

# From the perspective of the united front, Chinese medicine colleges help the ecological protection and high-quality development of the Yellow River Basin in Shandong Province

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Practice and Thinking of Traditional Chinese Medicine Universities Helping Shandong Yellow River Basin Ecological Protection and High-quality Development in the Perspective of United Front

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**Abstract.** As the birthplace of Chinese civilization, the Yellow River Basin is one of the most important ecological security barriers in China in the new era. From the perspective of ecological protection and high-quality development in the Yellow River Basin, comprehensively explore the opportunities and challenges faced by ecological protection in the Yellow River Basin, identify effective measures for TCM colleges to help ecological protection and high-quality development in the Yellow River Basin in Shandong, rationally use modern technological means, and make use of emerging strategic industries and innovative scientific and technological achievements to achieve optimal management. It can further accelerate the pace of TCM and personnel training and development.

**Keywords:** Shandong; Yellow River Basin; Traditional Chinese medicine colleges and universities; Ecological protection; High-quality development.

## 1. Introduction

The Yellow River basin in Shandong province spans the three geographical steps of east, middle and west of north China, and belongs to the dense area of China's important ecological barrier and the important land area of the "Belt and Road". From the perspective of overall development, the current level of economic development in the Yellow River Basin is relatively backward, and the scope of poverty is relatively wide, which is a major and difficult point for China's ecological security and economic and social development. In order to fundamentally solve the structural problems between ecological resource protection and socio-economic development, China put forward a strategic policy of ecological protection and high-quality development in the Yellow River Basin in 2019. In order to develop the social economy on the basis of ecological civilization, it is necessary to attach importance to production, life and ecology at the same time, to ensure the high-quality and sustainable development of the three, and to achieve balance and coordination among the three. Therefore, some scholars, under the guidance of the concept of system, put forward a theoretical study of ecology, space and time as dimensions. The specific price is shown in Figure 1 below: [1.2.3]

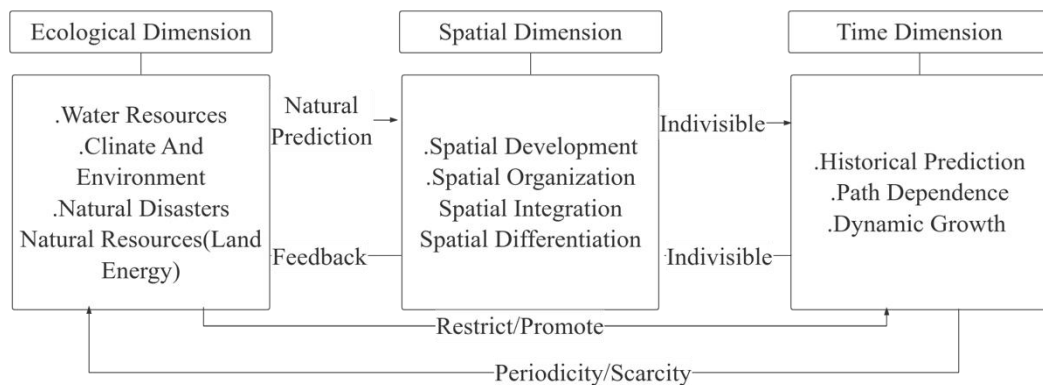


Figure 1 Multi-dimensional theoretical analysis frame diagram

Based on the analysis of the above figure, the problem of carrying ecological resources in the Yellow River Basin in Shandong Province is found that the center of gravity of local economy and population space tends to the middle and lower reaches. The per capita water resources are extremely scarce in the upper and lower reaches except in Qinghai and some parts of northern Sichuan, while the middle reaches are relatively deficient. From a local point of view, the upper reaches of the Yellow River are rich in water resources, but there is a phenomenon of excessive per capita sewage discharge, while the lower reaches of the Central Plains city cluster and the cities of the Shandong Peninsula are facing the double pressure of sewage and high pollution. In addition, the basin also has serious soil erosion, local degradation of the ecosystem, and increased risks of geological and flood disasters. [ 4.5.6 ]

After finishing and analyzing the per capita GDP of the provinces along the Yellow River Basin from 2000 to 2019, the result shown in Figure 2 below is obtained, which proves that both the economic aggregate and the per capita level of the provinces have shown a downward trend in the 13th Five-Year Plan period after 2015. This result shows that there is a big gap between the macroeconomic development level of the Yellow River Basin and the national level.

