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Research Article

Test on the Policy Effect of Natural Forest Protection Project Using Double Difference Model from the Perspective of Forestry Total Factor Productivity

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As one of the largest forestry ecological protection projects in China, the natural forest protection project has been implemented for 20 years, and great changes have taken place in the natural resources and social appearance of the forest area. This article regards the implementation of the natural forest protection project as a policy impact and makes an objective evaluation of the implementation effect of the policy through measurement and accounting. Based on the panel data of forestry total factor productivity (TFP) in 31 provinces in China from 1997 to 2018, this article uses the double difference model to investigate the impact of the policy impact of natural forest protection projects on the implementation of provincial forestry TFP from the perspective of quasinatural experiment. The results show that the natural forest protection project significantly improves the TFP of forestry in the province where the policy is implemented, and the higher the forest resource coverage, the more significant the provincial impact of policy implementation. From other influencing factors, the reduction of human investment, the rationalization of industrial structure, and the improvement of the level of scientific, technological, and economic development can also effectively mend the TFP of forestry in the region.

1. Introduction and Literature Review

According to the results of the Ninth National Forest Resources Inventory (2014–2018), China's forest area is 220 million hectares hm^2, the forest coverage rate is 22.96% [1], and the forest volume is 17.56 billion m^3, realizing the "double growth" of forest area and volume [2] in the past 30 years. China's global contribution to forest protection and afforestation has been affirmed by the FAO. Since the 1980s, China has put forward and implemented a number of ecological plans, including the project of returning farmland to forests, the construction project of a farmland shelterbelt system in the Yangtze River and Pearl River basins, and the natural forest protection project (NFPP). After the catastrophic floods in the Yangtze River Basin, Songhua River, and Nenjiang river basins in 1998, China decided to carry out pilot projects of NFPP in key state-owned forest areas in 12 provinces (autonomous regions and cities) such as Yunnan. In 2000, the execution plan of NFPP in the upper reaches of the Yangtze River and the upper and middle reaches of the Yellow River was approved and implemented by the government, and then the implementation plan of NFPP in key state-owned forest areas such as the northeast and Inner Mongolia was issued. So far, NFPP has been implemented in key forest areas of 17 provinces (autonomous regions and cities) in China, including Yunnan, Sichuan Guizhou, Chongqing, Hubei and Tibet, Shaanxi, Gansu, Qinghai, Ningxia, Inner Mongolia, Shanxi and Henan in the upper and middle reaches of the Yellow River, and Jilin, Heilongjiang, Hainan, and Xinjiang in Northeast China. The execution of NFPP is aimed at the deterioration of the ecological environment caused by excessive consumption of natural forest resources in China for a long time. The government has made major decisions from the perspective of social and economic sustainable development strategy [3]. As the largest forestry ecological protection project in China, the NFPP has been implemented for 20 years. The total investment of the government has exceeded 400 billion yuan [4], and great changes have been brought to pass in the natural resources and social outlook of the forest area.

Now, the first phase of the NFPP has been successfully completed. As the second phase of the project enters a critical period, there are many problems to be solved around the ecological protection project: how to objectively evaluate the execution effect of NFPP? If the implementation effect of the ecological protection project is significant, what influencing factors have a significant impact on it? Previous studies concentrate on the following three aspects: the first is a summary of the practice of natural forest protection engineering, which includes the implementation means and achievements of natural forest protection engineering. For example, Chen et al. [5] showed the time distribution and researched hotspot evolution of the natural forest protection engineering research field by drawing a visual knowledge map and revealed the overall context of natural forest protection engineering research in China; Cao et al. [6] systematically analyzed the main characteristics and methods of benefit evaluation of natural forest protection projects by combining the research literature on benefit evaluation of natural forest protection projects in China. The second is the research on the performance and value of NFPP. For example, Qin and Zhang [7] used the fuzzy comprehensive evaluation method to comprehensively evaluate the performance of phase II policy execution of NFPP in the Yichun forest region by constructing the comprehensive evaluation index system of policy implementation performance of NFPP; Cui et al. [8] used the relevant data and existing achievements of the natural conservation project in Jingbian County to construct the forest ecosystem service function evaluation index system and evaluate the forest ecosystem service function value of the natural conservation project in Jingbian County. The third is the research on the relevant impact of the natural protection project. For example, Zang et al. [9] used the panel data of 11 provinces in the west to study the impact of project construction on farmers' income using panel vector autoregression and impulse response analysis; Zhai et al. [10] used the forestry industry data of state-owned forest areas in Heilongjiang Province to analyze the impact of the execution of NFPP on the overall structure change of forestry industry in state-owned forest areas. It can be seen that most of the existing literature has focused on qualitative evaluation and analysis of NFPP through literature induction and sorting, there is a lack of quantitative evaluation based on quantitative accounting, and the research objects or panel data are mostly concentrated in natural forest protection projects in the west, northeast, and other regions, There are few studies on the evaluation of the implementation effect of the national natural forest protection project policy, especially the combination with forestry total factor productivity (TFP).

