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THE LETTER TO EDITOR

Influence of Index on the Legal Mechanism of Ecological Environment Compensation

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The purpose of Ecological compensation mechanism is to protect the ecological environment and to promote the accord development between Human and Nature. Ecological compensation mechanism can make comprehensive use of administrative means and market means, and coordinate the interest relationship between ecological environmental protection and ecological environmental construction according to factors such as ecosystem services, ecological protection cost and ecological development opportunity. For example, the interest relationship between the upstream and downstream drainage basin, inside and outside of the nature reserve, suppliers and demanders of the mineral products, should be balanced by market economic measure. Therefore, the construction of ecological civilization and the implementation of the new era of environmental protection need to establish an ecological compensation mechanism. Garden green space system is the obbligato part of the ecological functions segment in the city. Based on the legal mechanism of ecological environment compensation, the quantitative calculation method and formula of six indicators under ecological benefits are established, so as to realize the numerical impact analysis of the legal mechanism of ecological environment compensation on the economic indicators of ecological benefits.

Ecological environment; Mechanism of the ecological compensation; Ecological benefits; Garden green space.

1 INTRODUCTION

Ecological civilization is the expression of the harmonious coexistence between Human and Nature. It reflects that the progress of Human and harmonious level of the natural environment. The core of the ecological civilization is the relationship problems of Human and Nature, which means that Human and Nature live in harmony, then the realization of the sustainable development with Human and Society. The basic connotation of the ecological civilization emphasizes that the equality of Human an Nature, harmonious coexistence, proposition of green, economic and healthy mode of production and consumption, and it would pursue that the perfect state of the harmonious share of Human and Nature, the highly advanced productivity, the integrated development of humanity and the sustainable flourish of society. From the perspective of world history, the ecological civilization is the product of the industrial civilization. It is the response and adjustment made by the industrial civilization with a clear understanding of the negative effects of resources and environment in the later period. The serious reality of the resource, ecology and environment aspect in our country already alerted us, it is no time to delay to manage the good relationship of the economy development and environmental protection. For the solid foundation of the persistent development of Chinese nation, and the lasting political stability, we must construct the ecological civilization, to ensure that the fundamental resource would be

protected necessarily, and the economy and society would develop persistently, healthily and orderly. To this end, we need to re-recognize and correctly handle the multiple relations between economic development and ecological civilization.

Ma et al. (2019) published an article in the Ekoloji Issue 107 in 2019, which is named: "Arid Areas Economic Value Estimation Model for Crop Irrigation Water based on Ecological Economic Development". It is pointed out that eco-economic development has become an important concept of regional development, and the ability to establish and improve eco-economic system is an important standard to measure regional competitiveness, attractiveness and innovation ability. The earth is the only planet in the vast universe where the human beings can live. T After millions of years of historical changes, human beings rely on the earth's natural resources to prosper, but with the progress of human civilization, many means are used to overdevelop and make unreasonable use of existing resources. The ecosystem has caused serious damage, aggravated environmental pollution and affected economic development. Therefore, it has become a common topic of global concern to strengthen environmental protection and maintain ecosystem balance. This paper aims to establish a new economic value evaluation model (EVIW model), which is to assess the economic value of water for crop irrigation, especially in acidic areas where water resources are scarce. First, EVIW model is proposed by improving the previous researchers' research model. Then, an empirical study is conducted based on the basin data to illustrate the entire estimation process. Subsequently, in order to verify the accuracy of EVIW model, the economic value of irrigation water in the study area was estimated for the second time by using the benefit sharing coefficient (BSC) method. The conclusion is that the estimation results of EVIW model are consistent with the results of traditional benefit-sharing coefficient method. The estimation results of economic value of irrigation water are highly acceptable in terms of accuracy and scientificity. This paper expounds the relationship between ecological economy and regional irrigation, and further studies are needed on the legal mechanism of ecological environment compensation.

Yao (2017) pointed out that once the ecological environment is damaged, the compensation amount for ecological environment is huge. The subject of private liability is often unable to bear the liability for compensation; At the same time, because the ecological environment damage is caused by long-term, accumulated and multifaceted reasons, usually there will be unknown subject of responsibility; In addition, in the ecological environment damage, there may also be reasons for the exemption of the liability subject. In consideration of the particularity of ecological environment damage, the traditional way of relief is not suitable for ecological environment damage, and the way of socialized relief seems to solve this dilemma. The ecological environmental damage compensation fund system is a way of socialized relief, and it is very important for our country to construct the legal system of compensation fund for ecological environmental damage.

