

Research on the Horizontal Transfer Payment System of Ecological Compensation in the Sanjiangyuan Watershed

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Abstract: As the birthplace of "two rivers and one river" and an important water supply and conservation area in my country, the Three Rivers Source Region has experienced ecological problems such as grassland degradation, land desertification, and soil erosion in recent years. my country's current financial policies such as transfer payments for national key ecological function areas, returning farmland to forests and grasslands, and protecting public welfare forests have disadvantages such as single compensation subject, small compensation funds, and incomplete assessment, incentive and performance evaluation systems. It is suggested to explore the establishment of the horizontal transfer payment for ecological compensation in the Three River Source Basin from the aspects of clarifying the subject and object of the horizontal transfer payment, defining the scope and standard of the transfer payment, broadening the path and method of the transfer payment, and improving the assessment and incentive mechanism and performance evaluation system of the transfer payment. system to serve as a useful supplement to the vertical transfer payments of the central government.

Keywords: Sanjiangyuan, Ecological compensation, Horizontal transfer payment.

1. Introduction

The state attaches great importance to the ecological protection and construction of Sanjiangyuan Nature Reserve, which is inseparable from the unique ecological status and strategic development status of Sanjiangyuan. The Sanjiangyuan area is not only rich in water resources, but also a gene pool of biological resources in alpine regions and a climate regulator in my country and Southeast Asia. Protecting the ecological environment of the source area of the Three Rivers and realizing the harmonious development of man and nature in this area is not only of great significance to ensuring the ecological security of the Yangtze River, Yellow River, and the middle and lower reaches of the Lancang River, but also has an important impact on maintaining global climate stability and ecological balance.

2. The Necessity of Establishing the Horizontal Transfer Payment of Ecological Compensation in the Three River Headwaters Basin

First of all, the Three Rivers source area is known as the "Chinese Water Tower". Among them, there are dense rivers, many lakes and swamps. It is the birthplace of the Yangtze River, the Yellow River and the Lancang River. from this region [1]. Today, the ecological environment of the Three River Source region is fragile, with prominent problems such as grassland degradation and land desertification, and the water conservation function is declining, posing a serious threat to the ecological security and sustainable development of the Three River Source region and even the whole country.

Secondly, my country is a vast territory and the distribution of natural resources is uneven. Most of my country's key ecological function areas are located in the border areas of the northeast, northwest, and southwest. This area is rich in ecological resources, but also has the characteristics of

ecological fragility and economic backwardness, that is, the "trinity" area. The protection of the ecological environment has a typical positive externality. Poor areas sacrifice development opportunities to provide ecological products, while economically developed areas with sufficient financial resources enjoy "free rides", which is contrary to the concept of fair and just development.

Once again, the "13th Five-Year Plan" period is the decisive stage for building a moderately prosperous society in an all-round way and realizing the first centenary goal set by our party. Most of the ecological function areas are concentrated and contiguous destitute areas, which are the main battlefields for poverty alleviation. It guarantees the right to survival and development of poor areas, and prevents the residents in the areas where ecological products are provided from "breathing fresh air on a hungry stomach". Actively manage the ecological environment. In resource-rich areas such as key ecological functional areas, ethnic minorities occupy a relatively high proportion. Of the 25 national key ecological functional areas, 23 are in ethnic areas [2]. more than 90% of the population. Therefore, ecological problems, poverty problems and ethnic problems in ecological functional areas are intertwined. Increasing the compensation for ecological functional areas and broadening the channels of ecological compensation funds are of great significance for maintaining ethnic unity, promoting social stability and economic development. The development concept of "innovative, coordinated, green, open, and shared" that the country has always adhered to, as well as the scientific assertion that "lucid waters and lush mountains are invaluable assets" put forward by General Secretary Xi Jinping, provide a complete transfer payment form for the establishment of ecological function areas such as Sanjiangyuan. the theoretical basis and political guarantee.

