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Research on Mechanism and Path of Digital Economy Boosting Ecological Governance in Chaohu Lake Basin

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Abstract

With the development of the digital economy, people's awareness of the protection of the ecological environment has become stronger and stronger, in which the Chaohu Lake Basin, as a national key ecological reserve, the ecological environment governance is particularly important. The emergence of digital economy provides new opportunities and paths for the ecological governance of the Chaohu Lake Basin, and this paper will explore the mechanism and paths of how the digital economy can boost the ecological governance of the Chaohu Lake Basin from the perspective of industry specialization.

Keywords

Digital Economy, Ecological environment governance, Chaohu Lake Basin.

1. Introduction

In 2021, the "Fourteenth Five-Year Plan" mentioned that by 2025, the digital economy will move towards a period of comprehensive expansion, and the digital economy will be closely integrated with many fields, utilizing the advantages of the digital economy, such as speed and sustainability, to fully play its role. At the same time, since the 18th Party Congress, General Secretary Xi Jinping has emphasized the need to expand and strengthen the digital economy, make full use of data resources, and apply the digital economy to various fields.

Digital economy with its strong permeability and ubiquitous characteristics, constantly penetrate into all aspects of environmental governance, more accurate fitting of environmental governance related data. Chaohu Lake Basin located in central Anhui Province, the rapid development of the same time, the pollution emission load is running high, the urban life of the rigid growth of pollution, the basin of surface pollution accumulated for a long time, the ecological regulation of its watershed environment has decreased significantly, resulting in increasingly serious ecological security. In response to the report of the 20th National Congress to promote the ecological protection and management of important rivers and lakes, Chaohu Lake Management Bureau of Anhui Province quickly carried out the "Digital Chaohu" project, which closely links the digital economy with ecological management. In order to provide scientific basis and suggestions for governmental decision-making, the group decided to carry out this study.

2. The Current Situation of Ecological Management in the Chaohu Lake Basin

2.1. Overview of the current status of the Chaohu Lake Basin

The Chaohu Lake basin is located in the middle and lower reaches of the Yangtze River in China, and is an important part of the Yangtze River economic belt. As the largest freshwater lake in East China, Chaohu Lake plays an important role in safeguarding local regional water resources, ecological environment and economic development. However, due to historical reasons and

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human activities in recent years, the ecological environment of the Chaohu Lake Basin is facing serious challenges, and ecological protection and management need to be strengthened and improved. In this chapter, the current situation of ecological governance in the Chaohu Lake Basin will be analyzed in detail from four aspects: an overview of the current situation of the Chaohu Lake Basin, an analysis of the water environment pollution situation in the Chaohu Lake, an analysis of the current situation of ecological protection in the Chaohu Lake Basin, and an analysis of the governmental governance problems in the Chaohu Lake Basin.

The Chaohu Lake Basin is one of the typical water-rich lakes, and the Chaohu Lake Basin is rich in natural resources, fertile land, abundant water resources and favorable climate, which makes it one of the important ecological function areas, agricultural areas, breeding areas and tourist areas in China. However, with the development of social economy and the increase of population, the ecological environment of the Chaohu Lake Basin is facing more and more pressure.

The water environment problem in the Chaohu Lake basin has been one of the hot issues of social concern. The main sources of water pollution are urban sewage, agricultural surface pollution and industrial wastewater. According to the data of the local environmental protection department, the polluted area of the Chaohu Lake Basin has reached 1,133 square kilometers, of which the area of water quality of poor V category has reached 829.7 square kilometers. The discharge of urban sewage and industrial wastewater greatly exceeds the local treatment capacity, which directly leads to the gradual deterioration of the water environment quality of the Chaohu Lake Basin. In addition, the agricultural industry is also an important source of water environment pollution in the Chaohu Lake Basin. Agricultural production activities, such as the excessive use of chemical fertilizers and pesticides, have led to problems such as land erosion, soil erosion, deterioration of water quality and weakening of the ecosystem, which have had a serious impact on the ecological environment of the Chaohu Lake basin.

