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The Contribution of Digital Economy to Achieving Green Growth in "Internet +" Public Welfare: Carbon Inclusion Mechanism in China

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Abstract: The purpose of this chapter is to explore how the digital economy can be a new driver of green growth. Green growth requires the pursuit of economic growth and development while preventing environmental degradation, biodiversity loss, and unsustainable use of natural resources. The digital economy is an economic form in which humans use big data to guide and achieve rapid and optimal allocation and regeneration of resources and high-quality economic development. Yet little literature has been devoted to studying the significance of the latter for the former. This chapter will first analyze the previous literature on green growth and digital economy and summarize the relevant theoretical foundations. Secondly, based on the "Internet+" public welfare project, we will study how Ant Forest, a typical representative, promotes green economic growth. On this basis, we further analyze the working principle, current situation and implementation significance of the carbon inclusion mechanism based on the digital economy. Finally, we propose suggestions on how to use the digital economy to achieve green growth by combining the above research contents.

Keywords: Digital Economy; Green Growth; Carbon Inclusion Mechanism; Internet +; China; Ant Forest

1. Introduction

With the development of society, the way of economic growth in China is becoming more and more unsustainable. The importance of green economic growth has been recognized by all sides of society. However, China's sustained 20 years of rapid economic growth has caused enormous damage to the environment, which is difficult to recover in the short term. China is currently facing the dual challenge of energy restructuring and improving resource utilization is also a major resistance to green growth. The diminishing cost advantage, the ecological environment close to the limit, the increasingly high risk and the expanding population pressure all make this initiative more difficult. Traditional approaches are inefficient, costly and irreversibly destructive, and we urgently need new tools and instruments to help achieve green growth. The digital economy is the main economic form after the agricultural and industrial economies, and is a new economic form with data resources as the key element, modern information network as the main carrier, and the integration and application of information and communication technology and digital transformation of all factors as the important driving force to promote fairness and efficiency more uniform. The digital economy is developing fast, radiating widely and affecting deeply, and is promoting profound changes in the mode of production, lifestyle and governance, becoming a key force in reorganizing global factor resources, reshaping the global economic structure and changing the global competition pattern. However, as such an efficient tool, the digital economy has rarely been used for green growth, and very little literature has been devoted to studying the significance of the latter for the former. Therefore, a deeper understanding of the digital economy is necessary to examine how it can be made to contribute to green economic growth.

2. Ant forest project

2.1 The development of Ant Forest

Ant Forest is a new digital economy technology based on the Internet+. "With the development of science and technology, the Internet and traditional industries can be integrated by using information and Internet platform to create new development opportunities with the advantages and characteristics of the Internet.

Since 2013, China has launched "Internet+" related policies, aiming to promote the deep integration of traditional industries with the Internet, promote the transformation and upgrading of economic structure, accelerate the transformation of old and new dynamics, and improve the quality and efficiency of economic development.

