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Analysis on the sustainable realization path of natural resource asset value

Shuiguang Chen, Zijie Lan, Shipeng Su*

School of Public Management, Fujian Agriculture and Forestry University, Fuzhou 350002, China. E-mail: shipeng@126.com

ABSTRACT

Based on Marx's labor theory of value, this paper explains the connotation of the new era of the theory of "two mountains" and its value to the assets of natural resources. The present path carries on the theoretical analysis, uses the case analysis method, the qualitative research method, analyzes the path to realize the value of natural resource assets and the problems faced in the operation process of the "forest ecological bank" operation mode, probes into the natural resources asset value sustainable realization path. The results show that the operation mode of "forest ecological bank" is based on ecological resources, through accurate investigation, on the premise of defining the property rights of ecological resources, using economic methods to calculate its value, directly or indirectly using ownership transactions, ecological service transactions, industrialization and other ways to monetize ecological products. Therefore, we should establish the property right system of market-oriented ecological factors, introduce the main body of market management to develop ecological industry, and establish a "public-private partnership" ecological product trading system, so as to promote the sustainable realization of the value of natural resources assets.

Keywords: Marx's Theory of Labor Value; Natural Resource Assets; Value Realization Path; Forest Ecological Bank

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1. Introduction

In 2021, China has won the battle against poverty in an all-around way, but there is still a long way to go to achieve a smooth transition from comprehensive poverty eradication to rural revitalization. Natural resources are important livelihood capital, mainly in the physical form of natural material and non-physical form of energy conditions, in the fixed technical support can produce economic value^[1]. With the further implementation of the strategy of rural revitalization, the rational use of natural resources can promote the transformation from ecological value to economic value. Therefore, the realization of natural resources' asset value has attracted the attention of many scholars. The existing literature mainly discusses the realization of natural resources asset value in two directions: one is to rely on government-led ecological compensation, such as financial subsidy^[2], financial transfer payment^[3], government purchase of services^[4], ecological taxes and fees^[5], forest ecological compensation^[6-8], etc. Second, market-led ecological transactions, such as forestry PPP^[9], ecological industrialization management^[10], carbon emissions trading^[11,12], emission trading^[13], water rights trading^[14,15], energy rights trading^[16] and green finance^[17], etc. From the perspective of new institutional economics, whether relying on government ecological compensation or market-led ecological transactions

can be summed up as “Pigou tax paradigm” and “Coase paradigm”, that is, through the form of government taxes and fees and property rights incentive to achieve the value of natural resources assets. It can be seen that the existing literature focuses on the realization of natural resources value, but there is little mature exploration on the realization path of natural resources asset value. The absence of property right system and value evaluation is the main bottleneck restricting the realization of the value of natural resources assets^[18]. In Xi’s important conclusion that “lucid waters and lush mountains are equal to mountains of gold and silver” (abbreviated as “Two Mountains” theory), “lucid waters and lush mountains” and “mountains of gold and silver” respectively reflect the natural and economic attributes of natural resources, and it is of great significance to the green development of China to transform “lucid waters and lush mountains” into “mountains of gold and silver” according to local conditions^[19]. However, in order to realize the transformation from “green water green mountain” to “Jinshan Bank” and the Pareto optimization of natural resource allocation, we should not only rely on the entrusted agent and market power^[20], but promote the interconnection between the government and the efficient market and explore the path to realize the value of natural resources assets in line with the local natural resources’ endowment. Therefore, taking Marx’s labor theory of value as the logical starting point, analyzing the expression of natural resources value based on the ideological connotation of Marx’s labor value theory, analyzing the interpretation of the new era of “two mountains” theory and the realization path of natural resources asset value from the perspective of Marx’s labor value theory, combined with the case of “forest ecological bank”, this paper explores the long-term mechanism of promoting the transformation from “lucid waters and lush mountains” to “mountains of gold and silver”. We should try our best to enlighten the green development of ecological resources rich areas.