2.2. The current situation of ecological protection in the Chaohu Lake Basin

The status quo of ecological protection in the Chaohu Lake Basin is relatively weak, mainly in the aspects of ecological environmental protection and natural resources protection. There is a certain lag in the ecological protection of the Chaohu Lake Basin, which is mainly manifested in the formulation and implementation of policies and regulations. At present, the relevant ecological protection policies and regulations in the Chaohu Lake Basin are not sound enough, and most of the protection measures remain on the surface. In addition, the current ecological protection work is also scattered and uncoordinated problems, the division of labor between different departments is unclear, the lack of effective collaboration mechanism, resulting in poor ecological protection work. In terms of natural resources, there are also some problems in resource protection in the Chaohu Lake Basin. The current development and utilization of local resources has not yet reached optimal efficiency, mainly due to factors such as the inadequate management and utilization of local resources, the low level of development and the lack of an effective protection mechanism.

The problem of government governance has been a major difficulty in the ecological governance of the Chaohu Lake basin. At present, government departments play an important role in the ecological governance of the Chaohu Lake Basin, but there are some problems, mainly in the following aspects. First of all, there are problems of decentralized functions and imperfect synergistic mechanism in government management. At present, there are more management departments in the Chaohu Lake Basin, but the dispersed functions and imperfect synergistic mechanism have led to the low effect of ecological management. Secondly, the information sharing and supervision and management mechanism in government management still needs to be improved. The local government lacks an effective information sharing

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platform in ecological management, which leads to problems such as lack of information transparency and supervision and management. Finally, the government's environmental protection investment in the Chaohu Lake Basin has been insufficient for a long time, which has directly led to the long-term unresolved ecological and environmental problems in the Chaohu Lake Basin.

3. Contribution of the Digital Economy to the Ecological Management of the Chaohu Lake Basin

3.1. Background analysis of the development of the digital economy

With the rapid development of Internet technology and the popularization of intelligent applications, the digital economy has become a new driving force for economic and social development. The digital economy is a new economic form oriented to industrial upgrading and innovation by utilizing Internet and mobile Internet technologies, with data as the core, supported by artificial intelligence, the Internet of Things and other intelligent technologies. The development of the digital economy has played an important role in promoting industrial innovation, improving economic efficiency, improving people's livelihoods and promoting ecological and environmental protection.

The development of digital economy cannot be separated from the support of Internet infrastructure, data resources and talents. China's rapid development of the Internet, with more than 800 million Internet users, and the continuous expansion and deepening of Internet application fields have provided a good foundation for the development of the digital economy. At the same time, China's data resources are also increasing, and the development of big data, artificial intelligence and other emerging technologies provides a broad space for the digital economy. Talent is an important support for the development of the digital economy, and domestic universities, research institutions and enterprises are increasing their efforts to cultivate and research talents in the field of digital economy.

3.2. The advantages of digital economy on the ecological management of Chaohu Lake basin

Digital economy plays an important role in the ecological management of the Chaohu Lake Basin. First of all, digital economy improves the level of environmental monitoring and information management in the Chaohu Lake Basin. Through digital monitoring means, it can realize the fine monitoring of the ecological environment of the Chaohu Lake Basin, discover environmental problems in time, strengthen the supervision of environmental pollution sources, and improve the efficiency of pollution management. Secondly, digital economy supports the development of ecotourism and green economy in Chaohu Lake Basin. Digital technology can realize the digital management of tourism information, tourism route planning, tourism evaluation and other aspects, and improve the intelligent level of tourism. At the same time, digital technology can help the development of green industry, maximize the use of resources, and improve economic efficiency while protecting the ecological environment.

The digital economy can also help establish a whole-process data management system for the ecological management of the Chaohu Lake Basin. Digital technology can realize intelligent analysis and mining of data and help establish a whole-process data management system for the Chaohu Lake Basin. Through real-time monitoring and analysis of pollution sources, environmental quality, governance effects and other data, it can guide decision-making and policy formulation, and improve the effectiveness and precision of ecological governance.

