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Summary of The Value Accounting of Ecological Products

Yanlong Shi

Xinjiang University of Political Science & Law,China
San Sebastian College-Recoletos,Philippines

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Representative e-Mail: y.shi@sscrmnl.edu.ph

ABSTRACT

The value accounting of ecological products is a concrete action to implement the harmonious coexistence between man and nature, and is an important technical basis to promote the realization of the value of ecological products. This paper systematically sorts out the background of the value of ecological products, the definition, methods and existing problems of the value accounting of ecological products at home and abroad, and puts forward the following suggestions to strengthen the accounting of theoretical methods and the value of ecological products, and promote the value accounting system of ecological products. At the same time, in the future, we should actively improve the basic theoretical framework of ecological product value accounting, and improve the basic theoretical framework of ecological product value accounting.

Keywords: *Economic Consequences, Ecological Products, The Value Accounting*

I. INTRODUCTION

The ecosystem provides human beings with biomass products such as food and raw materials necessary for life and production, and for survival and development Exhibition of natural environment conditions, cultural services to improve the quality of life and mental health. Value accounting of ecological products is an important basic work to promote the realization of ecological product value. With the acceleration of ecological civilization construction process, the concept has gradually become deepening ecological protection compensation measures, establish ecological product market mechanism, improve the ecological damage appraisal compensation system and promote ecological civilization of the important basis of performance appraisal, carry out ecological product value accounting, is beneficial to balance the relationship between economic development and ecological environment protection, really set up "green water castle peak" to "Jinshan" bridge.

Since Daily and Costanza proposed the concept of ecosystem service value accounting in 1997, foreign scholars have successively launched a series of studies on the value accounting of ecosystem services. Correspondingly, the Chinese government put forward the concept of "ecological products" for the first time in the National Main Functional Zone Plan in 2010. The connotation of this concept is essentially similar to the ecosystem services that developed countries are concerned about. Through the value of ecological products accounting, can be evaluated in the ecological product decision-making process implied or clear balance, for ecological benefits into the economic and social development evaluation system, improve the evaluation system to provide important support, also for ecological product value realization mechanism, regional ecological compensation, natural resource assets audit, natural balance sheet of the implementation of the system to provide scientific basis.

II. RESEARCH METHODS

There are many research methods at home and abroad, such as empirical analysis methods, normative research, case analysis method, questionnaire survey method, etc. Through theoretical analysis and normative research, reference to a large number of theoretical literatures on ecological product value accounting at home and abroad, and further expand and discuss on this basis, so as to use a more complete theory for research. The results show that we should master the reasonable value accounting method of ecological products, provide local enterprises and governments with ways to live harmoniously with nature, and provide a fresh and healthy environment for human being.

III. DISCUSSION

3.1 Ecological Product Value Accounting Object

The value accounting of ecological products is to integrate and quantify the ecological products in the form of their total quantity, composition, supply and demand in the form of real quantity and value quantity, based on the real statistics and reasonable evaluation of the ecological products in a certain time and region. The improvement of the

Co-responding Author: Hongmei Xie
Guangdong Business and Technology University

value accounting of ecological products is the basic condition for the realization of the value of ecological products. Under this premise, the ecological benefits should be brought into the evaluation system of economic and social development, so as to effectively promote the construction of ecological civilization.

The object of value accounting of ecological products is the final product provided by the ecosystem, that is, only the part of the ecosystem service flow that is provided in the form of the final product. Ecological product value accounting area can be the administrative area, such as province, city or county administrative region, also can be a relatively complete ecological geographical unit, such as a forest, a lake, a swamp or different scales of river basin, or composed of different regional ecosystem type, can either provided by a regional ecological product accounting, also can provide a regional ecological system type of ecological product accounting.

3.2 Accounting Method

At present, the value accounting methods of ecological products at home and abroad mainly include the equivalent factor method, functional value evaluation method, biophysical method, etc. The equivalent factor method, also known as the value coefficient method, is represented by the ecosystem service value coefficient published by Costanza et al. On this basis, Xie Highland et al. formulated the ecological service value equivalent scale of terrestrial ecosystem per unit area in China, which has exerted a great influence in the domestic research field. Functional value method mainly according to the total economic value of ecosystem services, through the data information integration, combined with the measurement model to quantify its value, this method can be classified as direct market method, display preference method and statement preference method three categories, specific valuation method including market value method, resource rent method, production function method, alternative engineering, travel cost, characteristic price method, etc. From the perspective of endowment value, biophysical method measures the value of ecosystem service by measuring the physical cost of producing an ecosystem service, mainly including material flow analysis method, energy value analysis method, ecological footprint method, etc. In addition, with the maturity of "3S" technology, foreign countries have developed various comprehensive models for ecosystem service evaluation based on spatial pattern and land use change. Typical models include comprehensive evaluation model (Invest) for ecosystem service and trade-off, Artificial intelligence model (ARIES) for environment and sustainable development, etc. Invest model is relatively mature and can be used to evaluate nearly 20 services for land and ocean; ARIES model can evaluate multiple ecosystem services with high evaluation accuracy and good development prospects. The above methods have different advantages and disadvantages: the equivalent factor method is relatively simple, but generally only suitable for large-scale accounting, and the equivalent value is based on the questionnaire, and the accuracy is questionable; the functional value evaluation method has highly flexibility, but the calculation and summary of different service indicators one by one may lead to repeated or missing calculation, and it is difficult to avoid parameter uncertainty and error; the production cost is suitable for the valuation of services without intuitive biophysics; the comprehensive model method is based on the ecological process and mechanism, which can reveal the spatial and temporal heterogeneity of ecosystem services, but is greatly restricted by the parameter data.