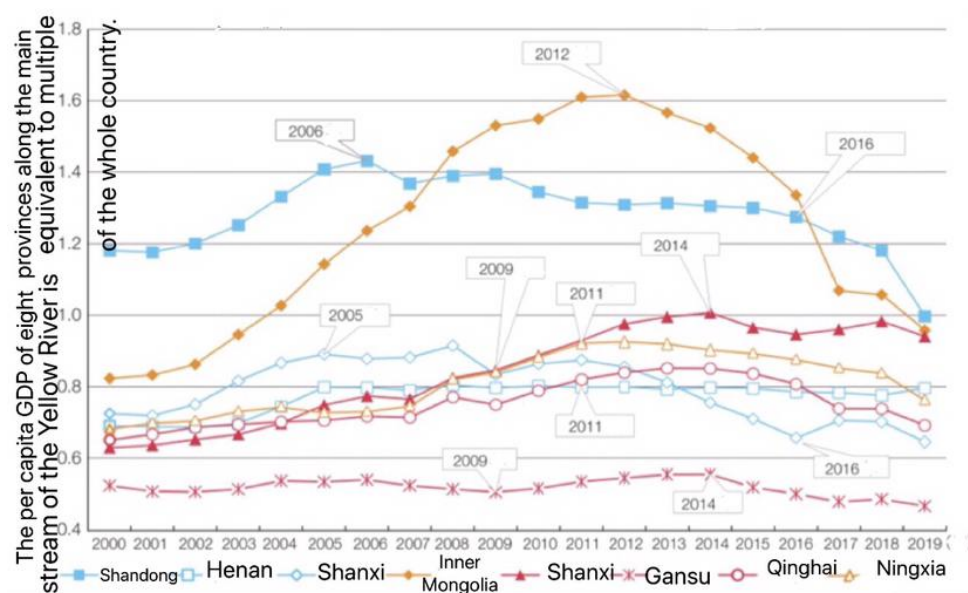


Figure 2 Changes in per capita GDP along the Yellow River

Systematically sorting out the main issues of ecological protection and development in the Yellow River Basin, and aiming at the strategic policies and effective opportunities proposed in

recent years, ecological restoration and protection have become the focus of high-quality development. Based on the analysis of the development framework shown in Figure 3 below, it can be seen that at present, the local relevant departments mainly start from the interaction of ecology, agriculture and the development of urban and mountainous areas, and scientifically solve the problems related to ecological restoration and protection and high-quality development. [ 7.8.9 ]

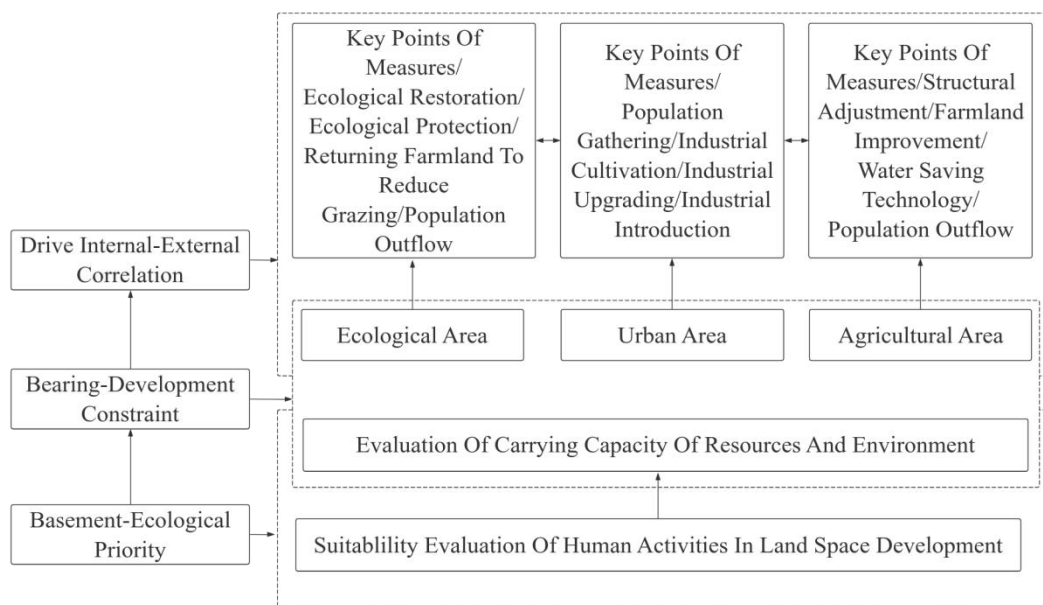


Figure 3 Development framework

Among them, the Chinese medicine industry is one of the industries with great development space in the 21st century in China. As an important base for cultivating senior talents, medical colleges and universities have become the birthplace of Chinese medicine academic achievements and occupy an important position in the Chinese medicine innovation system with their information technology, expert teams, scientific research sites and academic environment. Therefore, after understanding the research status of ecological protection and high-quality development of the Yellow River Basin in Shandong, this paper mainly explores how to help ecological protection and high-quality development of the Yellow River Basin in Shandong from the perspective of the united front based on traditional Chinese medicine colleges, so as to create favorable conditions for accelerating the development of traditional Chinese medicine technology and provide effective basis for protecting the ecological environment. [ 10.11.12 ]