With the support of such policies, Ant Forest was born. In August 2016, the public welfare section of Alipay officially launched Ant Forest. The carbon emissions saved by users by walking instead of driving, paying utilities online and buying tickets online will be calculated as virtual "green energy" and used to grow a virtual tree. In April 2017, Ant Forest was officially launched and started to show users a map of the real forest planted. in August 2018, Ant Forest was promoted nationwide, calling on more users to join the environmental protection action. On October 23, 2018, Alipay, a subsidiary of Ant Financial Services, announced that the Office of the National Greening Committee and the China Greening Foundation had officially signed a strategic cooperation agreement with Ant Financial Services Group on "Internet + Compulsory Tree Planting for All People", making the Ant Forest tree planting model part of the national compulsory tree planting system. In February 2019, Hema and Ant Forest started cooperation, and you can get green energy by using non-plastic shopping bags in Hema stores. It is expected that this initiative is expected to reduce the use of 12.77 million plastic bags throughout the year and the green energy created can plant about 15, 000 sorrel trees. On April 22, 2019, it was officially announced that the number of Ant Forest users reached 500 million and 100 million real trees were planted in desertification areas, with a total area of nearly 1.4 million mu. In July 2019, Ant Forest made tree planting donations through partners to Guizhou, Shaanxi, Xinjiang and other In August 27, 2019, the 3rd anniversary of Alipay Ant Forest's launch, 500 million users have accumulated 7.92 million tons of carbon emission reduction and together planted 122 million real trees on the earth. On June 5, 2020, World Environment Day, Alipay announced the latest achievements of Ant Forest: by the end of May 2020, Ant Forest's participants have exceeded 550 million, and On September 26, 2020, at the Bund Conference Technology Public Welfare Forum in Shanghai, the IUCN announced the interim results of the "Ant Forest Afforestation Project Ecological Value Assessment": As of September 26, 2020, Ant Forest has planted more than 223 million trees, with a reforestation area of more than 3.06 million mu. As of August 2021, Ant Forest has driven more than 600 million people (613 million) to live a low-carbon life, generating more than 20 million tons of "green energy" in the past five years. Ant Forest, together with 8 public welfare partners including China Greening Foundation, China Foundation for Poverty Alleviation, China Environmental Protection Foundation and China Green Carbon Sink Foundation, has planted 326 million trees in 11 provinces, including Inner Mongolia, Gansu, Qinghai and Ningxia, with a total planting area of over 3.97 million mu. The development of Ant Forest has inspired users to participate in environmental protection actions, tree planting, donations to poor areas and other environmental public welfare causes, promoting the sustainable development of society and environmental protection, and has been recognized and supported by the majority of users and society.

2.2 The implementation path of Ant Forest

Ant Forest is a public welfare project aiming to promote low-carbon emission reduction among the public, and everyone's low-carbon behavior can be recorded as "green energy" in Ant Forest. When the "green energy" accumulates to a certain amount, you can apply online to plant a real tree in an area where ecological restoration is urgently needed. The project relies on Alipay's technical support and platform advantages, with the Ant Group providing funds to public welfare organizations, which will organize the planting and maintenance work, transforming users' energy values into actual tree planting actions, and supervised by local forestry departments.

2.2.1 Technical support level

With Alipay's platform, Ant Forest uses multiple technologies to record users' low-carbon behaviors in their lives to gain green energy. Ant Forest monitors users' behavior through Alipay's consumption and payment activities, and records the number of steps taken by users with the help of health-related APPs in their cell phones, which is used as a sample to measure the low-carbon level of users' behavior. Ant Forest users can obtain green energy through walking, offline payment, bicycle sharing, online purchase of train tickets, life payment and public transportation. The calculation of green energy is based on the scientific algorithm of carbon emission reduction and carbon sink provided by Beijing Environmental Exchange, The Nature Conservancy and others. This algorithm works based on individual behaviors that can be recorded by various APPs such as walking or riding shared bicycles, online offices, electronic payments, and cutlery-free take-out orders, which can more or less play a role in reducing resource consumption and carbon emission reduction. Alipay accesses the data from various APPs as the basis for the calculation of Ant Forest. Most of the energy generated by low-carbon behavior will appear in Ant Forest the next morning waiting to be collected by users. When users accumulate a certain number of green energy points, they can choose which specific tree to plant to protect the environment. Currently, Ant Forest has three sections: Protect the Forest, Protect the Sea and Protect Animals, each of which requires different energy points to plant. This is because the number of green energy points required to plant a tree is equal to the average amount of carbon dioxide that the tree can absorb during its lifetime.