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3.3. The Application of Digital Economy in the Ecological Management of Chaohu Lake Basin

3.3.1. Environmental monitoring

Digital technology can realize real-time monitoring and analysis of the ecological environment of the Chaohu Lake basin. Through sensors, monitoring equipment and other means, it can realize the monitoring of air, water quality, soil and other aspects of the basin, and timely detection of environmental problems. Remote sensing technology is used to obtain data such as lake water quality, water level, water temperature, water flow, etc., and these data are processed and analyzed through big data analysis, artificial intelligence and other technologies, so as to arrive at a comprehensive evaluation of the ecological environment of the lake. At the same time, the Internet and mobile Internet technology can be used to realize automated and intelligent data collection and processing, thereby improving management efficiency and reducing management costs, real-time transmission of monitoring data to the cloud, data sharing and management, so as to better manage the ecological environment of Chaohu Lake Basin.

3.3.2. Intelligent control

Digital technology can realize intelligent control of pollution sources. Through intelligent control equipment, online monitoring and control of pollution sources can be realized to reduce environmental pollution. Through real-time monitoring of air quality, the emissions of factories and the operation of air exchange systems can be controlled according to the situation, so as to achieve the purpose of energy saving and emission reduction. Using the information and intelligent equipment provided by the Internet platform, the lake ecological basin water resource mobilization and control can be more scientific, precise and fast, and can better cope with the impact of climate change and various emergency response. Realize the efficient use of energy, the natural energy around the lake (such as water energy, solar energy, etc.) can be fine intelligent measurement and control and efficient digital economic applications, to achieve the rational use of energy development around the lake.

3.3.3. Data management

Digital technology can realize data management for the whole process of ecological management of the Chaohu Lake basin. Big data, artificial intelligence and other technologies can be used to process and analyze the collected lake ecological environment data, providing more accurate and comprehensive data interpretation and lake ecological environment assessment. Through data mining and analysis technology, the integration and analysis of data in the governance process can be realized, and data sharing and management can be achieved. At the same time, through digital means, it can realize the informatization management of enterprises and institutions, improve work efficiency and management precision, realize the sharing and opening of lake ecological environment data for the use of the government, enterprises, the public and other parties, and promote the participation of all the people in lake ecological environment management.

3.3.4. Visualization management

Digital technology can realize the visualization and management of the ecological management process of the Chaohu Lake basin. Through the visualization technology, the data are transformed into charts, reports and other forms to improve the readability and comprehensibility of the data. At the same time, it can realize the real-time monitoring and tracking of the ecological management of the Chaohu Lake Basin and improve the accuracy and efficiency of the work. Data are collected through sensors and monitoring equipment around the lake, and these data are combined with Geographic Information System (GIS) to realize the tracking and analysis of pollution sources. Managers can clearly see the distribution of pollution

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sources through the visualization display and make targeted treatment plans. Simulate the ecological restoration process of the lake, predict the ecological change trend of the lake based on the real-time collected data, and show it to the managers in a visualized way to help them formulate restoration strategies and decisions. Digital economy combines the ecological data of lakes with geographic information to assist managers in spatial planning and decision making. Through the visualization display, managers can intuitively see the land use status around the lake, water quality trends and other information, so as to formulate corresponding management measures. Through the Internet platform, share with the public, promote public participation in lake ecological management. The public can intuitively understand the ecological status of the lake and provide opinions and suggestions to increase public participation and transparency of governance.

3.4. Problems encountered by digital economy in the ecological management of Chaohu Lake basin

3.4.1. Data sharing

The digital economy requires the realization of data sharing and management, but in practice there are problems such as low awareness of data sharing and different data formats. At the same time, there are problems such as different data sources and inconsistent data standards, leading to poor data sharing. The ecological management of lakes involves data collection and management by multiple departments and organizations, and there may be problems of inconsistent data standards. Therefore, in the process of data sharing, data standards and formats need to be unified to ensure data consistency and interoperability. In the process of data sharing for ecological governance of lakes, there may be data barriers and closure, and some data may be monopolized by specific institutions or departments, limiting the access and use of data by other relevant parties. Ecological governance of lakes requires synergistic cooperation among multiple departments and institutions, but there may be a lack of cooperation and sharing mechanisms in data sharing, leading to data silos and fragmented information. Ecological governance of lakes requires long-term data collection and management, while data sharing often faces short-term interests and appraisal pressures, leading to sustainability issues in data sharing mechanisms.