## 2. Method

### 2.1 Strengthen basic research

Artificial breeding and planting of wild Chinese medicine resources can increase the production of Chinese medicine resources comprehensively and avoid the destruction of wild resources. Therefore, traditional Chinese medicine colleges and universities should make full use of their own advantages and research platforms, establish cooperative relations with relevant departments, comprehensively analyze the growth laws and growth habits of traditional Chinese medicine resources according to various policies proposed by China at present, determine the relevant substances affecting the growth of traditional Chinese medicine, change the dormance-mode of traditional Chinese medicine, and truly simulate the original ecological environment. Actively carry

out the ecological planting of Chinese medicinal materials modeled after the wild environment, which can not only expand the access to resources, increase the artificial cultivation area of Chinese medicinal materials, reduce the damage to the ecological environment, but also ensure that the artificial cultivation of Chinese medicinal materials and wild resources have the same effect. From the perspective of ecological protection and high-quality development in the Yellow River basin, Chinese herbal medicines belong to a kind of agricultural products that have been seriously polluted. The reason for this phenomenon is that a large number of harmful substances have been absorbed during artificial cultivation and wild growth, and growing in an environment with serious long-term pollution will lead to a continuous decline in the application quality of Chinese herbal medicines. Therefore, while studying efficient cultivation technology, Chinese medicine colleges and universities should actively explore Chinese medicine resources, scale and standardized production management technology, and scientifically formulate effective technical standards to ensure that artificial cultivation and technology promotion have evidence to rely on. [13.14.15]

## **2.2 Solving the dilemma of technological development**

Under the guidance of relevant departments, according to the varieties and census data of Chinese medicinal materials in the Yellow River basin of Shandong, priority should be given to the endangered Chinese medicinal materials, scientific and perfect artificial cultivation technology and optimization plan should be quickly formulated, special technology and innovation cultivation funds should be formulated, and good cooperative relations should be guided by universities, research institutes and enterprises. Actively solve the problems faced by the cultivation and technology of wild Chinese medicinal materials, which can not only guide the steady development of Chinese medicinal materials in the direction of standardization and science, but also protect the ecological environment of the Yellow River basin, and truly realize the sustainable utilization of wild Chinese medicine resources.

## **2.3 Build an early warning system scheme**

In view of the problem of TCM colleges helping ecological protection and high-quality development of the Yellow River Basin in Shandong, after creating a standardized and effective database, the government statistical data, industry information data, enterprise information data and professional information data are stored in the information source as shown in Figure 4 below, so as to ensure that different information materials are in different sectoral modules. Avoid unnecessary conflicts when applying search data.