Yin (2018) pointed out that ecological environment is the basis of human survival, ecological compensation is one of the effective measures to control water pollution, and establishing and improving the legal system of ecological compensation for water resources in the whole basin is an important measure for the country to promote the construction of ecological civilization, and also a major decision for the construction of ecological civilization society. Ecological compensation for water environment pollution has two key contents, one is damage compensation, and the other is gain compensation. On the basis of combing the water environment ecological compensation system in China, this paper proposes four principles of water environment ecological compensation and four Suggestions on the construction of laws and regulations.

The above literature is very thorough in studying the legal mechanism of ecological environment

compensation, but its influence on ecological benefit index parameters is still insufficient. This paper takes the ecology of garden green space as an example to conduct a supplementary study, hoping to provide references for ecological development.

2 IDEA DESCRIPTION

It is very necessary to establish the ecological environment compensation mechanism. The specific analysis is as follows:

2.1 To curb the deterioration of ecological environment and provide financial channels for ecological environment restoration.

Ecological environment and natural resources are the basic conditions and material basis for human survival and social and economic development. However, for a long time, people hold the wrong view that natural resources are inexhaustible and can be used freely, which leads to the predatory development of natural resources, the destruction of natural ecosystem, the serious loss of soil and water, and the desertification of land. In addition, after the founding of the People's Republic of China, a series of policy mistakes led to the population explosion in China, which greatly exceeded the carrying capacity of the natural ecosystem. Establishing ecological environment compensation mechanism is an important measure to protect ecological environment by means of law and economy. Because the ecological environmental protection has its own characteristics and difficulties, that is, the protector is often not the beneficiary. And the protector and the beneficiary are not the same group. Therefore, the users of resources objectively give certain compensation to the regions damaged by resources, which will play a positive role in getting rid of the ecological imbalance, environmental degradation and resource exhaustion in the environmentally damaged regions and actively contributing to the construction of ecological environment protection.

2.2 In China’s special national conditions, environmental fairness is required.

In the past decades, China's resource-rich western region has sacrificed its current economic development to improve the ecological environment and continuously exported resources to the eastern region, while the downstream eastern region has gained ecological benefits but not given enough compensation to the underdeveloped regions. This caused that people in the west with too much of the environmental burden and too much poverty to benefit from economic growth. The gap between the east and the west is gradually widening, and the resulting burden is borne entirely by the west, which is obviously unfair. Ecological environment deterioration and poverty are twin sisters. The poverty-stricken counties in western China account for the majority of the whole country, and many of them are ethnic minority areas, forming a vicious circle of population expansion, ecological environment deterioration and poverty. The western region is the source of China’s great rivers and the natural barrier of ecological environment. In the upstream of China's rivers and the source of sand storms, the quality of its ecological environment is directly related to the middle and lower reaches of the country and the vast region, thus affecting the country's economic and social development and ecological environmental protection. Therefore, the beneficiaries of the ecological environment should pay for the actual benefits, and the eastern region should contribute a certain proportion to the development assistance of the western region. In this way, the upper and lower reaches form a community of common interests, and through the compensation from the upper reaches to the lower reaches, reduce the economic activities in the western region that destroy the ecological environment due to poverty and living pressure, and encourage the western region to make better contributions to ecological construction and environmental protection. From this, in China's special national conditions, the establishment of ecological environment compensation mechanism is

more important to establish the ecological environment compensation mechanism, in order to achieve the ecological environment fairness requirements.

2.3 The requirement of sustainable development.

Sustainable development requires both environmental protection and economic development (Liew et al., 2018; Lam et al., 2015). Fair distribution in the sustainable development of society, advocate, to meet the basic needs of all the people of contemporary and future generations, namely generation don't harm human for their own development and the demand for the generations to come, to meet the demand conditions from the economic view of sustainable development, claims based on protecting natural system of sustained economic growth, namely human economic and social development can't go beyond the carrying capacity of resources and environment from the nature of sustainable development, advocates harmony between man and nature (Li et al. 2018). Therefore, it is the basic requirement of sustainable development strategy to establish and improve the ecological environment compensation mechanism and establish the development and utilization of natural resources within the sustainable recovery capacity of the ecosystem.