2.2.2 Partner and tree planting action level

Ant Forest requires cooperation with public welfare organizations to convert users' energy values into actual tree planting actions. Prior to the launch of Ant Forest, Alipay had already established partnerships with public welfare organizations such as the China Greening Foun-

dation. After the launch of Ant Forest, it actively sought cooperation with many public welfare organizations to jointly promote tree-planting actions. Ant Forest has established partnerships with public welfare organizations such as China Greening Foundation, Natural Resources Conservation Association, China Green Foundation, China Charity Federation, etc. Ant Group provides funds to public welfare organizations, and the public welfare organizations are responsible for contacting farmers and herdsmen in tree-planting areas in urgent need of ecological protection for concrete implementation. After receiving the application, Ant Forest will provide training courses to local farmers and herdsmen to help them better understand the habits and cultivation methods of the trees, so that the planting process can be carried out smoothly. Ant Forest also actively cooperates with government departments, which are the main promoters of environmental protection, and cooperates with several government departments to promote environmental protection. For example, Ant Forest cooperates with the State Forestry and Grassland Administration to promote the return of cultivated land to forest and grass, and cooperates with several city governments to plant trees and greenery in cities. In addition to the environmental protection work in different communities, Ant Forest also cooperates with many universities to promote the popularity of environmental protection education, and cooperates with many communities to promote waste separation and environmental protection in the community.

2.2.3 User participation level

The success of Ant Forest cannot be achieved without the active participation and support of the users. Ant Forest attracts users to participate in tree planting through various interesting activities and providing various ways to obtain energy values, and also raises users' awareness of environmental protection and responsibility. Through the "Energy" function of Ant Forest, users can record their energy consumption, reduce energy consumption by saving electricity and water, and gain energy. The energy generated by low-carbon behavior will appear in Ant Forest the next morning and wait for users to collect it. If users forget to collect it, it will expire after 3 days. Users can also steal energy points from their friends, and accordingly, they can help their friends gain energy points. This way not only further attracts users to pay attention to their energy points but also urges them to obtain green energy through more low-carbon behaviors, while ensuring the uninterrupted availability of green energy. Of course, users can donate the energy they have accumulated to the public welfare organizations and environmental protection organizations that Ant Forest cooperates with to support more environmental protection and public welfare causes. In addition, Ant Forest users can also collect plant and animal card books to learn more about the ecosystem and the corresponding plants and animals. This initiative is intended to increase users' sense of responsibility and promote low-carbon behavior. Ant Forest also holds regular interactive activities, such as offline tree planting and environmental knowledge competitions, to encourage users to participate more actively in environmental actions.

2.3 The effectiveness of ant forest

2.3.1 Afforestation effectiveness

Through financial support and cooperation with public welfare organizations, Ant Forest has conducted large-scale afforestation activities to multi-region multi-purpose forest belts and forest protection forests. Ant Forest has funded a series of reforestation projects in ecologically fragile areas and desert regions. At the 2020 Bund Conference Technology Public Welfare Forum, IUCN announced the interim results of the Ecological Value Assessment of the Ant Forest Afforestation Project: Since 2016, the number of Ant Forest participants has exceeded 550 million, with a cumulative planting of more than 223 million real trees and a total planting area of more than 3.06 million mu. million mu. When the vegetation in the region reaches maturity, the GEP (gross ecosystem product) can reach 11.18 billion RMB, and the evaluation index includes wind and sand control, climate regulation, carbon sequestration and oxygen release, and water connotation. Ant Forest makes a direct connection between urban low-carbon life and the frontline of sand control in desertification areas. By 2021, Ant Forest will have driven more than 600 million people to live a low-carbon life and generated more than 20 million tons of "green energy" over the past five years. Within 5 years, Ant Forest has participated in ecological restoration work in 11 provinces, including Inner Mongolia, Gansu, Qinghai and Ningxia, and planted a total of 326 million trees, including more than 100 million trees in Gansu and Inner Mongolia, with a total planting area of more than 3.97 million mu. In the forest areas of Henan and Hunan, Ant Forest also cooperates with the local forest administration to provide financial and technical support for forest nurturing and conservation to protect the forest ecological environment. In addition to large-scale afforestation projects, Ant Forest also conducts scattered planting activities in some symbolic places, such as planting trees in the areas around famous attractions like the Potala Palace and the Forbidden City in Tibet, which has the effect of beautifying the environment and improving ecology. According to the official data released by Ant Forest, by the end of 2022, Ant Forest has planted more than 23 billion trees, covering an area of more than 24 million mu. These tree planting actions not only effectively improve the ecological environment, but also have a positive impact on global climate change, making an important contribution to building a sustainable society.