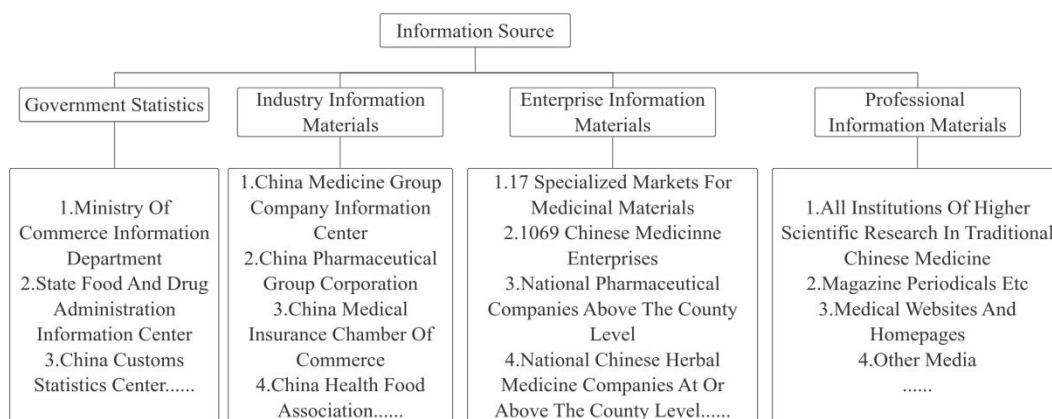


Figure 4 Data source and database architecture diagram

After you have the database you need to run the system, build the management organization as shown in Figure 5 below: First, the office of the early warning system consists of the person in charge of the office of the system, the office of the sub-center and the team members. It is mainly responsible for the management of the entire system, the coordination and communication between the headquarters and the sub-center, the review and collection of various information, the organization and formulation of the work plan and implementation rules for the data processing of the early warning system, and the unified organization of the research and development, development and compilation of data processing software. Second, the data processing group is divided into two aspects: data entry and data review. The sub-centers are mainly responsible for completing data entry, data verification, editing and review, etc. After the audit is passed, the backup is arranged according to the unified requirements and reported to the system office within the specified time. The data review group will regularly check and review the quality of the reported data. And provide the test results to the system office; Third, the technical support group is composed of the technical support group of the system office and each branch center, which is mainly used to maintain the normal operation of the software and hardware system, participate in the technical guidance and technical training of each branch center, and undertake other tasks assigned by the system office. Fourth, the intelligence analysis expert group is composed of experts in related fields organized by the headquarters, regularly inspect and review the quality of reported data, formulate intelligence analysis according to different needs, and undertake other tasks proposed by the office of the leading group; Fifth, each branch office should fully implement the processing principles proposed by the early warning system office, orderly complete the data review, data reporting and headquarters communication, etc., and provide an effective basis for traditional Chinese medicine colleges to help the ecological protection and high-quality development of the Yellow River Basin in Shandong.

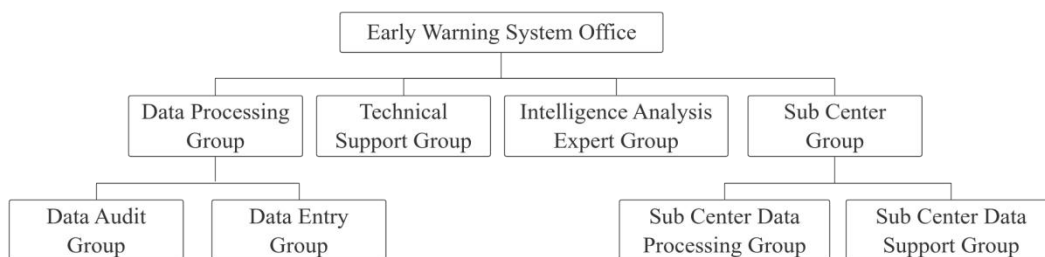


Figure 5 Managing the organizational structure

### 3. Result analysis

From the perspective of long-term development, Chinese medicine colleges and universities to help the ecological protection and high-quality development of the Yellow River basin in Shandong will achieve excellent results from the following aspects: On the one hand, to promote the high-quality development of the Chinese medicine industry in the region, and accelerate the speed of technological innovation of the Chinese medicine industry. For example, in the high-quality development of the Chinese herbal medicine industry in a certain region, the local government provides strong support as a guarantee basis, actively joins forces, and invites Chinese herbal medicine related enterprise experts and colleges to participate in a systematic understanding of the types of local Chinese herbal medicine, planting methods and base development models. At present, the local Chinese herbal medicine industry is mainly concentrated on the sales of raw materials and some crude medicinal materials, and mainly lacks the deep processing of Chinese herbal medicine, high value-added product development and other industrial extension content. Therefore, the future development will, according to its own economic level and technical advantages, comprehensively investigate the planting source of Chinese medicinal materials, actively explore and establish a new integrated model of breeding, seedling cultivation, planting, harvesting, processing and sales of Chinese medicinal materials, build a cooperation platform with local medical colleges and universities and scientific research institutes, jointly publish high-level technical research results, and contribute to the development strategy of the Yellow River Basin. Only in this way can we build rural development brand projects with regional characteristics to serve and lay a solid foundation for improving the level of economic development of our country; On the other hand, the organic combination of traditional Chinese medicine colleges and universities with ecological protection in the Yellow River basin in Shandong can create a global tourism development pattern for the region. By understanding the local hard conditions such as climate change and soil environment, the planting types and planting methods of Chinese medicinal materials are clearly defined. At the same time, the natural ecological protection measures of saline-alkali land in the Yellow River basin are considered, the two-way development measures of local economy and basin protection are proposed, and the methods of adjusting Chinese medicinal materials industry are summarized to achieve maximum benefits, avoid excessive use of agricultural production land, and reduce production costs. Increase the income of the general public. In addition, on the basis of economic construction and development, it is necessary to increase publicity and education, use knowledge popularization, drug investigation, questionnaire survey and other methods to help people better understand the safe and scientific methods of drug use, truly realize the relationship between traditional Chinese medicine colleges and local ecological protection and economic development, and always firmly serve the grassroots people. Encourage and support more talents to

participate in the innovative development of important industries, so as to create favorable conditions for the inheritance of traditional Chinese medicine culture and technological innovation.