3.4.2. Data quality

The digital economy needs to rely on a good data base, but in practice, there are problems such as inaccurate data collection and imperfect data processing, resulting in poor data quality, and ecological governance data may be affected by factors such as data collection equipment, sensors, and measurement methods, resulting in poor data accuracy. There may be data loss, omission or error in collection, transmission and storage, resulting in insufficient data integrity. The ecological management of lakes involves the collection and management of data from multiple departments and organizations, and there may be differences in data standards, units, formats, etc. between different data sources, leading to poor data consistency. Ecological data need to be updated and fed back in a timely manner, but the lag in data collection and transmission leads to insufficient timeliness of data. At the same time, the digital economy requires high real-time and accuracy of data, and data quality problems will also directly affect the development of the digital economy.

3.4.3. Information security

The digital economy involves a large amount of data and information, and the security protection of information is particularly important. In practice, there are security problems such as information leakage, hacking, data tampering, etc., which require the strengthening of information security protection and management. The ecological governance data of lakes may be used inappropriately, such as unauthorized third parties obtaining and using the data in

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violation of individual privacy rights. This may result in damage to individual rights and user trust. The storage and backup process of the lake's ecological governance data may be exposed to data disaster risks, such as hard disk failure, system crash, etc., leading to data loss or unrecoverability. During the transmission and sharing of ecological governance data of lakes, there may be problems with data security, such as data loss, eavesdropping, and tampering during the transmission process, as well as lax data rights management and access control during the sharing process.

In summary, digital economy plays an important role in the ecological management of the Chaohu Lake basin. The effect and precision of ecological governance can be improved by means of digital monitoring means, intelligent control technology, data management and visualization management technology. At the same time, the development of digital economy also faces problems such as data sharing, data quality and information security, which requires strengthening management and technological innovation to promote the organic combination of digital economy and ecological governance.

4. Research on the Mechanism of Digital Economy to Promote the Ecological Management of the Chaohu Lake Basin

4.1. Mechanisms for integrating the digital economy and ecological governance

Research on the Combination Mechanism of Digital Economy and Ecological Governance, Digital economy refers to the economic form based on digital technology, with digital production, digital management, digital marketing and digital service as the main characteristics. The combination of digital economy and ecological governance can not only promote the economic development of the Chaohu Lake Basin, but also realize the protection and restoration of the ecological environment of the Chaohu Lake Basin. Specific mechanisms include: (1) Digital economy promotes the development of ecological industry. The digital economy can promote the intelligence, networking and wisdom of the ecological and environmental protection industry through innovative scientific and technological means, stimulate the new kinetic energy of the development of ecological industries, and thus promote the green, efficient and sustainable development of ecological industries. (2) Digital economy realizes ecological environment monitoring and management. Digital technology can realize real-time monitoring, full tracking and data analysis of the ecological environment of Chaohu Lake Basin, and improve the refinement and scientific level of ecological environment management. Through digital means, it can provide more accurate data support and decision-making reference for ecological environment management. (3) Digital economy promotes the innovation of ecological environmental protection technology. Digital technology provides new ideas and means for ecological environmental protection technology, such as big data analysis, cloud computing, artificial intelligence, etc., which can help us better solve the problems in ecological environment management and improve the technical level and management efficiency. (4) Digital economy promotes the development of ecotourism. Digital technology can realize the digitization, virtualization and visualization of tourism resources, and provide all-round and personalized services for tourism. Digital economy can provide new kinetic energy and support for the development of ecotourism.

4.2. The Role Mechanism of Digital Economy in the Ecological Management of Chaohu Lake Basin

(1) The digital economy promotes environmental data intelligence. Digital means can integrate, analyze and mine all kinds of environmental data collected, and the key to environmental data intelligence lies in data collection and processing. Through scientific and technological means, it can realize real-time, accurate and comprehensive collection of environmental data, and at

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the same time classify, screen, process, analyze and mine the data to provide scientific basis and theoretical support for ecological and environmental governance.