3 RESULTS

Since the ecological function of garden plants cannot be directly measured by economic figures reflecting their value, the market value of substitutes with the same use value is adopted as the shadow price of plant ecological function. The market value method firstly quantifies the effect of certain ecological benefits of the evaluated object. The economic value of ecological benefits can be determined according to the market value of these benefits, which can be expressed as:

$$L = \sum P_i \Delta R_i \tag{1}$$

In the formula: L Is the economic value of ecological effect; R_i is the market value of i effect for some ecological benefit; ΔR_i is the quantification of i effect caused by an environmental effect. According to the characteristics and main functions of garden plants, the specific functions are shown in Table 1.

Table 1 Green space ecological index basis

Green space effect	Domestic and foreign data research	Green space demand
Oxygen carbon sequestration	1hm^2 broadleaved forest can consume 1t CO_2 and release 0.73t O_2 in a day during the growing season. Adults exhale 0.75kg of CO_2 per day. On every square meter of turf, 1h can absorb 1.5g. 38g of CO_2 per person per hour: CO_2 emitted by humans, only by industrial combustion and other means	10 m^2/person approximately 25 m^2/person (turf) 100 m^3/person 250m^3/person (turf)
Dust reduction	1hm^2 green oak forest can absorb 68t dust in one year, which is calculated according to the discharge amount of urban dust (taking Beijing as an example to discharge 310,000 t smokes into the air every year). Dust retention capacity of one robinia plant per time: 2156g (calculated based on the minimum number of precipitation days and annual smoke emission in Beijing)	11 m^2/person (forest) 75 m^3/person (forest)
Poison gas SO_2	1hm^2 Lang fir absorbs SO^2 1.52kg per day on average (taking the leafy growth period in Beijing as half a year for calculation) 1hm^2 Lang fir absorbs SO_2 720kg per year and 100km^2 alfalfa can reduce atmospheric SO_2 more than 600t per year	420 m^3/person 160 m^2/person (Lang fir) 150 m^2/person (cover)
Adjust temperature and humidity	High temperature season: the temperature in the green space is 3-5℃ lower than that in the non-green space, and the relative humidity in the green space is 10%-20% higher than that in the non-green area in summer. The range of adjusting the humidity in the	According to urban topography and climate, green space should be reasonably organized and evenly distributed

	green space can reach the distance around the green space that is 10-20 times as high as the tree height	
Noise reduction	The forest belt reduces noise by 10-15dB more than the natural attenuation of the same distance in the open space; the green street reduces noise by 8-10dB more than the non-green street	According to the noise source location and noise intensity
Sterilization	1hm^2 cypress, 1 day can secrete 30g bactericidal element, can clear the bacterium of a big city; Public Spaces contain anywhere from several to 25 times more bacteria than parks。	The more green space, the more bactericidal secretion, the more fresh air
Seismic evacuation	Dongdan park 1hm^2 can shelter 2000 people; Taoran Kiosk 1hm^2 can shelter 1300 people; Temple of heaven 1hm^2 can shelter 500 people; Calculated with an average of 1500 people of 1hm^2 (210 people in the city) 1/3 in the park, 1/3 in the courtyard street, 1/3 in the playground and large open space, 0.272 hm^2 courtyard can be evacuated 1500 people.	6.6 m^2/person (garden) (maximum density 1 m^2/person) 2 m^2/person (courtyard and wayside

4 DISCUSSION

Vegetation is the primary balance between oxygen and carbon dioxide in the atmosphere. According to the chemical equation of plant photosynthesis:

CO2（264g）+H2O（108g）→glucose（180g）+O2（193g）

It is known from the equation that through photosynthesis, plants can release oxygen and sequester carbon dioxide. For every 1t of dry matter produced, carbon dioxide needs to be absorbed 1.63 t and oxygen needs to be released 1.2 t. Therefore, it is very important to study and quantify the value of carbon sequestration and oxygen release. According to the research results of related scholars on Jianfengling forest in Hainan, each hm-2 forest would sequestrate carbon 372.5 kg, oxygen would be released 941 kg. The forestation cost is 251.40 yuan, the human oxygen production cost is 100 yuan /t (China natural resources pricing research), and then the value of carbon sequestration and oxygen release per urban forest land V1=187. 75 A yuan, V1is the value of carbon sequestration and oxygen release, A is the area of city.