2. Theoretical analysis

2.1 The value expression of natural resources:

Based on the basic connotation of Marx’s labor theory of value

Marx’s labor theory of value, founded on the basis of classical political economists Adam Smith and David Ricardo’s theory of labor value, holds that labor has the duality of abstract labor and concrete labor, and that value is indistinguishable human labor condensed in commodities, and its price is determined by the social necessary labor time of producing commodities^[21]. Concrete labor reflects the relationship between man and nature and has naturalness. Abstract labor reflects the relationship between social producers and has social nature. Starting from the characteristics of labor duality, the value of natural resources is to quantify the material social necessary labor in the ecosystem, that is, the human and material resources in the social and economic system will be invested into the ecosystem, and the natural resources in the ecosystem will be used to create the natural environment, such as the natural living space, to meet the needs of human survival and social and economic development. From the point of view of “value”, the value of natural resources is mainly manifested as the value of natural force in the natural field, the value of existence, the value of use, the value of elements, the value of exchange, the value of commodity and the value of labor in the economic field, and the value of virtual society in the social field^[22]. Due to the large number of human labor, natural resources are manifested in direct production and reproduction of labor products, circulation into the human market, natural resources continue to proliferate in the process of labor reproduction, Marx’s theory of labor value has become a solid theoretical basis for explaining the value of natural resources^[23].

2.2 New era interpretation of “Two Mountains” theory: From the perspective of Marx’s labor theory of value

Marx’s theory of labor value is a theory that determines the value of commodities by materializing the amount of social necessary labor in commodities. The most essential characteristic is whether to put into social labor or not. Therefore,

the core of using labor value theory to investigate the value of natural resources lies in judging whether natural resources condense indistinguishable human labor. Based on the basic connotation of Marx's labor theory of value, the value of natural resources has the following types: it consumes a lot of human labor in the process of protecting, repairing, and utilizing natural resources. The value of natural resources is presented in the form of ecological services, such as fresh air, a beautiful environment, and a clear water source. Natural resources have natural value. Second, with the improvement of productivity level, human beings consume labor to obtain the needed goods from nature, and the use value of natural resources comes into being; third, the exchange value or commodity value of natural resources is produced by the circulation of goods produced by natural resources into the field of human market. With the improvement of living standards, the demand for a better ecological environment is increasing day by day. Therefore, the extension of Marx's labor theory of value to the ecological field is of great benefit to solving the problems of economic development and environmental protection in real society.

Since the 1980s, China has gradually formed the thought of a socialist ecological civilization with Chinese characteristics under the guidance of Marxism and green, coordinated and sustainable development^[24]. Xi's thought of socialism with Chinese characteristics in the new era is inherited and developed according to the specific reality of China. The essence of the theory of "Two Mountains" is that the ecological advantage of natural resources can be transformed into the advantage of economic development^[25]. From the perspective of economics, the transformation process between "lucid waters and lush mountains" and "bank of golden mountains" is the deductive process of the effective transformation of scarce resources and scarce resource value. "Lucid waters and lush mountains" have economic, social, and ecological benefits. Under the support of one-fixed technology, it can be transformed into natural assets and natural capital, and capital can become the source for human beings to obtain social wealth. At the same time, "lucid

waters and lush mountains" can be used to produce green food, develop ecotourism and provide ecological services to create more value, so that "lucid waters and lush mountains" can be transformed into "mountains of gold and silver"^[26]. In this process, a series of indistinguishable human labor and consumption have been invested. The fixed amount of socially necessary labor time has become the vivid practice of "labor creates value". In the field of ecology, the thought of a socialist ecological civilization with Chinese characteristics is the cornerstone of the logical starting point of the new era of labor value theory. Among them, the theory of "Two Mountains" draws lessons from the dialectical thought of Marxism, updates people's traditional understanding of natural resources, improves the ecosystem structure, improves the ecosystem service ability and promotes the ecological integration and development of production and life under the background of increasingly tight constraints of resources and environment. It is based on the national conditions of socialism with Chinese characteristics to inherit and develop Marxist labor value theory, and it is the expansion and application of Marxist labor value theory in the ecological field.