Therefore, this thesis attempts to use the multistage double difference method (did), use China's provincial panel data from 1997 to 2018, and from the perspective of forestry total factor productivity, regard the execution of NFPP as a policy impact, evaluate the implementation effect of the policy, and provide a reference for China's forest resources management and ecological resources protection.

2. Methods and Materials

2.1. Model Setting and Method Selection. For studying the policy effect of natural forest protection projects on forestry total factor productivity, this thesis selects the double difference method (DID) to verify the policy implementation areas. The application basis of the double difference model is to accurately divide the observation samples into the experimental group and the control group. In this article, the provinces implementing the natural forest protection project are selected as the "experimental group" and other provinces as the corresponding "control group." The DID regression equation is set as follows:

$$y_{it} = \alpha + \beta_1 d_i d_t + \beta_2 d_i + \beta_3 d_t + \mu_{it}. \tag{1}$$

Among the explanatory variables of the above formula, set the policy influence variable as $y_{it;}$; the observation group is d representing the experimental group and the control group, respectively. The year of observation is d_t; μ_{it} is the residual term. On the premise of referring to relevant research, this article adds some control variables to the original basic model. The expanded DID equation is as follows:

$$\begin{aligned} Y_{pt} = {} & \alpha + \beta_1 \mathrm{Treat}_{pt} \times \mathrm{Year}_{pt} + \beta_2 \mathrm{Treat}_{pt} + \beta_3 \mathrm{Year}_{pt} \\ & + \delta X_{pt} + \gamma_p + \eta_t + \mu_{pt}. \end{aligned} \tag{2}$$

In the equation, the subscript p represents the province and t represents the observation year. In the assignment Treat_{pt}, 17 provinces or cities implementing ecological protection policies, including Gansu, Guizhou, and Chongqing, are experimental group 1, and other regions are the control group 0. Year_{pt} is the implementation year of the natural protection project, and the value assigned in 1998 and later is 1, and the other is 0; X_{pt} is the control variable; γ_p is the regional fixed effect; η_t is the year fixed effect; μ_{pt} is a random disturbance term. In equation (2), β_1 is the key concern coefficient; $\mathrm{Treat}_{pt} \times \mathrm{Year}_{pt}$, which is the multiplication variable reflecting the net effect of the policy. Secondly, parameterβ_2 represents the time change of target variables between the experimental group and the control group if there is no natural forest protection engineering policy, and parameterβ_3 represents the difference between the experimental group and the control group that does not change with time. Equation (2) includes regional dummy variables γ_p and year dummy variables η_t [11].

2.2. Index Selection and Data Source. The explanatory variable of this thesis is to measure the TFP of 31 provincial forestries in China through the Malmquist index DEA model with dynamic change in total factor productivity. Malmquist index takes t period as the base period, and the formula is as follows:

Table 1: Malmquist index and decomposition of average TFP of forestry in 31 provinces in China during 1997~2018.

Region	EFFCH	TECHCH	PECH	SECH	TFP
Shanxi	1.015	1.078	1.007	1.003	1.090
Inner Mongolia	1.046	1.019	1.000	1.046	1.052
Jilin	1.000	1.007	1.000	1.000	1.007
Heilongjiang	1.057	0.951	1.000	1.057	0.999
Henan	0.993	0.978	1.000	0.992	0.971
Hubei	1.014	1.015	0.996	1.018	1.025
Hainan	1.000	1.125	1.000	1.000	1.125
Chongqing	1.000	1.086	1.000	1.000	1.086
Sichuan	1.077	1.050	1.004	1.078	1.126
Guizhou	1.012	1.028	1.005	1.002	1.040
Yunnan	1.021	1.010	1.001	1.020	1.008
Xizang	1.000	1.004	1.000	1.000	1.004
Shanxi	0.981	0.980	0.994	0.983	0.948
Gansu	1.013	0.997	0.994	1.024	1.008
Qinghan	0.998	1.015	1.000	0.998	1.010
Ningxia	1.016	1.020	0.999	1.018	1.045
Xinjiang	1.010	1.041	1.003	1.008	1.051
Beijing	0.994	1.047	1.000	0.994	1.040
Tianjin	1.000	1.019	1.000	1.000	1.019
Hebei	1.001	1.042	1.000	1.001	1.042
Liaoning	1.007	1.007	1.004	0.997	1.003
Shanghai	1.000	1.046	1.000	1.000	1.046
Jiangsu	1.001	1.105	1.000	1.001	1.107
Zhejiang	1.000	1.161	1.000	1.000	1.161
Anhui	1.011	0.945	1.001	1.009	0.953
Fujian	1.008	1.079	1.000	1.008	1.080
Jiangxi	0.998	1.002	1.000	0.998	0.998
Shandong	1.000	1.040	1.000	1.000	1.040
Hunan	1.049	1.004	1.007	1.032	1.057
Guangdong	1.030	1.116	1.001	1.028	1.140
Guangxi	1.032	1.043	1.003	1.037	1.068
Average	1.012	1.034	1.001	1.011	1.043

