).

3. Practice Way of Xi Jinping Thought on Ecological Civilization

General Secretary Xi Jinping pointed out that "at their roots, environmental problems are problems with the ways in which we live and develop. In order to resolve them at the

fundamental level, we must implement principled development that is innovative, coordinated, green, open, and shared;” and “the objective of green development is to transform traditional wasteful models of production and consumption and make factors such as resources, production, and consumption match up and adapt to each other so that we may achieve coordination and integration between socio-economic development and environmental protection and ensure harmony between people and nature;” “fostering green modes of development is the key to resolving our pollution problems (Xi, 2019a).” Therefore, the practice under Xi Jinping Thought on Ecological Civilization pursues eco-friendly growth models.

3.1. The proposal of green development

Looking at home and abroad, although the concepts of “green economy” and “green development” can be traced back to the spaceship economy proposed by American economist Kenneth Ewart Boulding in 1966, they began to appear as clear terms in the late 1980s to the early 1990s. Besides, the term “green economy” has been used more intensively abroad, while the term “green development” more intensively in China. Economist David W. Pearce from University of London first proposed the term “green economy” in his monograph *Blueprint for a Green Economy* in 1989, but he did not clearly define “green economy”, and instead only used the term to explain the issue of environmental protection and improvement. Circular economy and low-carbon economy are two important forms of green economy. The circular economy is characterized by resource conservation and recycling. It originated from Boulding’s paper entitled “The Economics of the Coming Spaceship Earth”, and was first used in the book *Economics of Natural Resources and the Environment* by David W. Pearce and R. Kerry Turner in 1990, who established the first theoretical model of circular economy. Low-carbon economy is characterized by low energy consumption, low emissions, and low pollution. The concept is derived from *Our Energy Future — Creating a Low Carbon Economy* published by the UK government in 2003.

In the early 1990s, the term “green development” was translated and introduced to China. At the end of the 1990s, the concept of circular economy was introduced into China from Germany and Japan. In September 2007, Hu Jintao clearly advocated the development of a low-carbon economy at the APEC Leaders’ Meeting, and then the low-carbon economy began to receive attention in China. The circular economy and low-carbon economy have been given high priority by the CPC Central Committee and the State Council before green development, and have taken root and blossomed in China. In 2002, Jiang Zemin’s speech at the Assembly of the Global Environment Facility (GEF Assembly) pointed out that sustainable development can only be achieved by taking the path of circular economy based on the most effective use of resources and environmental protection (People’s Daily, 2002). Hu Jintao requested at the Forum of the Central Government on Population, Resources and Environment in 2004 and 2005 to actively develop circular economy and realize a virtuous circle of ecosystems and socio-economic system (Hu, 2004), and build a resource-conserving, environmentally friendly society (Hu, 2004).

In July 2005, the State Council of China promulgated the Several Opinions of the State Council on Accelerating the Development of a Circular Economy. In October 2005, the Fifth Plenary Session of the 16th CPC National Congress adopted the Recommendations of the Central Committee of the Communist Party of China for Formulating the 11th Five-Year Plan for National Economic and Social Development, requiring that efforts shall be made to promote clean production across the board, and develop a conservation-oriented growth model featuring low input, low consumption, low emissions and high efficiency; carry out pilot programs of circular economy, improve laws and regulations, and explore effective models for the development of circular economy; strengthen the consciousness of conservation, encourage the production and use of energy-saving and water-saving products, energy-saving and environmentally-friendly vehicles, develop energy-saving and land-conserving buildings, and form healthy, and resource-efficient consumption models. The 17th CPC National Congress further requested that “China will have a large-scale circular economy and considerably increase the proportion of renewable energy resources in total energy consumption.” In August 2008, the National People’s Congress of China promulgated the Circular Economy Promotion Law of the People’s Republic of China, stipulating that the development of circular economy is a major strategy for China’s economic and social development.” With the release of *China’s National Climate Change Program* and a white paper entitled *China’s Energy Conditions and Policies* as the mark, the low-carbon economy formally became a national strategy in 2007.