2.3.2 Carbon emission reduction results

Ant Forest carbon reduction is based on the carbon quantification of the benefits generated by each user's low-carbon behavior. Each

low-carbon behavior of a user will have a corresponding carbon reduction. If users can adhere to the following three points: walking to and from work within one kilometer every day, using Alipay five times a week for offline payments, and paying their monthly utility bills online, they can achieve a reduction of 142 grams per person per day. Quantifying each carbon emission behavior is a key step in recording behavior in Ant Forest. The current method of calculating individual emission reduction used in Ant Forest is a set of algorithms developed in cooperation with the Beijing Environmental Exchange. The lowest energy-reducing behavior is an offline payment, which generates 5g of energy; choosing to use an energy-efficient air conditioner at the national level generates 18.4Kg of energy; buying a train or movie ticket generates 200-400g of energy. When energy is accumulated to a certain value, it can be exchanged for a real tree.

2.3.3 Other ecological benefits

In addition to the afforestation and emission reduction benefits, the Ant Forest project has also brought many other ecological benefits. Over the years, the trees planted by the Ant Forest project have brought greenery to many deserts, and those deserts that were originally devoid of grass and sand are now getting higher and higher in vegetation coverage, bringing greenery to the "Sea of Death".

Ant Forest also cooperates with WWF and other organizations to promote ecological conservation projects, protect endangered animals and ecosystems, and promote the restoration of ecological balance. Over the past few years, Ant Forest has set up 18 public welfare reserves in 10 provinces across China, guarding more than 1, 500 species of wild animals and plants. These include projects such as giant panda protection, black-necked crane protection and wetland protection.

In addition, Ant Forest also digitizes forest protection through technical means, which improves the efficiency and sustainability of protection and avoids problems such as the waste and loss of paper documents.

2.3.4 Social benefits

The biggest contribution of Ant Forest is to allow the general public to participate in public welfare in a gamified way through the Internet platform and reap the fun from it. Through green energy collection and public welfare donations, Ant Forest promotes the concept of environmental protection, raises people's awareness of environmental protection, promotes the popularity of green consumption and lifestyle, and reduces the negative impact on the environment. User satisfaction surveys show that more than 90% of active users open Ant Forest accounts out of personal interest, not out of promotion. More than 50% of users like its public service nature of promoting environmental protection.

3. Carbon inclusion mechanism

3.1 Working principle

"Carbon Inclusion" is an innovative voluntary emission reduction mechanism. It cleverly uses the "Internet + Big Data + Carbon Finance" approach to build a set of "recordable, measurable, profitable and recognized" mechanism for citizens' carbon emission reduction, quantifies and assigns a certain value to the energy-saving and carbon-reducing behaviors of small and micro enterprises, community households and individuals. The mechanism is a positive mechanism that combines commercial incentives, policy encouragement and trading of certified emission reductions, and actively mobilizes all social forces to join the national emission reduction action. The core of this mechanism is to focus on carbon emission control at the consumption side, and to use market mechanisms and economic instruments to reward the public for low-carbon behavior, so as to promote the public to further reduce emissions and promote the behavior of controlling greenhouse gas emissions and increasing carbon sinks, forming a good atmosphere and lifestyle of reducing emissions in the whole society, and even transforming the governance and social operation mode of the government.