2.3 The realization path of the value of natural resource assets: From the perspective of Marx's labor value theory

The economic value of natural resources is a form of expression of natural resources value, and it is the product of the development of human society to a definite stage. However, the economic value of natural resources can only be transformed into natural assets after putting into human labor, and then transformed into natural capital after marketization of natural assets. Under the catalysis of market mechanism, it will evolve into tradable ecological products, and take ecological products as the carrier to realize the economic value of natural resources. The ideological connotation of labor creation value extracted from Marx's labor value theory and the transformation of value into price is analyzed as a whole from the process of realizing "thrilling jump" in Marx's commodity value, which is a dialectical process from simple to complex, from abstract to

concrete^[27], and this process just deduces the transformation logic from “lucid waters and lush mountains” to “mountains of gold and silver”. Therefore, the way to realize the value of natural resource assets is to clarify property rights. On the premise, value accounting and ecological technology means are supported, the market-oriented trading platform is guaranteed, and the intrinsic value evolution characteristics of “existence value–use value–element value–exchange value^[28]” are followed, which are embodied in the capitalization of natural resources, capitalization of natural assets, transaction of natural capital and monetization of ecological products.

2.3.1 Natural resources as assets

According to Harold Demsetz, “the scarcity of resources is the root cause of the emergence of property rights”^[29]. With the decline of environmental capacity, the scarcity of natural resources is becoming more and more obvious based on the characteristics of natural attributes. Driven by the scarcity of resources, the demand for the versatility of natural resources is becoming stronger and stronger for the sake of survival rationality, and the understanding of the existing value of natural resources is also more profound. The lack of a property rights system is the fundamental reason for the externality of natural resources^[30]. The clear boundary of property rights can determine the quantity and scope of natural assets, help to evaluate and quantify the value of natural resources, and promote the externality of natural resources. Therefore, the capitalization of natural resources refers to the management of natural resources as assets. When natural resources are transformed into natural assets through clear property rights, they are put into human labor, and the existence value of natural resources is transformed into the use value of natural assets, thus realizing the evolution from natural resources management to natural asset management.

2.3.2 Capitalization of natural resources

Natural assets with clear ownership can only enter the human market and can be transformed into liquid capital under the action of the law of value.

Natural asset value accounting has become the premise of natural asset capitalization, and quantitative accounting of natural asset value has become the key. In the process of transforming natural assets into natural capital, all subjects of natural resources’ property rights change, and there are tradable property rights when the subject changes. Because of the scissors difference in the transaction price of property rights, the value of natural resources is mainly expressed in the form of “differential land rent”. Therefore, the capitalization of natural assets refers to the owners of the natural resources through the natural assets evaluation center or third-party evaluation institutions to evaluate the value of natural assets, investment, development, mortgage, human stocks, and other assets management behavior to activate natural assets, under the support of ecological technology to promote the use of natural assets into the value of natural capital factors of production, so as to realize the capitalization of natural assets.

2.3.3 Natural capital trading

The operation of natural capital makes the use value of natural assets enter the field of human production under the action of operation mechanism, combine with other factors of production and transform into specific products, change into ecological products through the change of form under the domination of market economy law, transfer the value of natural resources to ecological products, and produce exchange value (commodity value). This process realizes the transformation from the production factor value of natural capital to the exchange value of ecological products. The key to the trading ability of natural capital is the production of ecological products. As the concrete performance of the natural asset capital enters the human operation stage, when the natural resources are in the best distribution state, the capital proliferation increases with the help of the marketization mechanism capital flow, at this time the marginal output value of the natural resources can emerge, its marginal output value is the shadow price of the natural resources, realizes the natural capital proliferation.

2.3.4 Monetization of ecological products

The monetization of ecological products is to show the commodity value of ecological products in the form of price and to realize the growth of green wealth. The economic value of natural resources can be realized through market exchange, the main way is to give full play to the decisive role of the market mechanism in the allocation of natural resources, follow the principle of “beneficiary payment”, and build a bridge between “beneficiary” and “provider”, develop ecological agricultural and forestry products, environmental club products, ecological services and so on, and realize the value of natural resources through the ecological transaction and ecological consumption. At the same time, natural ecological products have the attribute of public goods, have positive externalities, and can also play a certain role in social service value.