The concept of green development was officially adopted in 2010. In the same year, the Recommendations of the Central Committee of the Communist Party of China for Formulating the 12th Five-Year Plan for National Economic and Social Development adopted by the Fifth Plenary Session of the 17th CPC National Congress called for the efforts to establish the concept of green and low-carbon development, focus on energy conservation and emissions reduction, improve the incentive and restraint mechanisms, accelerate the construction of resource-efficient and environment-friendly modes of production and consumption, and enhance the capacity for sustainable development. The report to the 18th CPC National Congress put forward that China should “strive for green, circular and low-carbon development. We should preserve our geographical space and improve our industrial structure, way of production and way of life in the interest of conserving resources and protecting the environment. We should address the root cause of deterioration of the ecological environment so as to reverse this trend, create a sound working and living environment for the people, and contribute our share to global ecological security”. As a result, under the leadership of the CPC Central Committee with General Secretary Xi Jinping at the core, green development has become the basic way of practicing Xi Jinping Thought on Ecological Civilization, involving all fields, regions, and processes. First of all, the Opinions on Accelerating the Construction of Ecological Civilization approved by the CPC Central Committee in 2015 proposed the concept of eco-friendly or green development for the first time and put it in parallel with new industrialization, urbanization, application of information technology, and agricultural modernization, and clearly stated that green development should be the basic approach to promote ecological progress. In the same year, the Fifth Plenary Session of the 18th CPC National Congress first proposed a

new philosophy of innovative, coordinated, green, open, and shared development, elevating green development as one of the five notions constituting the new development philosophy. Since the 19th CPC National Congress, the new development philosophy has been written into the Constitution of the Communist Party of China and the Constitution of the People's Republic of China. Second, the 12th Five-Year Plan for Development of Circular Economy and Circular Development and Leading Action, which were successively released, clearly pointed out that circular development is a major strategy for China's economic and social development and an important way to build an ecological civilization and promote green development. Third, great attention has been paid to the development of a low-carbon economy. The Fifth Plenary Session of the 18th CPC National Congress emphasized the promotion of low-carbon development for the first time. General Secretary Xi Jinping pointed out at the general debate of the 75th Session of the United Nations General Assembly, "the Paris Agreement on climate change charts the course for the world to transition to green and low-carbon development. It outlines the minimum steps to be taken to protect the Earth, our shared homeland, and all countries must take decisive steps to honor this Agreement. China will scale up its Intended Nationally Determined Contributions by adopting more vigorous policies and measures. We aim to have CO₂ emissions peak before 2030 and achieve carbon neutrality before 2060."

3.2. Features of green development

As a way of practicing Xi Jinping Thought on Ecological Civilization, green development transcends the foreign concept of green economy and has the following basic features.

- (i) Built on the overall picture of new development philosophy. General Secretary Xi Jinping pointed out that development philosophy is the forerunner of development actions. It is the factor that determines the overall situation, the fundamentals, the direction, and the long-term effects. It is the epitome of development thinking, direction, and focus. If the development philosophy is right, it will be easier to set goals and tasks, and then the policies and measures (People's Daily, 2015b). The concept of green economy is relatively isolated, with one-sided emphasis on "green," and fails to clarify or highlight such notions as innovation, coordination, openness, and sharing, which will determine the overall situation, fundamentals, direction, and long-term effects of humanity's new development. In contrast, General Secretary Xi Jinping pointed out that "at their roots, environmental problems are problems with the ways in which we live and develop. In order to resolve them at the fundamental level, we must implement principled development that is innovative, coordinated, green, open, and shared" (Xi, 2019a).

As one of the new development notions, green development is a road based on the overall picture of the new development philosophy. It should be promoted in an associated and comprehensive manner, "alongside innovation, coordination, openness, and sharing, and is essential for achieving comprehensive transformation and establishing a modern and high-quality economic system (Xi, 2019a)." Green development

can ensure the harmony between man and nature and is the fundamental strategy that must be adhered to in pursuing innovative, coordinated, open and shared development, while innovation is the driving force of green development, and coordination, openness, and sharing reflect the inherent requirements of green development.