(2) The digital economy improves the efficiency of environmental monitoring and management. Digital means can realize real-time monitoring and full tracking of all kinds of environmental indicators such as water quality, atmosphere, soil, etc., and improve the efficiency and precision of environmental monitoring and management. Digital economy can also promote the intelligence, refinement and personalization of environmental monitoring and management, and realize rational analysis and assessment of environmental conditions through digital technology means, providing more accurate and scientific data support for environmental protection. At the same time, the digital economy can also help the scientific and technological innovation of environmental governance and environmental management, and promote the modernization and transformation of environmental monitoring and management.

(3) The digital economy promotes the innovative development of the environmental protection industry. The digital economy can provide new technical means and programs for the environmental protection industry in the fields of pollution control and resource utilization, and promote the innovative development and upgrading and transformation of the environmental protection industry. Digital technology can be applied to the collection, processing and analysis of environmental data, through data mining, machine learning and other technologies, to strengthen the environmental protection industry's ability to analyze and predict environmental data, and to improve the environmental protection industry's decision-making level and service quality.

(4) Digital economy improves environmental public participation. Digital technology can realize interactive, diversified and personalized public participation in environmental protection, improve the enthusiasm and participation of the public, and thus enhance the democratization and transparency of ecological governance.

4.3. The mechanism of digital economy to promote the ecological management of Chaohu Lake Basin

(1) Promoting environmental data sharing and integration. Digital means can realize the comprehensive sharing and integration of environmental data, open up the information silos of various departments, and improve the synergistic efficiency and effectiveness of environmental governance. Establish an open data platform to promote the sharing and opening of environmental data, and attract the participation of more data providers, including government departments, scientific research institutions, enterprises and the public, to form an ecosystem of multi-body data sharing. Develop unified environmental data standards and formats, promote interoperability between different data sources, and realize the integration and exchange of environmental data. Uniform data standards and formats can reduce the difficulty of data integration and improve the comparability and usability of data.

(2) Implementing digital supervision. Digital means can realize comprehensive regulation and supervision of environmental governance, change the supervision of the environmental protection department from "backdoor" to "frontdoor" supervision, improve the effectiveness of governance and protect the rights and interests of the public.

(3) Innovative eco-environmental protection technology by means of digitalization. Digital means can provide innovative ideas and means for eco-environmental protection technology, such as intelligent environmental protection, ecological restoration and other technologies, providing new momentum and support for ecological governance. The innovative application of digital means can improve the efficiency and precision of environmental protection technology, and promote scientific and technological innovation and sustainable development of ecological environmental protection. At the same time, digital means can also promote the

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integration of environmental protection technology with other fields, further improving the overall level of ecological environmental protection.

(4) Promoting digital public participation. Digital means can digitize the whole process of public participation, break the limitations of time and space, and achieve comprehensive public participation in and supervision of ecological governance, thus improving the democratization and transparency of governance. Digital means can provide public transparency and sharing of environmental data, allowing the public to access and understand relevant environmental data. The public can participate in environmental governance by accessing environmental data, understanding environmental issues and monitoring and evaluating environmental issues through digital platforms.

4.4. The Influencing Factors of the Mechanisms of the Digital Economy in Promoting Ecological Governance in the Chaohu Lake Basin

(1) Policy orientation. The policy orientation and orientation of national and local governments towards the digital economy and ecological governance have an important impact on the mechanism of the digital economy contributing to ecological governance.

(2) Technical support. The mechanism of digital economy to promote ecological governance cannot be separated from the support of digital technology, and the innovation and progress of technology plays an important role in promoting the combination of digital economy and ecological governance.

(3) Management system. The combination of digital economy and ecological governance requires an effective management system, such as the establishment and improvement of environmental data sharing, digital supervision and other systems, which has a key impact on the realization of the mechanism of digital economy to promote the ecological governance of the Chaohu Lake Basin.

(4) Financial input. Digital economy to promote ecological governance requires a large amount of financial investment, the government, enterprises and other aspects of the financial investment is to realize the digital economy to promote the ecological governance of the Chaohu Lake Basin, one of the necessary conditions of the mechanism.