3. Date and methods

3.1 Case introduction

In 2018, according to the work deployment of Nanping Municipal Party Committee and Municipal Government, Shunchang County, Fujian Province, set up a “forest ecological bank” platform for state-owned forest farms in Yituo County, guided by the project, to integrate and market-oriented forest resources, and to provide institutional support for the integration and development of forestry first, secondary and tertiary industries and the increase of forest farmers’ income. While exploring the transformation way between “lucid waters and lush mountains” and “mountains of gold and silver” in the whole country, Shunchang County took the lead in launching the pilot work of the “forest ecological bank”, and the pilot construction belongs to the first in China.

The “forest ecological bank” in Shunchang County is different from the commercial banks and financial institutions. It is a socialized operation platform with the participation of the government, the market, and the public. The platform mainly involves the county government, the forestry resource operation, and management center (collection and storage center, the asset evaluation center),

the forest farmers (forestry cooperatives, forestry enterprises), and the social capital side (the State Development Bank), which revolves around the front-end resource circulation. The back-end project development forms the operation mode of “decentralized input and centralized output”. Specifically, the operation mode of Shunchang County “forest ecological bank” can be roughly divided into four steps: first, forest farmers (forest cooperatives) deposit natural resources represented by forests and bamboos into the ecological bank through redemption, share cooperation, leasing and trusteeship in a single or combined form; second, forestry resource operation and management center through accurate investigation, universal confirmation, asset evaluation and forestry infrastructure construction, forest, bamboo and other resources capitalization; third, through grafting financial derivatives to promote the proliferation of forestry capital; fourth, it is to rely on the strength of expert committees, ecological companies and other professional institutions to provide raw material base services, financial services, heavy asset services, ecological services and market services through franchising or entrusted operations, so as to directly or indirectly use forest ownership transactions, ecological services transactions, industrialization and other ways to produce ecological products to achieve the value of forestry resources.

Under the guidance of the concept of ecological poverty alleviation, Shunchang County “forest ecological bank” combines ecological construction with accurate poverty alleviation around “rural revitalization” and “poverty alleviation”, especially in liberating the labor force of the old, weak, sick and disabled in rural areas and increasing the property income of poor households without working capacity^[31,32], and has achieved remarkable results in helping to win the battle against poverty. Therefore, it is of practical significance to select “forest ecological bank” for case analysis.

3.2 Research methods

From July 25 to August 1, 2019, the team conducted semi-structured interviews with the heads of forestry stations and some villagers in

Shunchang County, Fujian Province, Shunchang County Forestry Bureau, Shunchang Forest Ecological Operation Center, Yangkou Town, Pushang Town, Dagan Town, Lanxia Township and Gaoyang Township, focusing on the historical context of forestry development in Shunchang County, the operating funds and operation mode of “forest ecological bank”. In addition, in order to ensure the effectiveness of the data, the team followed the head of the Forest Ecological Operations Center by telephone in January 2021. The setting of semi-structured interview is mainly based on three aspects: first, the county level is mainly to grasp the

general situation of forestry development at the county level, and people deeply understand the historical background of the “forest ecological bank”; second, the forest ecological operation center is mainly to systematically understand the “forest ecological bank” and explore its future development direction. Third, the “forest ecological bank” was originally designed for ordinary farmers, mainly to understand the forestry station staff and ordinary farmers in the front line of forestry work on the “forest ecological bank” cognition. Finally, the interview items set up by the forest ecological bank survey are shown in **Table 1**.