Garden plants can significantly block, filter and adsorb dust, thus reducing air pollution. In this study, the value assessment of dust retention function uses alternative expenditure method to estimate the dust retention of each ecological unit by the cost of dust reduction. The function value:

$$V_d = Q_d \times S \times C_d \quad (2)$$

V_d is the value of dust reduction (yuan·hm-2); Q_d is the ability of dust reduction (t·hm-2); S is area (hm2), C_d is the cost of dust reduction.

5 CONCLUSION

Therefore, it can be seen that the legal mechanism of ecological environment compensation has a positive impact on the economic indicators and parameters of garden green space, and the legal mechanism of ecological environment compensation should be gradually improved. The specific projects as follows:

5.1 Natural resources property rights system

The influence of property right system on the development, utilization and protection of natural resources is the function of market mechanism, which is a powerful promotion to the establishment of natural resources market. Property rights are the rules that define how people benefit, how they suffer, and how they are compensated for each other in economic activity. The definition of property right is the premise of ecological environment compensation, only when the property rights of the ecological environment are clear can the problem of who compensates whom be determined. Economists point out that because the property right of

public property is not clearly defined, every user will try to pursue the maximization of individual profit, leading to the excessive use of public property. The grammaticalization of environmental ownership is the basic cause of environmental problems. The way to solve this problem is to clarify the ownership of public property through legislation.

5.2 Land acquisition compensation system

Compensation for land acquisition is a big problem in the compensation mechanism of ecological environment, and has become a hot issue in China's land management and social concern. China's Land management law and Land management law implementation regulations have used a large part of the provisions on land acquisition compensation. The legislative attention to this issue also shows that China has initially formed its own characteristics of land acquisition compensation system. However, with the development of the era and the society, the existing law has shown its incompleteness, which is not enough to protect the interests of the expropriated and reflect the requirements of the market economy, and it is in urgent need of further improvement.

5.3 Resource pricing system

The theory of resource price is based on the environmental values, and it embodies the value of environmental resources from the perspective of resource utilization. It contacts the environmental values with the real economic life, although it can't fully reflect the environmental value theory, but it has considerable practical value. The fifth plenary session of the sixteenth central committee of the communist party of China clearly proposed that we should adhere to the reform direction of the socialist market economy, establish a pricing mechanism that reflects market supply and demand and resource scarcity, give greater play to the basic role of the market in resource allocation, and improve the efficiency of resource allocation.

5.4 Sewage charge system

The “pollutant discharge fee system” refers to the legal system which, according to the provisions of the environmental protection law of the People's Republic of China, imposes a certain amount of funds on the discharge of wastes into the natural environment according to the type, quantity and concentration of pollutants discharged. The pollution charge system is the embodiment of the “polluter’s burden” in the legal mechanism of ecological environment compensation, which is caused by the “external diseconomy” caused by the producer or consumer in the process of production and consumption. Pollution charge, therefore, on the one hand, able to provide the necessary compensation for ecological compensation, on the other hand, the internalization of external costs force, can be prompted producers pollution, play to the benefit of the treatment facilities, strengthening its management, saving material consumptions, reduce waste prompt consumers to take low pollution way of life and consumption, to reduce unnecessary consumption polluting activities on the environment.

5.5 Environmental tax system

The environmental tax is one of the taxes to change the priceless of environmental resource. Compensation for pollution or damage to the ecological environment that should be borne by resource developers or consumers should be balanced in the form of taxes. Environment tax has the incomparable superiority for ecological environment compensation and role of levy environment tax is conducive to realize reasonable ecology resources value compensation, optimize the allocation of resources environment tax is conducive to eliminate the less developed areas to protect the ecological environment at the expense of the development of their rights and inequality, on the result of a fair share of the cost of compensation for the ecological environment of the destroyed, and coordination of regional ecological environment by the government

compensation ability, environmental taxes ultimately conducive to curb environmental pollution, protect the ecological environment, achieve sustainable use of environmental resources. Based on these important functions, using the tax policy based on the market mechanism, levying environmental tax has become a realistic and urgent choice for China to implement the sustainable development strategy.

Through the analysis of the necessity of establishing the legal mechanism of ecological environment compensation, and taking the garden green space system as an example, this paper studies the influence of the legal mechanism of ecological environment compensation on the value of ecological benefit economic index, so as to realize the research in this paper.

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