Finally, the establishment of a horizontal transfer payment system for ecological compensation in the Sanjiangyuan River Basin is a useful supplement to fiscal policy. At present,

for areas with relatively unclear relationship between ecological profit and loss, such as forests, grasslands, wetlands and other ecological compensation, the compensation is mainly through the vertical transfer payment of the central government. However, due to insufficient funds for vertical transfer payments and limited coverage, vertical transfer payments play a limited role in ecological compensation. Vertical transfer payments entirely dominated by the central government are difficult to reflect the principle of "who benefits and who pays", and is not conducive to the internalization of the externality of ecological services. The "Opinions on Improving the Ecological Protection Compensation Mechanism" issued by the General Office of the State Council in May 2016 pointed out that in addition to the vertical ecological compensation of central transfer payments, the establishment of a horizontal ecological compensation system should be promoted. However, building a comprehensive horizontal ecological compensation mechanism is a complex systematic project. Under the background that the ecological environment needs to be improved urgently and horizontal ecological compensation laws and regulations cannot be promulgated immediately, by giving full play to the active role of the local governments in the ecologically beneficiary areas in the horizontal ecological compensation The local government of the ecological benefit area purchases ecological products on behalf of the ecological beneficiary area, that is, the horizontal transfer payment is carried out to realize the compensation for the land provided for ecological products. On the one hand, it can play a positive role in protecting the ecological environment and on the other hand, it can also alleviate poverty The financial pressure of the regional government and the central government has aroused the awareness of the beneficiary regions to consciously share the cost of ecological construction.

3. Problems Existing in The Transfer Payment of Ecological Compensation in The Three River Headwaters Basin

3.1. Lack of Legal Guarantee for System Stability

Since the 1980s, the country has successively formulated a number of laws and regulations related to the construction of ecological environment protection, and Qinghai Province has also formulated more than 20 ecological environment and related local regulations and separate regulations. However, there are no unified and special laws and regulations on the issue of construction. At present, the ecological compensation implemented in the Sanjiangyuan area is mainly based on the "Qinghai Sanjiangyuan Nature Reserve Ecological Protection and Construction Overall Plan" and the "Trial Measures for the Sanjiangyuan Ecological Compensation Mechanism". There is no clear legal basis and there is great uncertainty. , lack of long-term efficacy. Taking into account the requirements of the unification of the legal system and the particularity of the ecological environment of the Three Rivers Source Area, it is more practical to adopt a system model combining central legislation and local legislation [3]. The ecological protection of the Three Rivers source region has great external economy, so the legislation of this region involves the relationship between the region and other regions, especially the middle and lower reaches of the basin. The

coordination of this relationship can only be solved through the mode of central legislation. The ecological protection construction in the Sanjiangyuan area is also unique. Combining the actual situation of the area, making bold innovations in the legal system and formulating local laws suitable for local ecological and economic development will help to build a system for the protection of the Sanjiangyuan ecological protection barrier. It is of great significance to improve the institutional system of ecological environmental protection in the Three Rivers Source Area.

3.2. The Main Body of Ecological Compensation Is Single, And the Scale of Compensation Funds Is Small

The ecological protection of the Sanjiangyuan area is difficult, the cost is high, and the industrial development is very slow. After the main functional areas are divided, the prohibited and restricted development areas account for 98.9% of the total area of the Sanjiangyuan area, and the population of the core area, buffer area and experimental area is 98.9%. It is not continuous with the distribution of cities and towns, and the ecological protection construction has certain particularities. In the Sanjiangyuan area, the grasslands are overloaded and degraded, and the rat infestation is rampant. Due to overgrazing of grasslands, mineral exploitation and climate change, the desertification area of grassland in the Three River Headwaters area has reached 9434.6km², accounting for 3.01% of the total area of the Three River Headwaters area; the total area of black soil beach is 47083.2km², accounting for the total area of the Three River Headwaters area. 15% of the area; the area of rodent damage is 32400.2km², accounting for 10.34% of the total area of the Three Rivers Source Area [4] . If it is not treated, it will continue to deteriorate the water conservation and soil and water conservation capabilities of the " China Water Tower " in the Three Rivers Source . The imbalance of " human - grass - animal " relationship is the fundamental cause of ecological degradation in the Sanjiang source area [5] . Implementing ecological migration is one of the effective ways to ease the pressure on grasslands and maintain the balance of animal husbandry . Affordable and affordable ” , the government must take a series of measures to support the development of immigrants . As far as the ecological compensation in the Three Rivers Source Area is concerned, the main body of compensation is the state, and the local government provides corresponding funds. There are two main types of ecological compensation: one is the compensation for returning grazing land to grassland, which mainly includes 3,000-8,000 yuan per household per year. Feed grain and heating and fuel subsidies ranging from 800-2,000 yuan per household; the second is the compensation for other national ecological construction projects, including the conversion of farmland to forest (grass) projects , natural forest protection projects , ecological public welfare forest compensation, etc. The standard is generally in 1.75-5 yuan / mu . The source of compensation funds is single, the compensation standard is relatively low, and the limited funds are scattered for various ecological compensations in various regions in the form of drizzle, resulting in inefficient use and waste of funds .