Table 1. Interview item of the “forest ecological bank” survey

Interview object	Interview item
Head of County Forestry Bureau	<ol style="list-style-type: none"> 1. How is the forestry of Shunchang County developed? 2. What is the process of establishing the Forest Ecological Bank? 3. What role does the government play in the operation of the “forest ecological bank”? 4. What do you think of “forest ecological bank”? Do you think of the “forest ecological bank” can become a new model?
Head of Forest Ecological Bank	<ol style="list-style-type: none"> 1. What was the process of establishing the “forest ecological bank”? 2. How does the “forest ecological bank” work? How does it make money? 3. What effect has the “forest ecological bank” achieved, and where will it develop in the future? 4. What are the problems and obstacles encountered in the operation of the “forest ecological bank”? 5. How does the “forest ecological bank” obtain funds? Where do the funds mainly come from? What role does the government play in it?
Head of the forestry	<ol style="list-style-type: none"> 1. Do you know “forest ecological bank”? 2. Has your town transferred woodland to a “forest ecological bank”? If so, please specify. 3. What do you think of the “forest ecological bank”? Do you think the “forest ecological bank” can become a new model that can be promoted and replicated?
Ordinary farmer representative	<ol style="list-style-type: none"> 1. Do you know “forest ecological bank”? 2. Has anyone in your family or village transferred the forest land to the “forest ecological bank”? If so, please be specific. 3. What do you think of the “forest ecological bank”? Do you think the “forest ecological bank” can become a new model that can be promoted and replicated?

3.3 Analytical method

“Forest ecological bank” is the path discussion between “lucid waters and lush mountains” and “mountains of gold and silver” in Shunchang County, which is still a new thing in the area, so the research team is more about whether it is sustainable and can be replicated. In view of this, combined with the survey data, combing the relevant policy documents and mainstream media reports on “Nanping ecological bank”, the text materials, in-

terview notes, interview recordings, policy texts of Shunchang County Forestry Development and “forest ecological bank” are summarized and summarized. Based on the case analysis and qualitative research method, this paper analyzes the mode of “forest ecological bank”, the path and deficiency of realizing the value of natural resources assets, and thinks about promoting the sustainable realization of the value of natural resources assets.

4. Case analysis

4.1 “Forest ecological bank” is the main way to realize the value of natural resources assets

4.1.1 Clarifying forest land property rights, draw a clear boundary of forest rights

Combined with the reform of the rural collective property right system and the fourth national forest resources inventory, the “forest ecological bank” commissioned Fujian Forestry Exploration Institute to carry out the mapping of forestry natural resources and form a visual forestry natural resource “A Map”. In accordance with the thinking of the reform of the collective forest right system, the collective forest land is “divide the forest to the home” in the form of law, and remote sensing, geographic information system, and global positioning

system technology are used to coordinate the definition of the property right boundary of regional natural resources in the aspects of forest land type distribution, forest land right type, forest land right origin distribution, forest land tree species distribution and so on, and the forest resources in the jurisdiction are confirmed. Make clear the subject of ownership of natural resources and draw the boundary of the subject of property rights. On the basis of the definition of property rights, the management right of forest land and forest ownership is obtained through forest right redemption, forest right share cooperation, forest land lease, and forest land trusteeship (**Table 2**), and the management of the forest resources in physical form is transformed into forestry asset management in value form.

Table 2. The trading ways of forest of “Forest Eco-Bank”

Transaction mode	Scope of application
Forest tenure redemption	It is suitable for forest farmers who give up their willingness to manage forest trees. The farmers sell off the right to manage forest land and ownership of forest trees and obtain funds at one time.
Forest Share cooperation	Applicable to forest farmers, forestry enterprises or forestry cooperatives who have the will to operate jointly, they sell part of their forest rights to obtain funds, and the remaining forest rights are invested in shares in proportion, and they are jointly responsible for profits and losses.
Woodland Lease	It is suitable for forest farmers or village collectives who have idle forest land and are unwilling to manage by themselves. According to the contract, they can obtain forest land rent at one time or collect rent on a regular basis.
Woodland hosting	Applicable to forest farmers who are unwilling to give up their forest land management rights but have limited management capacity, pay management fees on a monthly basis (no need to pay for poor households), obtain part of the expected benefits from trees in advance, and share the profits proportionally after the main felling of trees.