3.3. Problems Existing in The Value of Ecological Product Accounting

3.3.1 Accounting subjects and scope

The main reason for the difference in consensus degree is the large difference in the attributes and characteristics of ecological products themselves, and the various forms of contribution to human beings, which lead to the inconsistent understanding of the accounting scope in different systems. Material products and regulatory services with high consensus often have clear concepts and mature accounting methods, such as agricultural and forestry products, water conservation, etc.; the accounting subjects with no participation in biological production or differences in local output are usually shown in medium consensus, such as ecological energy has no clear biological.

Production effect and negative oxygen ions appear in areas with rich forest ecosystem; the low consensus items mainly involve vague living environment regulation and some ecology System intermediate service or support service, such as the nutrient cycle value mentioned in the technical specifications of Liaoning Province. The inconsistency of understanding of the scope of accounting is an important reason for the great uncertainty in the accounting results in different regions. It is not only the accounting results due to the omission of the accounting subjects, but also the deficiency of the results due to the repeated accounting of some accounting subjects.

Poor mechanism and missing data lead to the omission of some important accounting subjects that have been confirmed to contribute significantly to human well-being. In MA, ecosystem and biological like economics, biodiversity and ecosystem services intergovernmental science policy platform international mainstream ecosystem service index system, domestic accounting system does not contain or not use biophysical model calculation subjects as screening criteria, the study found that ecosystem disaster mitigation, unconventional pollutant control, non-point source pollution control and disease and insect pests control and other important subjects are missed. Ecosystem, for example, the disaster reduction service mechanism is complex, involving disaster factors, pregnancy disaster factors and bear the disaster body of multiple factors, ecosystem and natural disasters quantitative coupling relationship is not clear, lack of key data, natural and human contribution rate is difficult to define, lead to the current except flood regulation of other natural disaster regulation are not included in the existing accounting system.

3.3.2 Value and quantity pricing mechanism

On the basis of the physical quantity evaluation of ecological products, combined with certain pricing methods, the monetary value of ecological products can be obtained through calculation. The pricing methods involved in the domestic accounting technology system include direct market method, alternative market method, hypothetical market

method, value transfer method and energy value currency method. Different pricing methods have different characteristics and scope of application. It can be found that the value of ecological products cannot be accurately calculated at present, and the accounting results are generally characterized by defects such as low accuracy, poor repeatability and strong subjectivity, which make the accounting results still limited in practical application, and it is still difficult to play the role of "baton" similar to GDP in the economic field in the field of ecological protection. Specific manifestations: first, the accounting results are lack of social recognition and market recognition, due to the differences in accounting subjects and model methods, the accounting results in the same region are greatly different and difficult to verify; second, the accounting results do not have practical economic significance, and do not have the realistic basis for trading, pricing, loan and assessment; third, it is difficult to carry out independent accounting regularly, and the statistical accounting system based on statements like GDP accounting.

IV. CONCLUSION

Like accounting GDP, accounting GEP is an important direction of future development. The development of ecological product value accounting system should fully draw on the experience and practice of the development of GDP accounting system, and achieve a long-term and recent mutual promotion and combination of development process. Therefore, we should improve the value accounting system of ecological products from the following three aspects.

4.1 Improve the basic theoretical framework of the value accounting of ecological products.

The value of ecological products cannot be simply equated to the value of GEP and ecosystem services, and the relationship between the three still needs to be further clarified and explained to form a clear basic theoretical framework. First, to study and define the concept connotation and basic characteristics of ecological products, To further clarify the relationship between ecological products and ecosystem services, Clarify the relationship between the value and the price of ecological products, Distinguish the potential ecological product value from the final ecological product value; Second, the formation of a unified ecological product value accounting principle, Determine the index system based on the screening principle, Provide a scale for defining the scope of accounting; The third is to explain the quantitative path and mode of the value realization of ecological products, Focus on measuring the realization degree of ecological product value in each region from the value realization rate, conversion rate, economic contribution rate and other indicators, Lay a theoretical foundation for the evaluation of the value of ecological products.

4.2 Establish the ecological product value statistical accounting business system.

It is clearly proposed to build a statistical system for the total value of ecological products, but there are still problems such as excessive methods in the value accounting of ecological products, and it is urgent to establish a repeatable, comparable and applicable business accounting system independently carried out by local governments. First, define the scientific model of ecological product value accounting, formulate the survey list of ecological products and establish localization parameters; second, establish the replicable statistical model, fix the statistical model accounting results, set the two model accounting for the detailed investigation year, design a set of coding system and statistical statements for local operation, formulate relevant coding tables for key elements, and design a set of statistical statements to clarify the data source and statistical processing methods.

4.3 Promote the construction of the application system and mechanism of value accounting results.

The application of ecological product value accounting results has not yet established the corresponding supporting system, which needs to focus on the following aspects. First, to establish a system of regular release of accounting results, Drawing on the GDP experience, Formulate the ecological product value accounting process and result release specifications; Second, the establishment of an assessment system for realizing the value of ecological products, We will improve the performance evaluation system for ecological progress, Include the accounting results into the annual assessment; Third, we will deepen the system of government awards and subsidies based on the effectiveness of ecological protection, Explore the accounting results as a reference basis for the city and county financial awards and subsidies, Improve the vertical financial transfer payments; Is to improve the system of paid use of natural resources, Explore the establishment of a natural resource grading system based on the output of ecological products, We will establish a pricing mechanism for natural resources that reflects market supply and demand, development and protection costs, and the supply of ecological products.

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