3.3. Incomplete Assessment and Incentive Mechanism and Ecological Compensation Performance Evaluation System

According to the "Overall Plan for the Reform of the Ecological Civilization System", the horizontal ecological compensation of inter-provincial river basins is "guided by the central government and given priority to by local compensation", but it is still mainly carried out by means of vertical transfer payments from the central government to balance local financial resources, and horizontal transfer payments across regions. Difficult to implement, on the one hand, it is related to the complexity of horizontal transfer payments, and on the other hand, it is because local governments are not very enthusiastic about establishing horizontal transfer payments. In order to increase the enthusiasm of the district and county governments for ecological protection, the Ministry of Environmental Protection (now the Ministry of Ecology and Environment) began to conduct ecological performance assessments based on the county ecological environment index in 2012. Because the state of the county's ecological environment is not only related to the efforts of the district and county governments in ecological protection, but also affected by external random factors such as natural climate change to a certain extent, and the effectiveness of the district and county governments' efforts in environmental protection cannot be immediately reflected in the ecological environment. Among the environmental indicators, there is information asymmetry between the central government and the district and county governments. When the district and county governments in key ecological function areas face greater uncertainty and risk aversion in the improvement of the ecological environment, only using the EI indicator as the basis for the incentive transfer payment will generate a large agency cost and affect the effect of the incentive mechanism [6]. In 2008, the state promulgated and implemented the "Measures for Transfer Payments to National Key Ecological Function Areas", whereby the Ministry of Finance directly allocates funds to various regions, and updates and improves relevant management regulations. However, these regulations did not formulate detailed methods for the use of funds, nor did they propose clear supervision measures for the use of funds, resulting in serious misappropriation of ecological compensation funds. At this stage, the performance evaluation system of transfer payment for national key ecological function areas only includes county ecological environment indicators (EI), and the information that can be revealed about the efforts of district and county governments to protect the ecological environment is relatively limited. The lack of a complete performance evaluation system makes the process of ecological compensation transfer payment with huge risks, and it is impossible to accurately monitor the use of financial funds and analyze and summarize the effect of ecological compensation, which is not conducive to the effective investment and supervision of subsequent financial funds.

4. Suggestions for Improving the Horizontal Transfer Payment System in the Three Rivers Source Basin

Establishing a horizontal transfer payment system in the

Three River Headwaters Basin and clearly specifying the subject, scope, standard, path and method of the horizontal transfer payment is an important way to solve the problem of effective supply of ecological services in the Three River Headwaters Basin, and it will help to motivate poverty-stricken areas to protect the ecological environment. Positive interaction between ecological compensation and environmental protection.

4.1. Clarify the Subject and Object of The Horizontal Transfer Payment in the Three River Headwaters Basin

The determination of the main body of the horizontal transfer payment of ecological compensation depends on the size of the benefit range of ecological compensation. In theory, all areas that benefit from the Three Rivers Source should be the main body of the horizontal transfer payment. However, since the ecological products of the Sanjiangyuan area benefit the whole country and even the whole world, it is not feasible and realistic to list most countries and governments as the main body of horizontal transfer payment. Therefore, the author suggests that provinces with close beneficiary relations should be the main body of transfer payment. With the development of social economy, it will be further improved. At present, the main body of the horizontal transfer payment for the Sanjiangyuan Nature Reserve, which is mainly based on watershed compensation, includes the economically developed local governments in the middle and lower reaches of the "two rivers and one river", and the object of the horizontal transfer payment is the local government of the Sanjiangyuan Nature Reserve. The relatively developed middle and lower reaches of the region take the responsibility of protecting the source of the Three Rivers, which is conducive to reducing the burden of ecological construction in the source region and helping to win the battle against poverty in an all-round way.

4.2. Defining the Scope and Standard of Horizontal Transfer Payments in the Three River Headwaters Basin

Vertical transfer payments such as returning grazing land to grassland and returning farmland to forest are difficult to meet the multi-faceted and multi-level construction needs of ecological protection in the Three River Source Area. Therefore, the scope of horizontal transfer payments in the Three Rivers Source Area should also include three aspects: promoting ecological protection and construction, improving residents' production and living conditions, and improving basic public service capabilities. Based on the above three criteria, the members of the expert group of the Chinese Academy of Engineering estimated that the total compensation fund based on the total investment of ecological protection cost in the Sanjiangyuan area from 2010 to 2030 is 409.54 billion yuan. In 2005, the State Council approved the implementation of the "Overall Plan for Ecological Protection and Construction of Sanjiangyuan Nature Reserve", which clarified that the total investment of the first phase of Sanjiangyuan ecological protection and construction was 7.507 billion yuan, which was used for forest and grassland fire prevention and rat protection from 2005 to 2020. In 2013, the State Council passed the overall plan for the second phase of the protected area, with a planned investment of 16.057 billion yuan to further strengthen the