4.1.2 Carry out forest land evaluation and calculate the value of forest land

The “forest ecological bank” integrates the resources stations, forest reform offices, forestry units and state-owned forest farms of the County Forestry Bureau to set up asset evaluation centers to employ and assist professional third-party evaluation institutions to understand the natural ecological environment according to site conditions, forest species, stand conditions and specific production conditions. The reserves of environmental and forestry resources and the expected income evaluation should provide decision support for the ownership of natural assets, the effective management of natural re-

sources and the distribution of benefits of natural resources. Actively docking property rights trading institutions such as Beijing property Exchange and Straits Equity Trading Center, grafting financial derivatives, promoting the use value of forestry assets into the field of human production, combining with other ecological elements into specific products, creating the value of factors of production of forestry capital, and promoting its value transformation through capital enrichment.

4.1.3 Grafting financial instruments to promote capital proliferation

“Forest ecological bank” set up risk prevention and control center, set up policy-oriented financing

guarantee company to provide financing guarantee service for forest farmers and forestry enterprises, and set up Nanping Rural Revitalization Fund to focus on forestry industry projects such as forest product processing and forestry quality improvement. Plan the national reserve forest to accurately enhance the PPP project, flexibly attract people to develop modern forestry with social capital, produce ecological products that can carry out market-oriented transactions, and maintain and proliferate forestry resources by means of direct or indirect use, right to use, ecological service trading, industrialization, and soon.

4.1.4 Rely on professional institutions to introduce ecological industry

“Forest ecological bank” relies on the strength of state-owned forest farms, expert committees, municipal ecological companies and other professional institutions to implement FSC forest certification to cultivate new forestry economic growth points; build Xikeng, Qi Mountain, Green Seedling Base, Guanjing Mountain, Gan Mountain, Long Mountain and other projects to guide the development of ecological industries such as health and care, cultural creativity, forest tourism and other new industries and new business type. Carry out scientific research cooperation with Nanjing Forestry University to cultivate high quality seedlings, take forest carbon sink, forest landscape service, forest management, bamboo forest management, forest tourism, forest health and forest economy as carriers, transfer the value of forestry resources to forestry ecological products, and obtain green income through ecological product trading and ecological product consumption.

4.2 Sustainability of “forest ecological bank” in realizing the value of natural resources assets

Based on the materiality of forest ecological bank trees, in the process of realizing the value of natural resources assets, its ecological ownership, easy and ecological services are formed under the condition of incomplete competition. Its transaction mode, transaction cost and transaction mode can be realized through negotiation and talks, which has a

definite reference significance for the green development of poor areas. However, due to the problems of forest land collection and storage funds, forest farmers’ participation and ecological industry guidance, the sustainable realization of the value of natural resources assets of the “forest ecological bank” is faced with selection. The war is mainly manifested in the following three aspects.

4.2.1 The source of funds for forest land collection and storage is single, and the platform is lack of stamina

The operating funds of “Forest Ecological Bank” mainly rely on the welfare effect of government financial investment and policy advantages, and its own “hematopoietic” function is not yet perfect. At the same time, the key collection and storage body of “forest ecological bank” is ecological location forest and natural broad-leaf forest. Because of the gap between the subsidy funds provided by the government and the existing forest market price, the fund gap is large, which restricts the forest land collection and storage price and storage area. In addition, due to the particularity of forestry means of production, the imbalance between the expected price of forest land, the market price of forest itself and the price of government financial subsidy is expanding, especially the forest rights owners, represented by small and medium-sized forest farmers, are more inclined to hold the mountain forest firmly in their hands in order to prevent the risk of providing for the aged, which virtually raises the expected price of forest land collection and storage. Therefore, how to support the continuously expanding collection and storage area and the expected price of forest rights owner has become the bottleneck of restricting the collection and storage of forest land, and the operation of “forest ecological bank” is insufficient.