In summary, the mechanism of digital economy to promote the ecological management of the Chaohu Lake Basin is a complex systematic project, which requires the support and guarantee of policy, technology, management, funding and other aspects. In practice, it is necessary to give full play to the advantages of the digital economy, innovative application of digital technology, promote the upgrading and transformation of digital environmental protection industry, and improve the level of intelligence and networking of ecological and environmental protection industry, so as to realize the protection and restoration of the ecological environment of the Chaohu Lake Basin.

5. Implementation of Ecological Path in Chaohu Lake Basin

5.1. The Objective Setting and Implementation Path of the Ecological Management of the Chaohu Lake Basin

The formulation of objectives for the ecological management of the Chaohu Lake Basin requires consideration of ecological protection, ecological restoration, ecological construction and other aspects, and the establishment of the basic policy of ecological prioritization and protection. Specifically, the ecological status of the Chaohu Lake Basin, environmental problems, social and economic development needs and other factors, the development of corresponding ecological management objectives and initiatives. At the same time, it is also necessary to develop a corresponding indicator system, scientific assessment of the effectiveness of ecological governance to ensure that ecological governance to achieve practical results.

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On the basis of goal-setting, it is necessary to implement specific measures and action plans. First, a sound ecological monitoring system should be established in the Chaohu Lake Basin to keep abreast of changes in the ecological environment and provide data support for the formulation of scientific and reasonable ecological management programs. Secondly, ecological restoration and protection should be strengthened, and measures such as afforestation and wetland protection should be implemented to promote the protection and restoration of biodiversity. At the same time, it is also necessary to improve ecological construction, strengthen water resource management, soil and water conservation and other aspects of the work to shape a good ecological environment. Finally, it is also necessary to take measures to strengthen the construction of ecological civilization, promote energy-saving and environmentally friendly technologies and the concept of ecological civilization, raise public ecological awareness, and form a good atmosphere for the whole society to participate in ecological governance.

5.2. The Practical Path of Digital Economy in the Ecological Governance of Chaohu Lake Basin

The development of digital economy provides new ideas and technical means for the ecological management of the Chaohu Lake Basin. The digital economy can be used to realize the informatization, digitization and intelligence of the ecological governance of the Chaohu Lake Basin, providing more accurate and efficient solutions for ecological environment monitoring, ecological restoration and resource management. Specific practical paths include the following aspects:

(1) Strengthening ecological environment monitoring. The digital economy can provide support for data collection, transmission, processing and analysis, helping to establish a sound ecological monitoring system and realizing real-time monitoring and early warning of changes in the ecological environment. At the same time, the digital economy can also make use of artificial intelligence and other technical means to analyze and predict monitoring data, discover ecological environment problems in advance, and take effective measures to regulate and repair them.

(2) Strengthen resource management. Digital economy can realize resource informatization management in the Chaohu Lake Basin and build a digital resource management platform. Through the collection, processing and analysis of resource information, it can realize the comprehensive management of water resources, land resources, forest resources and other aspects of the Chaohu Lake Basin, rationally allocate and use resources, and guarantee the sustainable development of the ecological environment.

(3) Strengthening ecological restoration. The digital economy can provide digital ecological restoration programs to help the Chaohu Lake Basin realize the precision and efficiency of ecological restoration, and provide technical support for the restoration of key areas and key ecosystems. At the same time, the digital economy can also use virtual reality and other technical means to realize the visualization of the effectiveness of ecological restoration, and improve public participation and awareness of ecological restoration work.

(4) Promote the development of digital agriculture. The digital economy can provide digital agricultural technical support for the ecological management of the Chaohu Lake Basin and promote the upgrading and transformation of agricultural production methods. Through digital production and management, it can realize the sustainable development of agriculture in the Chaohu Lake Basin, reduce agricultural surface pollution and improve the quality of the ecological environment.

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5.3. The Innovative Path of Digital Economy in the Ecological Governance of Chaohu Lake Basin

(1) Innovative digital ecosystem. The Chaohu Lake Basin can learn from the construction experience of international advanced digital ecosystems to build a digital ecological governance system and realize digital and intelligent ecological environment management. The digital ecosystem can realize comprehensive coverage of ecological monitoring, resource management, ecological restoration and environmental protection, and provide comprehensive and accurate data support for ecological governance.