3.2 Current situation

3.2.1 China's carbon inclusion mechanism legislation and policy

Although the practice of carbon inclusion system in China is still in the preliminary exploration stage, the central government has issued relevant regulations and policies to clearly stipulate the steps, functions and significance of carbon inclusion practice. For example, the Notice on the Pilot Work of Low-carbon Communities issued by the National Development and Reform Commission in 2014, the Action Plan for Establishing a Market-oriented and Diversified Ecological Protection Compensation Mechanism jointly issued by nine ministries and commissions including the National Development and Reform Commission in December 2018, and the Outline of the Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area issued by the Central Committee of the Communist Party of China and the State Council in February 2019 have all provided local carbon inclusion pilot work The "Guangdong-Hong Kong-Macao Greater Bay Area Development Plan" issued by the CPC Central Committee and the State Council in February 2019 both provide guidance and affirmation to local carbon inclusion pilot work. In addition, the Notice on the Issuance of the Action Plan for Energy Conservation and Emission Reduction of the Whole Society issued in 2017, the Law of the People's Republic of China on Climate Change officially implemented in 2018 and the Work Plan of the Leading Group on Energy Conservation and Emission Reduction of Central Enterprises issued in 2020 have all made relevant provisions on carbon

emission reduction and carbon inclusion to promote the construction of carbon trading market.

In July 2015, the Guangdong Provincial Development and Reform Commission issued the Implementation Plan for the Guangdong Carbon Inclusion Pilot Project (hereinafter referred to as the "Implementation Plan") and the Guangdong Carbon Inclusion System Pilot Construction Guide" (hereinafter referred to as the "Guide"), which clarified the need to build a province-wide unified carbon inclusion system promotion platform, carbon inclusion certified emission reduction trading mechanism and commercial incentive mechanism, develop corresponding carbon inclusion methodology, and select communities (neighborhoods), public transportation, tourist attractions, and energy-saving and low-carbon products as carbon inclusion system pilot areas, officially launching the carbon inclusion pilot work. 2018 In August, in order to further deepen the idea of carbon GSP pilot work and improve the corresponding management system of carbon GSP CERs, the Guangdong Provincial Development and Reform Commission suspended the acceptance of provincial-level carbon GSP CER filing applications. In May 2019, the Guangdong Provincial Department of Ecology and Environment issued the Notice on Resuming the Acceptance of Provincial-level Carbon GSP CER Filing Applications. After years of pilot experience, in April 2022, the Department of Ecology and Environment of Guangdong Province issued the "Guangdong Province Carbon Inclusion Trading Management Measures" to clarify the management and trading of carbon inclusion, and pointed out that the experience of carbon inclusion should be actively promoted, and the establishment of a carbon inclusion cooperation mechanism in Guangdong, Hong Kong and Macao Greater Bay Area should be promoted. At the practical level, relevant departments in Guangdong Province actively dock with domestic and foreign carbon emission trading mechanisms, voluntary greenhouse gas emission reduction mechanisms and other related mechanisms, promote cross-regional and cross-border carbon inclusion system cooperation, and explore the establishment of a common carbon inclusion mechanism.

3.2.2 Examples of Carbon Inclusion Practices in China

Although the practical experience is not yet abundant, the implementation mode of carbon inclusion in China can be divided into two types: government-led and enterprise-led, depending on the main body of the platform.

The government-led model is still the pilot carbon inclusion system implemented by the Guangdong Provincial Government as an example, because it was launched early and has rich practical experience and is the most typical. Under the premise of the Implementation Plan and Guidelines as the basic framework of the carbon inclusion system, the Guangdong government has proposed a three-step plan for the carbon inclusion system: in 2015, the first batch of carbon inclusion pilot projects will be launched in several cities and counties (cities and districts); in 2018, based on the implementation results of the first step, the model will be summarized and refined, and the carbon inclusion system will be initially established in the province; in 2020, the carbon inclusion system will be continuously improved and the model will be refined; In 2020, based on the continuous improvement of the carbon inclusiveness mechanism, we will further provide positive experience for the national voluntary low-carbon work.