- (ii) Led by the “five pursuits”. With the socio-economic development and the deepening of theoretical understanding, the foreign concept of green economy has undergone several stages: the stage oriented toward environmental governance and economic policy, the stage oriented toward process of transition to green economy, then to the stage oriented toward the comprehensive development of ecosystems, economy and society. Accordingly, the definition of green economy has changed from an obscure term used to discuss environmental and economic policies, to a concept initially defined as an economy that values the relationship between man and nature and can create decent and high-paying jobs, and then to a concept clearly defined as an economy that can bring humans a sense of happiness and social justice, while significantly reduce environmental risks and improve the insufficient ecological development. The definition of green economy advocated by United Nations Environment Programme (UNEP) in 2010 is currently widely accepted across the world, emphasizing the comprehensive goals of economic efficiency, ecological harmony, and social inclusiveness. Differing from the concept of green economy, green modes of development emphasize not only ecological security, economic efficiency, and social harmony, but also political science and cultural development, which are the five pursuits of green development. (a) In terms of ecological security, they pursuit harmony between man and nature to maintain the overall balance of the earth’s ecosystems, so that future generations can not only enjoy rich material wealth, but also sound ecological environment with bright stars, green mountains, and fragrance of flowers; (b) In terms of economy, they pursuit green, prosperous, and sustainable socio-economic development; (c) In terms of culture, they pursuit love, reverence and respect for nature, embrace and protect nature, so that eco-friendly thinking becomes the mainstream culture in social life, and beautiful environment takes root in people’s hearts, forming profound humanistic feelings; (d) In terms of political science, they pursuit the spirit of scientific governance, following the law, drawing up research-based plans, adapting measures to local conditions, and adopting a holistic approach, highlighting both the spirit of racing against time and unremitting efforts; (e) In terms of social harmony, they pursuit joint efforts to tackle difficulties head-on and build a beautiful home.
- (iii) Putting ecological protection first. In the concept of green economy, although ecological, economic, and social goals coexist in general, the priority of the three is different according to the conditions and value orientations, and there is a high degree of uncertainty. As the environmental economist Serban Scricciu put it that the economy is organized in a way that suits the local and global ecological infrastructures and permanent driving forces. Lucid waters and lush mountains are invaluable assets. Moreover, “faced with the ecological challenges, all people are members of a community where they rise and fall together (Xi, 2019b).” Therefore, unlike the concept of green economy, in the face of such a contradiction as to whether

giving priority to the growth of man-made material and improvement of social welfare or to environmental protection, the practice under Xi Jinping Thought on Ecological Civilization puts ecological protection first and commits to green development according to local conditions. It holds that socio-economic development should not harm the ecological environment and human health, and aims to build a safety system that emphasizes the maintenance of well-functioning ecosystems and the effective prevention and control of environmental risks, in an attempt to ensure healthy and complete ecosystems, prevent ecological risks and enhance ecological resilience. General Secretary Xi Jinping pointed out that to promote high-quality economic development, it is required to abandon the old way of achieving economic development at the cost of the environment; as long as unremitting efforts are made to put ecological protection first and pursue green development, it will be surely possible to turn lucid waters and lush mountains into invaluable assets (People's Daily, 2020).

3.3. Driving forces of green development

From the document entitled "Opinions on Accelerating the Promotion of Ecological Progress" (Central Committee of the CPC and the State Council, 2015), it can be inferred that, unlike the traditional concept of green economy, the CPC Central Committee with General Secretary Xi Jinping at its core emphasizes the multiple driving forces of green development, including layout, structure, efficiency, quality, innovation, scale, and equity.