ecological protection and construction of the Sanjiangyuan ecological function area. Although the state's unilateral investment is a little weak in the face of the huge capital demand for the ecological construction of Sanjiangyuan, "everyone gathers firewood and the flame is high", and other developed regions that benefit from horizontal transfer payments can work together to transfer the funds for ecological protection costs. The gap is blocked.

The determination of ecological compensation standards has always been a difficult and core issue in establishing an ecological compensation mechanism. Foreign countries tend to use negotiation to determine the ecological compensation standard. China's vertical transfer payment quantifies the compensation standard according to factors such as fiscal revenue and expenditure gaps. However, the calculation of the ecological compensation horizontal transfer payment standard is limited by many factors. Taking the Sanjiangyuan Nature Reserve as an example, due to the lack of a unified and authoritative index system and calculation method, and the difficulty in obtaining a large amount of environmental data, it is difficult to obtain satisfactory results for all parties in the evaluation and calculation of ecosystem service value. Therefore, the author suggests that in the case of limited methods and technologies, the changes in ecological protection costs and development opportunity costs should be taken as theoretical reference, combined with the relevant national ecological compensation standards and the specific conditions of the Three Rivers Source Area in Qinghai Province to determine reasonable and feasible compensation standards. Ecological protection cost refers to the direct cost or economic price paid to protect, maintain or restore the ecological environment, and it is the actual expenditure and expense. The development opportunity cost refers to the social and economic development opportunities given up by ecological service producers in order to protect and build the ecological environment, and the resulting opportunity loss. The development opportunity cost of the Three Rivers Source Area mainly includes the loss of economic development opportunities due to the implementation of stricter environmental protection standards and the loss of basic economic production and life given up to manage the ecological environment, especially the increase in living costs caused by ecological immigration [7].

4.3. Broaden the Paths and Methods of Horizontal Transfer Payments in the Three River Headwaters Basin

In April 2020, the Ministry of Finance, the Ministry of Ecology and Environment, the Ministry of Water Resources and the State Forestry and Grassland Administration jointly issued the "Pilot Implementation Plan for Supporting and Guiding the Yellow River Basin to Establish a Horizontal Ecological Compensation Mechanism", which clearly stipulates the guiding ideology, the scope and duration of implementation, main measures and organizational guarantees have pointed out the direction for China to comprehensively establish horizontal ecological compensation for river basins and horizontal ecological compensation for key ecological function areas.

"two rivers and one river", the Sanjiangyuan area will directly affect the cost of protection and governance of the whole basin. Therefore, the Sanjiangyuan area is the key and priority test area for exploring and establishing horizontal ecological compensation in the basin. The horizontal

ecological compensation in the Sanjiangyuan area involves many provinces, the amount of compensation is huge and the situation is complicated. It is difficult to reach an agreement on compensation standards and scope only through Qinghai Province and other provinces and cities. The establishment of horizontal ecological compensation in protected areas removes obstacles. It is possible to learn from the clean development mechanism, and the four departments, together with relevant departments and localities, establish a three-river source ecological environment co-construction and sharing mechanism or a working platform for the basin ecological compensation mechanism between the upstream and downstream provinces of the "two rivers and one river" basin [8], strengthen communication and consultation, supervise and urge Work to ensure that the relevant data is accurate, objective and comprehensive. The central government allocates part of the funds from the water pollution prevention and control funds every year to support and guide the establishment of horizontal transfer payments for ecological compensation in the Three River Headwaters area. The middle and lower reaches of the Sanjiangyuan Nature Reserve jointly set up a horizontal transfer payment fund for the protection of the Sanjiangyuan as a transfer station and reservoir for the transfer of ecological compensation funds. At the same time, dynamic ecological compensation can be implemented in the Sanjiangyuan area, linking the amount of compensation funds with the protection effect. Districts and counties with good ecological protection effect increase compensation funds, and districts and counties with poor protection effect maintain or reduce compensation funds to realize the unification of ecological compensation rights and responsibilities. Promote effective management of the executive branch.