(2) Innovative digital technology means. The Chaohu Lake Basin can combine digital technical means to build a digital ecological information management platform to realize comprehensive management of the ecological environment, resource management, ecological restoration and other aspects. Digital technical means can also use big data, cloud computing, artificial intelligence and other technical means to analyze and predict the trend of ecological environment changes and provide intelligent decision-making support.

(3) Innovative digital governance model. The digital economy can provide a digital governance model for the ecological governance of the Chaohu Lake Basin. The digital governance model can realize comprehensive synergy in information sharing, collaborative operations, intelligent decision-making, etc., and help the Chaohu Lake Basin realize the comprehensive upgrade of the digital governance process.

(4) Innovative digital ecological civilization concept. The digital economy can provide new ecological civilization concepts for the ecological governance of the Chaohu Lake Basin, promote green, low-carbon and environmentally friendly production and consumption modes by means of digital technology, raise public awareness of ecological and environmental protection, and form a good atmosphere for the whole society to participate in ecological governance.

5.4. The Sustainable Development Path of Digital Economy in the Ecological Management of Chaohu Lake Basin

(1) Strengthen the construction of digital ecosystem. The digital ecosystem can help the Chaohu Lake Basin achieve comprehensive ecological environment management, realize digital and intelligent governance and management, and promote the sustainable development of the ecological environment.

(2) Promote the development of digital ecological industry. Digital economy can promote the development of digital ecological industry in Chaohu Lake Basin, realize the resource integration of digital technology, digital ecological products and digital services, and promote the development and sustainable development of ecological environment industry.

(3) Strengthening the development of digital agriculture. The digital economy can promote the digital development of agriculture in the Chaohu Lake Basin, realize digital production and management, and promote the sustainable development of agricultural production.

(4) Establishment of digital technology talent training mechanism. The sustainable development of digital economy in the ecological governance of Chaohu Lake Basin requires the support of a large number of digital technology talents, and a training mechanism for digital technology talents should be established.

6. Conclusions and Suggestions

6.1. Conclusions

For the development of digital economy and ecological governance in the Chaohu Lake Basin, this paper summarizes the following conclusions: (1) Chaohu Lake Basin is facing serious

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ecological and environmental problems, which are mainly manifested in water pollution, eutrophication of lakes, degradation of lakeshore zones, and loss of ecosystem service functions. (2) The digital economy has high driving force and innovation ability, and is an important support for the ecological management of the Chaohu Lake Basin. The development of digital economy can play a positive role in many fields, such as environmental protection monitoring, resource conservation, artificial intelligence, cloud computing and so on. (3) The development of digital economy in the Chaohu Lake Basin is relatively lagging behind, mainly due to the unreasonable allocation of resources, lack of talents, and low level of technology. However, the potential for digital economic development in the Chaohu Lake Basin is large, such as the development of digital agriculture, digital tourism, digital culture and so on. (4) The impact of the digital economy of Chaohu Lake Basin on the ecological environment is mainly manifested in two aspects: firstly, the digital economy can promote ecological environment monitoring and protection; secondly, the digital economy also produces a certain amount of environmental pressure and negative impacts, such as e-waste, energy consumption and so on.

6.2. Suggestions

For the development of digital economy and ecological governance in the Chaohu Lake Basin, this study puts forward the following suggestions: (1) Establish a joint mechanism for digital economy and ecological environmental protection, strengthen the synergistic development of digital economy and ecological environmental protection, establish a joint mechanism for digital economy and ecological environmental protection, and form a synergistic development of digital economy and ecological environmental protection. (2) Promote the integration of the development of digital economy and ecological environmental protection, promote the integration of the development of digital economy and ecological environmental protection, encourage the application of digital technology innovation, and enhance the ability of digital economy to support ecological environmental protection. (3) Introduce and cultivate digital talents, increase the introduction and cultivation of digital talents, improve the level and quality of digital talents, and provide strong talent support for the development of digital economy and ecological environmental protection. (4) Formulate policies on digital economy and ecological environmental protection, formulate policies targeting the digital economy and ecological environmental protection, strengthen the coordination and cooperation of policies, and achieve the integration and coordination of policy formulation and implementation.

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