At the government level, Guangdong Province explicitly requires the provincial government and the pilot municipal governments to cooperate with each other to complete the carbon inclusion pilot work. At the provincial level, the provincial development and reform commission and other provincial departments are the main implementation body, and the general framework and operation specification of the carbon inclusion pilot system have been formulated. On the basis of this, various forms of carbon GSP publicity channels such as website, APP and WeChat public number have been launched, a set of carbon GSP carbon reduction behavior quantification certification system and carbon coin reimbursement system applicable to Guangdong Province has been formed, and a corresponding commercial support system has been successfully constructed. At the government level of each pilot city, the piloting, promotion and certification of carbon reduction behaviors are actively carried out.

At the corporate level, businesses are mainly responsible for providing "carbon coins" and organizing special events. In such activities, residents can exchange their carbon coins for discounts on goods or services, and such discounts are stronger than general promotions, so that residents can receive positive feedback on their low-carbon behavior, thus motivating them to be more proactive in saving energy and reducing emissions. This model also allows users to convert the collected carbon coins into carbon emission reductions, and the methodologically certified emission reductions can be sold in the carbon emissions trading market, thus allowing enterprises to make profits.

Two other typical cases are included here - Tencent's Low Carbon Planet and Ali's 88 Carbon Account. All three examples are innovative applications of carbon inclusion mechanisms launched by major Internet companies and all three have achieved the same goal of a digital economy boosting green economic growth.

3.3 Implementation significance

The purpose of developing a carbon inclusion mechanism is to encourage the public to voluntarily practice low carbon, to provide incentives to the public and enterprises that take up less resources or contribute to the creation of a low carbon society, and to use the market alloca-

tion role to achieve the purpose of active public participation in energy conservation and emission reduction. At the same time, through the consumption side to drive the production side of low carbon, through the demand side to promote the supply side of technological innovation.

The carbon inclusion mechanism has full implementation significance. First, the carbon inclusion mechanism encourages enterprises to voluntarily participate in emission reduction actions and obtain economic benefits by reducing carbon emissions, thus stimulating enterprises to reduce emissions on their own. Secondly, the carbon inclusion mechanism can promote the green transformation of enterprises. Through the carbon inclusion mechanism, enterprises will gradually reduce carbon emissions while developing their economy, thus achieving green and low-carbon transformation. This helps to promote China's economic transformation and upgrading, and achieve sustainable economic development. Again, the implementation of the carbon inclusion mechanism helps to promote the construction of carbon market, promote carbon trading, and provide economic incentives for enterprises to reduce carbon emissions, thus promoting the development of China's low-carbon economy. Based on the above points, the carbon inclusion mechanism helps to reduce greenhouse gas emissions in the atmosphere, improve environmental quality and protect the ecological environment by incentivizing carbon emission reduction, thus helping to maintain human health and living environment. Finally, the carbon inclusion mechanism connects the concept of green environmental protection with the daily life of residents, mobilizes the active vitality of individual residents to save energy and reduce emissions, and makes the concept of environmental protection deeply rooted in everyone's heart.

4. Discussion

4.1 The success reason and future development of Ant Forest

The key to the success of Ant Forest is the use of the Internet to solve the problems and pain points of environmental public welfare. This is a combination of the development of digital technology, a gamified participatory approach, the transparency of the process, and the growing environmental and health awareness of users. It is not only to establish a carbon account to quantify users' carbon reduction behaviors, but also to deeply productize this public welfare concept on the Internet. The concept of "carbon account" is further concretized, productized and valorized to reduce the cost of understanding and education of "carbon account", thus becoming an easy-to-understand and easy-to-use Internet product for users, and giving it the practical meaning of planting trees offline. This makes it an easy-to-understand and easy-to-use Internet product, and gives it a realistic meaning to plant trees offline.