- (i) Layout: Green development is driven by optimizing the layout of China's territorial space. The CPC Central Committee with General Secretary Xi Jinping at the core emphasizes the need to optimize the layout of national territorial space. The main approaches include drawing redlines for protecting the ecosystems, designating permanent basic cropland and delineating boundaries for urban development, and drawing control boundaries for urban, agricultural and ecological spaces, so as to improve the structure of production, living and ecological spaces; eliminate space division and promote space convection; encouraging population and business to move from ecological and agricultural areas to urban areas, so as to shorten the distance for people to seek development opportunities, reduce the pressure on ecological and agricultural areas; adjusting population density to prevent the areas from being over or sparsely populated.
- (ii) Structure: Green development is achieved through economic restructuring. The essence of structure-driven green development is to make resources flow from the sectors with low resource utilization efficiency and high pollution emissions to those with high resource utilization efficiency and low pollution emissions. The main approaches include: optimizing the industrial structure by developing green industries, and the energy structure by developing clean energy and renewable energy. General Secretary Xi Jinping highlighted that, "We must foster growing industries that promote energy conservation and environmental protection, clean production, and clean energy, and develop efficient agricultural industries, advanced

manufacturing industries, and modern service industries. We must promote all-round conservation and recycling of resources, and ensure that the systems of production and everyday life overlap in their circular use of resources (Xi, 2019a)."

- (iii) Efficiency: Green development is driven by saving, efficiently using and recycling resources. The main approaches include: saving energy and reducing emissions, developing circular economy and low-carbon economy, saving and efficiently using resources, and reducing the intensity of resource consumption. As early as 2013, during the sixth group study session of the Political Bureau of the CPC Central Committee, General Secretary Xi Jinping emphasized that resource conservation is essential to protect the environment. China needs to conserve resources and use them efficiently, bring about a fundamental change in the way resources are utilized, increase whole-process conservation control, and drastically reduce the consumption of energy, water and land resources per unit of GDP. The country needs to vigorously develop a circular economy to reduce resource consumption and waste generation, and re-use and recycle waste in the process of production, distribution and consumption.
- (iv) Quality: Green development is driven by improving the quality of the ecological environment. Quality development emphasizes the improvement in the quality and stability of ecosystems and continuous improvement in the environmental quality. The main approaches include setting and strictly maintaining a system of responsibilities for improving the quality of the ecological environment. General Secretary Xi Jinping stressed that improving the quality of the ecological environment is essential to the system of responsibilities for meeting ecological development targets, and "we should make it the basic requirement that environmental quality must not worsen and may only get better (Xi, 2019a)."
- (v) Scale: The transition to green development is driven by controlling the total amounts, and drawing and sticking to the red lines for resources, environment and ecosystems. The total amounts under control include the total amounts of resources such as construction land, the cultivated land put to construction use, water consumption, and energy consumption, as well as the total amount of discharged pollutants. General Secretary Xi Jinping emphasized the control of total resources and total emissions, and presided over a meeting that adopted the *Overall Plan to Reform the System for Developing an Eco-civilization* to make institutional arrangements in this respect. Drawing and sticking to the redlines for the resources, environment and ecosystems refer to defining and enforcing strict controls including red lines for environmental protection, minimum standards for environmental quality, and ceilings on resource consumption, and strengthening the constraint of relevant indicators, so as to "keep economic activities and human activity in general within the limits of what our environment and natural resources can bear, giving the environment the time and space that it needs to rest and recuperate (Xi, 2019a)."
- (vi) Equity: Green development is driven by highlighting the equal rights and obligations in the use and protection of the ecological environment. One of the main approaches is to gradually incorporate the environmental protection into the goals of providing

equitable access to basic public services, implement unified, differentiated, and co-operative systems and rules, and formulate and implement an ecological compensation mechanism featuring the integration of power and responsibility.

- (vii) Innovation⁹: China aims to “pursue green development and achieve harmony between man and nature,” and “build a beautiful China with blue sky, green fields and clear water (Xi, 2016a).” Green development relies on technological and institutional innovations (the CPC Central Committee and the State Council, 2015). The main approach is to build a market-oriented green technology innovation system (Xi, 2017c), implement an eco-friendly business model, establish and improve green trading market and fee pricing mechanisms, develop green finance (Xi, 2017c), and improve green standards, certification and statistical monitoring systems, and establish a strong and effective support system for laws, regulations and policies.

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⁹Ecological innovation, also known as green innovation, is a concept first proposed by Fussler and James, and defined as the brand-new products or production process that can minimize the impact on the ecological environment while ensuring its commercial value. There has been no consensus on the definition of ecological innovation so far.

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