Note. According to deap2 1, the software processing results are calculated according to the annual average.

$$\begin{aligned}\mathrm{MALM}_{v,t}^{t,t+1}\left(x^{t+1}, y^{t+1}, x^{t}, y^{t}\right) &= \frac{D_v^{t+1}\left(x^{t+1}, y^{t+1}\right)}{D_v^{t}\left(x^{t}, y^{t}\right)} \times \left[\frac{D_v^{t}\left(x^{t}, y^{t}\right)}{D_c^{t}\left(x^{t}, y^{t}\right)} \cdot \frac{D_c^{t+1}\left(x^{t+1}, y^{t+1}\right)}{D_v^{t+1}\left(x^{t+1}, y^{t+1}\right)}\right] \times \left[\frac{D_c^{t}\left(x^{t+1}, y^{t+1}\right)}{D_c^{t+1}\left(x^{t+1}, y^{t+1}\right)} \cdot \frac{D_c^{t}\left(x^{t}, y^{t}\right)}{D_c^{t+1}\left(x^{t}, y^{t}\right)}\right], \\ &= \mathrm{PECH}^{t,t+1} \times \mathrm{SECH}^{t,t+1} \times \mathrm{TECHCH}^{t,t+1}, \\ &= \mathrm{EFFCH}^{t,t+1} \times \mathrm{TECHCH}^{t,t+1}.\end{aligned} \tag{3}$$

In the above formula, MALM is the TFP of forestry from t to $t+1$, PECH is the pure technical efficiency change index from t to $t+1$, SECH is the scale efficiency change index from t to $t+1$, TECHCH is the technical progress change index from t to $t+1$, and EFFCH is the technical efficiency change index from t to $t+1$. Moreover, x^t and x^{t+1} are the input vectors of units from t to $t+1$; y^t and y^{t+1} are the output vectors of units from t to $t+1$, respectively. D^t (x^t, y^t) and D^{t+1} (x^{t+1}, y^{t+1}) are the reference distance functions based on the technologies in T and $T+1$, respectively. In the above formula, the subscript v is the assumption of variable returns to scale and C is the assumption of constant returns to scale. The calculation results are shown in Table 1.

After referring to the relevant research results, this thesis selects a series of control variables to determine the economic development level, urbanization level, opening-up level, scientific and technological development level, industrial modernization level, government intervention level, and natural disasters based on the three dimensions of natural forest protection project implementation system, management, and environment, taking into account the availability of data indicators, forestry human capital level, and other variables. The variable value is determined as the calculated ratio value. The logarithm of regional per capita GDP is used to represent the level of economic development, the urbanization rate of the permanent urban population in

Table 2: Descriptive statistics of samples during 1997~2018.

Variable	Mean value	SD	Minimum	Maximum	Sample capacity
Forestry TFP	1.0435	0.2558	0.3770	2.2530	651
Logarithm of regional per capita GDP	0.7296	0.9034	0.4271	2.6405	651
Population urbanization rate	0.4794	0.1627	0.1404	0.8961	651
Proportion of import and export trade volume	0.2928	0.3676	0.0168	1.7215	651
Investment in research and experimental development	223.4371	383.5977	0.1000	2,704.700	651
Proportion of output value of secondary and tertiary industries	0.4084	0.2351	0.0152	0.9521	651
Proportion of government supported investment	0.6422	0.2542	0.0691	1.0000	651
Area logarithm of forest diseases and insect pests	12.3041	1.1187	8.5839	14.5144	651
Average annual salary of on-the-job employees	2.7144	2.5151	0.3238	17.6654	651

Table 3: Regression results.