The transparency of the process allows users to keep an eye on the progress of their achievements, and the freedom to choose the species and location of the trees gives them a sense of ownership and positive feedback to motivate their willingness to use the product. At the same time, users can follow the growth status of their trees in real time through remote sensing images, local cameras and on-site participation of volunteers, thus contributing to the mutual trust between users and the platform. Users can also see their own and their friends' rankings in the overall energy accumulation leaderboard, and can steal their friends' energy or help them gain energy. This format turns the process of accumulating energy into an interactive and emotional one, enhancing users' attention and promoting their low-carbon behavior.

The growing environmental and health awareness of users has led to more and more individuals voluntarily participating in the afforestation program, which has led to the gradual expansion of Ant Forest's user base and sustainable development.

4.2 Suggestions on the development of carbon inclusive mechanism

To further promote carbon inclusion, we need to optimize the top-level design at the national level and build sound related policies and regulations. At present, there is no top-level design for carbon inclusion at the national level, and there are large gaps in the regulations and policies at the central level. The smooth mechanism of the whole life cycle process from carbon emission reduction generation to trading or consumption still needs to be further improved to ensure the sustainable development of the carbon inclusion system. Therefore, there is an urgent need for the state to introduce relevant laws, regulations and policies to clarify the definition, principles, scope and implementation methods of carbon inclusion, to point out the direction for local development of carbon inclusion, as well as to support and motivate enterprises and individuals to participate in carbon inclusion actions.

4.3 Suggestions on digital economy to promote green growth

Combined with the research results, it can be seen that the digital economy has a crucial role in promoting green development, so the first step is to accelerate the development of the digital economy. Increase the investment in emerging infrastructure fields such as Internet, big data and artificial intelligence, and guide the flow of social capital to the key technology fields of Internet and big data industries. On this basis, vigorously promote the industrialization and scale development of the digital economy, enterprises can apply digital technologies such as the Internet, big data and 5G more substantially to enhance the digital level of industrial manufacturing, making digital technology from the energy supply side, industrial demand side to the production process of energy saving and waste reduction in the green empowerment step by step.

5. Conclusion

The digital economy has a non-negligible boost to economic development and environmental improvement. In this chapter, we first take Ant Forest as an example, based on the official data of Ant Financial Services and past data and studies compiled by social media, we explain the development history of Ant Forest and analyze his realization path from three levels: technical support, partner and index action, and user participation. We then analyzed the effectiveness of Ant Forest through four dimensions: afforestation effectiveness, carbon reduction effectiveness, other ecological effectiveness and social benefits. The Ant Forest project has achieved a considerable afforestation area so far, effectively reducing carbon emissions to a certain extent, while cooperating with relevant organizations to start a series of projects to protect endangered animals and digitally protect the ecosystem. Ant Forest's efforts have promoted the concept of environmental protection, popularized green consumption and lifestyle, and guided the new trend of green consumption. It also provides green jobs for residents in ecologically restored areas and helps backward areas escape poverty. In the second stage of this chapter we elaborate the carbon inclusion mechanism in China from three aspects: working principle, existing policies and cases, and implementation significance. Finally, we discuss the reasons for the success of Ant Forest and possible improvement initiatives, then discuss the development direction of China's carbon inclusion mechanism, and finally elaborate suggestions for the digital economy to contribute to green development based on the summary of the above analysis.

References

[1] Pig farmers' willingness to recover their production under COVID-19 pandemic shock in China——Empirical evidence from a farm survey[J]. ZHUO Ni; JI Chen; DING Jing-yu. Journal of Integrative Agriculture, 2020(12)

[2] Dynamics of international trade, technology innovation and environmental sustainability: evidence from Asia by accounting for cross-sectional dependence[J]. Ali Usman; Li Yanxi; Yánez Morales Verónica Patricia; Hussain Babar. Journal of Environmental Planning and Management, 2021(10)

[3] Trade Openness, Inflation and GDP Growth: Panel Data Evidence from Nine (9) West Africa Countries[J]. Gibbson Adu-Gyamfi; Emmanuel Nketiah; Bright Obuobi; Mavis Adjei. Open Journal of Business and Management, 2020(01)