## Conclusion

To sum up, as a component of traditional Chinese medicine culture, in the modern economic construction and development, in the face of ecological protection and high-quality development requirements in the Yellow River basin, if the excessive use and exploitation of wild Chinese medicine resources, then there is likely to be no medicine available. In the face of this phenomenon, it is necessary to continuously optimize and improve the development and utilization mechanism of Chinese medicine resources, let Chinese medicine colleges and universities, Chinese medicine enterprises and relevant departments establish good cooperative relations, jointly discuss the application status of wild Chinese medicine resources, propose high-quality protection and development and application plans as soon as possible, and increase the cultivation and artificial planting of Chinese medicinal materials, so as to create favorable conditions for social and economic development.

## Reference

- [1] Chunya Cheng, Yanzhu Ma, Ran Li, et al. Research progress and application status of chemical constituents and pharmacological effects of pollen [J]. Journal of Shaanxi University of Chinese Medicine, 2023, 46(3):108-118. (in Chinese)
- [2] Qing-Hua Wu, Jin PEI, Deguang Wan, et al. Thinking on Constructing a "student-centered" three-dimensional practical teaching system for TCM resources and development [J]. Chinese Medicine and Clinic, 2021, 12(6):62-66.
- [3] Mingxia Yang, Wei Qin, Hong Zhang, et al. Study on the potential distribution of *Cyrtomyces sinensis* based on MaxEnt model and ArcGIS [J]. Chinese Journal of Traditional Chinese Medicine Information, 2023, 30(2):1-4.
- [4] Yu Huang, Hui Fan. The connection between historical memory and national consciousness: The logic and approach of the protection and development of historical resources of Dongjiang Column [J]. Journal of Huizhou University, 2023, 43(4):59-66.
- [5] Huqiang Fang, Pengfei Zhang, Bing He, et al. Ecological suitability regionalization of Linthistle based on MaxEnt model and ArcGIS [J]. Chinese Journal of Traditional Chinese Medicine Information, 2023, 30(7):1-4.
- [6] Wanyun Zhou, Hongkui Guo, Baiyun Country. Investigation and analysis of wild edible agricultural and sideline products resources in Hongta District [J]. Yunnan Agricultural Science and Technology, 2023(2):8-12. (in Chinese)
- [7] Qiumei YAN, Longsheng Ren, Fei Hou. Narrative study on ecological protection and development of the Yellow River Basin in Shandong Province in the new era [J]. Future and Development, 2023, 47(7):104-108. (in Chinese)
- [8] Xuesen Chen, Nan Wang, Zongying Zhang, et al. Fruit science and technology for the national major demand III: Mountain farm pear and supporting technology to help the Yellow River basin high-quality development [J]. Chinese Fruit Science, 2023(3):1-4.

- [9] Social organizations in Dongying City, Shandong Province contribute to rural revitalization and promote ecological protection in the Yellow River Basin. *Chinese Social Organizations*, 2022(22):23-23.
- [10] Aiping Wang. Study on water ecological constraints and countermeasures for ecological protection and high-quality development in the Yellow River Basin in Shandong Province [J]. *Journal of Shandong Normal University: Social Science Edition*, 2022, 67(5):123-132.
- [11] Jiangtao Zhou, Guangshun Zhang. Spatial and temporal evolution and regional differences of ecological protection and high-quality development in the Yellow River Basin: An empirical analysis based on Yanhuangjiu City, Shandong Province [J]. *Journal of Social Sciences*, 2023, 38(3):43-49.
- [12] Reply of Shandong Provincial People's Government on the establishment of Shandong Yellow River Basin Ecological Protection and Social Governance Innovation Research Institute (Lu Zhengzi [2022]117)[J]. *Bulletin of Shandong Provincial People's Government*, 2022(18):2-2.
- [13] Jiahong Zhang. Ecological protection and utilization of traditional Chinese medicine resources in Yellow River Basin [J]. *Rural Economy and Science and Technology*, 2023, 34(9):30-32. (in Chinese)
- [14] Ping Wang, Shien Yang. Approach to ecological protection and governance in the Yellow River Basin based on environmental Big Data [J]. *Journal of the Party School of Jinan Municipal Committee of the CPC*, 2023(2):37-40.
- [15] Guifang Zhou, Yanbing Zhou, Tao Hu. Temporal and spatial evolution of county carbon emissions and its influencing factors in Central Plains urban agglomeration [J]. *Management Journal*, 2023, 36(3):19-34. (in Chinese)