4.4. Improve the Incentive Mechanism and Performance Evaluation System for Horizontal Transfer Payments in The Three Rivers Source Basin

The improvement of my country's fiscal system requires supporting reforms in other fields. Similarly, the improvement of my country's ecological compensation horizontal transfer payment also requires the innovation of corresponding incentive mechanisms. The focus of improving the incentive mechanism is to improve the consciousness of ecological compensation in developed areas and the enthusiasm of ecological protection and restoration in poor areas. In addition to the county-level ecological environment indicator (EI), the district and county's ecological and environmental protection capital investment and the implementation of the negative list for industrial access are used as a reference for ecological compensation incentives, and the supervision of the district and county government's ecological and environmental protection activities is strengthened, so as to improve the Incentive effect of ecological compensation transfer payment. Efforts shall be made to promote the transformation of governments in developed regions from promoting horizontal transfer to spontaneous horizontal transfer payment, and explore the establishment of a differentiated performance appraisal mechanism. By measuring the differences in the contribution of different regions in terms of ecological service functions, the effectiveness and contribution of environmental construction and ecological protection are included in the indicator system. In addition, through institutional design,

certain social security and preferential tax policies are provided for ecological functional areas, so as to increase the enthusiasm of ecological areas to provide ecological products and manage and protect the ecological environment.

To establish a performance evaluation system for horizontal transfer payment according to the main function orientation, the performance evaluation of Sanjiangyuan Nature Reserve can be divided into process performance evaluation and result performance evaluation [9]. The evaluation indicators of process performance mainly include the clarity of orientation of the horizontal transfer payment mechanism, the soundness of the mechanism, the appropriateness and timeliness of the transferred funds, the rationality of the distribution of transferred funds, and the smoothness of the horizontal flow channels; the evaluation indicators of the result performance mainly include: Including the rate of change of the quantified value of the subject function and the degree of deviation of the quantified value of the subject function [10]. Try to incorporate regional climate conditions and other indicators that are conducive to revealing the external risks faced by district and county governments into the performance evaluation system of transfer payments, change the incentive mechanism based on absolute performance, and explore the construction of an incentive evaluation system based on relative performance.

References

- [1] Leung Justin H.,Seo Hee Kwon (Samuel). How do Government Transfer Payments Affect Retail Prices and Welfare? Evidence from SNAP[M].The World Bank:2022-06-07.
- [2] Kumar Anjani,Mishra Ashok K.,Saroj Sunil,Rashid Shahidur. Government transfers, COVID-19 shock, and food insecurity: Evidence from rural households in India[J]. *Agribusiness*, 2022, 38(3).
- [3] Kim Wongi. Macroeconomic effects of government transfer payments: Evidence from Korea[J]. *Economic Modelling*, 2021, 102.
- [4] Cao Hongjie,Qi Yu,Chen Jianwei,Shao Shuai,Lin Shixian. Incentive and coordination: Ecological fiscal transfers' effects on eco-environmental quality[J]. *Environmental Impact Assessment Review*,2021,87.
- [5] Ruoxue Zou,Huafeng Lu. The Economic Influencing Factors of Local Government Transfer Payment in the Context of Province Governing County Based on the Empirical Analysis of Sichuan Province[C]//Proceedings of the 3rd International Conference on Economy,Management and Entrepreneurship (ICOEME 2020) (Advances in Economics, Business and Management Research, VOL.150)., 2020:517-523.DOI:10.26914/c.cnkihy.2020.053529.
- [6] Ronaldo José Rêgo de Araújo,Dimas Barrêto de Queiroz,Edilson Paulo,Carla Janaina Ferreira Nobre. The Relationship of Governmental Transfers Nature and the Fiscal Responsibility of Brazilian Municipal Governments[J]. *Contabilidade Gestão e Governança*,2020,23(1).
- [7] Filip Schaffitzel,Michael Jakob,Rafael Soria,Adrien Vogt-Schilb,Hauke Ward. Can government transfers make energy subsidy reform socially acceptable? A case study on Ecuador [J]. *Energy Policy*, 2020,137(C).
- [8] Jing Xu,Meng Cai,Ximing Yue. The Income Redistribution Effect of Government Transfer Programs[J]. *Social Sciences in China*,2020,41(1).
- [9] Koh Kanghyock,Yang Hyunjoo. Social Insurance in an Aging Population: Impacts of a Government Transfer Program in South Korea[J]. *Economic Development and Cultural Change*, 2019.
- [10] Ben Westmore. Do government transfers reduce poverty in China? Micro evidence from five regions[J]. *China Economic Review*,2018,51.