4.2.2 The participation enthusiasm of forest farmers is not high, and the collection and storage of forest land produces island phenomenon

“Forest ecological bank” is a centralized collection and storage of fragmented and piecewise forest resources in the hands of forest farmers (for-

estry enterprises and forestry cooperatives). If forest farmers are not willing to participate in “forest ecological bank” or their enthusiasm is not high, “forest ecological bank” will become “unfounded wood”. Through the investigation of the transaction records and trading objects of the “forest ecological bank”, the collection and storage objects are mainly concentrated in the forest land resources of large forestry households, villagers’ groups and village collectives, in addition to the poor households with file cards, other retail investors do not participate in it. In the process of interview with forest farmers, it is found that some forest farmers only have conceptual understanding of “forest ecological bank”, and there is no real understanding of its operating mechanism. In addition, the production cycle of forestry is long, the future forestry risk is difficult to control, that forest land is the last guarantee of their livelihood, and dare not put forest land on the market at will. In addition, as far as ordinary forest farmers are concerned, after the reform of collective forest right system, most of the forest land is distributed in blocks, and the boundary of forest land property right is blurred. There are a lot of negotiation costs between the collection and storage threshold of “forest ecological bank” 2 hm², which leads to the low enthusiasm of participating in the forest land collection and storage of “forest ecological bank”, and the isolated island phenomenon of forest land collection and storage.

4.2.3 The main body of ecological industry is single, and the creativity of economic value of natural resources is not strong

To examine the operation mode of “forest ecological bank”, it follows the principle of “government-led, enterprise main body, farmers’ participation and market-oriented operation”, brings together the stakeholders such as government, enterprises, farmers and consumers to carry out multilateral dialogue in one field, and gives full play to the effect of “1 + 1 > 2” system innovation. In the raw material base service, financial service, heavy asset service, ecological service and market service of “forest ecological bank”, the main position of enterprises in the whole chain is becoming

more and more prominent. Therefore, we should attract more social subjects into the natural field and activate the stock resources in the ecosystem through industrial and commercial capital, increase the flow resources of the ecosystem, and provide material security for the production of ecological products. However, “forest ecological bank” relies on state-owned forest farms and municipal ecological companies to carry out ecological industrialization management after centralized integration of fragmented forest resources, which has not yet been involved by other management subjects, while some places have not yet led to human ecological industry, and the forest land resources after collection and storage have become veritable “real estate”. From the nature of the enterprise, the behavior of the existing business subject has institutional preference, and the transaction mode also has the administrative color of the planned economy era. The creativity of the economic value of natural resources is not strong, and the realization of the economic value of natural resources is thought-provoking.

4.3 Summary

“Forest ecological bank” registers forestry resources, collects and deposits forest land in the hands of forestry organizations or farmers through forest ransom, forest right share cooperation, forest land lease and forest land trusteeship, calculates forestry value by asset evaluation center, grafting financial derivatives to promote natural capital proliferation, relying on professional institutions to guide ecological industry, and realizing its economic value with ecological products as carrier. The practice of “forest ecological bank” shows that the sustainable realization of the asset value of natural resources is based on ecological resources. On the premise of defining the property rights of ecological resources, the economic method is used to calculate the value of ecological resources, and the monetization of ecological products is realized through ownership transaction, ecological service transaction, industrialization and so on. The essence of this process is the transformation process of “existence value–use value–element value–exchange value” of

natural resources. From the perspective of Marx's labor value theory, the "forest ecological bank" consumes a lot of social necessary labor time in the process of forest land resources collection and storage, capital empowerment and market-oriented operation, which has proved that forestry resources are rich in economic value. According to Marx's conclusion of "the usefulness of things", forestry resources have existing value. Through the definition of the rights of the owners of forestry resources property rights, the existing value of forestry resources is transformed into the use value of forestry assets. Under the catalysis of the market mechanism, the conversion from the use value of forestry resources to the value of factors of production leads to the production of ecological products in line with the market demand, and realizes the exchange value of forestry resources with the transaction of forest ecological products as the carrier. Price is the manifestation of value. According to the principle of "beneficiary payment", consumers have to pay a definite cost when consuming forest ecological products, which is the main way to realize the value of natural resources in the form of currency. To this end, ecological products are handed over. It is very important to perfect the market mechanism and realize the value of ecological products.

5. The path of sustainable realization of natural resource asset value

"Forest ecological bank" has effectively implemented the theory of "Two Mountains", innovatively opened the channel of "lush mountains to be mountains of gold", and promoted the transformation of the value of natural resources assets to material assets. However, in the process of value realization, it still faces the bottlenecks such as the boundary definition of natural resources property rights, the imperfect trading system of natural resources ecological products and the difficulty of guiding people by ecological industries. Therefore, under the background of realizing rural revitalization and improving ecological quality, it is of great significance to promote the realization of natural resources asset value from the aspects of market-oriented ecological factor property right system,

ecological industry introduction and ecological product trading system.

5.1 Establishing a market-oriented property right system for ecological elements

The theory of property rights holds that property rights have the functions of reducing uncertainty, externality internalization, incentive, constraint, resource allocation and income distribution. Clear natural resources property rights are the premise and basis for the smooth realization of the value of natural resources assets. Therefore, it is necessary to clarify the position of the subject of property rights of ecological elements in the process of realizing the value of natural resources assets and the relationship between responsibility and rights, such as possession, use, income and disposition, and mobilize their enthusiasm in the process of practice. At the same time, it determines the classification standard of natural resources, draws lessons from the experience of natural assets accounting in developed countries, clarifies the main body of natural resources responsibility and the evaluation subject of natural resources assets accounting results, carries out the value accounting of natural resources assets, establishes the normal dynamic monitoring system of natural resources and the evaluation mechanism of natural resources investigation and monitoring results, starts with the reform of property right system of natural resources assets, and takes the unified registration of real estate. Through "confirmation of power" to improve the security of natural resources asset property rights, establish operational and tradable ecological factor property rights system, stimulate the main body of ecological factor property rights to actively participate in the practice of ecological product market transactions, and promote the realization of natural resources asset value.

5.2 Introducing market operators to develop ecological industry

The realization of the value of ecological products is an important way to establish the long-term mechanism of the transformation from "lucid waters and lush mountains" to "mountains of

gold and silver”^[34]. Ecological products are the foothold and destination of the value of natural resources assets. Without the transaction of ecological products, the value of natural resources cannot be converted, and the production of ecological product projects depends on the injection of social capital and the marketization of enterprises. At the same time, the development of characteristic industry is closely related to the protection of regional natural environment. If there are no high-quality natural resources, ecological industrialization management will become unfounded wood; without the support of characteristic industry, it cannot produce ecological products, ecological advantages cannot be transformed into economic advantages, and natural resources can only become “real estate”. Therefore, cultivating “ecological +” new industry and new business type is an important way to solve the “resource tight spell” in natural resources rich areas, such as guiding tourism industry, health service industry and pension industry. Giving full play to the main role of enterprises in the chain of realizing the value of natural resources can not only bring rich industrial and commercial capital to make up for the shortage of funds in the supply process of natural resources ecological products, but also optimize the structure of the main body of ecological industry management, provide essential support for the supply of ecological products, and improve the efficiency of realizing the value of natural resources assets.

5.3 Establishing a “public-private partnership” trading system for ecological products

Natural resources are a kind of public goods. If there is only market-oriented operation in the process of value realization, due to the spontaneity and blindness of market mechanism, it is easy to bring “adverse selection” and “moral hazard”. Throughout the practice of ecological civilization in China, the value of ecological products is more purchased by the government, mainly ecological compensation, if only the unilateral control of the government, it will face the dilemma of single way of ecological product trading and insufficient vitality of ecological trading market. The cooperation

model between government and social capital (PPP model), as an effective way to alleviate the financial risk of local government and activate the vitality of social capital, is an important way to enhance the production capacity of ecological products and improve the service quality of ecological products. The government should actively create a fair competition market environment, strictly PPP ecological product project market quasi-human conditions, guide qualified private sector to actively participate in grassland management, watershed management, marine resources management, forestry management, national park management and other natural resources ecological product projects. Taking the “project system” as the starting point, following the principle of “one project, one policy”, innovating the PPP model, standardizing the PPP operation procedure of ecological products, perfecting the access and exit mechanism of the private sector, seeking the optimal combination of policy tools and market tools, and establishing the transaction system of “public-private partnership” ecological products.

Conflict of interest

The authors declared no conflict of interest.

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