Variable	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
DID	0.1057**	0.0892**	0.0866**	0.0882**	0.0877**
	(0.0447)	(0.0431)	(0.0420)	(0.0410)	(0.0410)
Industrial structure		0.1272**	0.1275**	0.1206*	0.1149*
		(0.0616)	(0.0617)	(0.0625)	(0.0667)
lnpergdp		0.1699*	0.1699*	0.1534	0.1592
		(0.0945)	(0.0937)	(0.1003)	(0.1000)
RD		−0.0001*	−0.0001*	−0.0001*	−0.0001*
		(0.0000)	(0.0000)	(0.0000)	(0.0000)
Wage		−0.0155**	−0.0154**	−0.0150**	−0.0146**
		(0.0062)	(0.0062)	(0.0061)	(0.0062)
Urban-rate		0.0177	0.0319	0.0431	0.0309
		(0.2608)	(0.2850)	(0.2851)	(0.2793)
Trade-rate			−0.0243	−0.0441	−0.0449
			(0.0865)	(0.0868)	(0.0870)
Government intervention				−0.0542	−0.0535
				(0.0745)	(0.0745)
Natural disaster					−0.0103
					(0.0289)
_cons	1.0038***	1.0548***	1.0557***	1.0741***	1.2040***
	(0.0361)	(0.0934)	(0.0911)	(0.0950)	(0.3637)
R^2	0.2008	0.2191	0.2192	0.2203	0.2204
N	651	651	651	651	651

Standard errors in parentheses $^{*}p < 0.1$, $^{**}p < 0.05$, $^{***}p < 0.01$.

the proportion of the total population is used to measure the level of urbanization, the proportion of import and export trade represents the degree of opening to the outside world, the investment of research and experimental development funds represents the level of scientific and technological development, and forestry is the second. The proportion of tertiary industry in the total output value of the forestry industry represents the industrial structure, the proportion of central government investment in the total forestry investment represents the degree of government intervention, the area of forest diseases and pests represents the situation of natural disasters, and the average annual salary of on-the-job employees represents the investment level of forestry human capital. The data are mainly from the China Urban Statistical Yearbook, forestry statistical yearbook, and database of the National Bureau of Statistics from 1998 to 2018. In this article, a total of 5859 samples from 31 provincial regions in China from 1998 to 2018 are selected for empirical verification; the descriptive statistics of specific variables are shown in Table 2.

3. Empirical Results

3.1. Empirical Results and Differential Analysis. In this article, control variables are gradually added to the model calculation to investigate the net effect of NFPP policies; the estimated results are shown in Table 3. After the gradual addition of control variables such as the implementation system, management, and environment of NFPP, the coefficient symbol and significance of explanatory variables have not changed essentially, indicating that the estimation results are stable. Because the empirical results are between 0.0866 and 0.1057, which is significant at the confidence level of 5%, they indicate that the execution of NFPP has significantly improved the total factor production efficiency of forestry in 17 provincial areas, such as Shanxi, Inner Mongolia, and Jilin. Among the control variables affecting the productivity improvement of natural forest protection project, industrial structure, human capital, scientific and technological development level, and economic development level have a significant impact. Among them, the

Table 4: Heterogeneity analysis and grouping regression results of forest resource coverage.

Variable	Heterogeneity analysis	Test group	Test group	Control group	Control group
DID	0.1175**	0.1505**	0.1175*	0.1068*	0.0904*
	−0.0461	−0.0586	−0.0577	−0.0704	−0.063
did * minor	0.0883*				
	−0.0951				
Structure	0.1107		0.1793*		−0.0068
	−0.0674		−0.0956		−0.1221
lnpergdp	0.1518		0.2704*		0.0234
	−0.1003		−0.15		−0.1101
RD	−0.0001*		0		−0.0002*
	0		−0.0001		−0.0001
Wage	−0.0147**		−0.0162		−0.0108
	−0.0061		−0.0099		−0.0186
Urban-rate	0.0569		−0.376		0.5904
	−0.2869		−0.4646		−0.4866
Trade-rate	−0.0442		0.0393		−0.3076
	−0.0864		−0.1008		−0.2237
Gov-invest	−0.053		0.0521		−0.1498
	−0.0752		−0.0841		−0.1306
lnarea	−0.0131		−0.0383		0.0251
	−0.0291		−0.0401		−0.0528
_cons	1.2256***	0.9264***	1.5644***	1.0863***	0.7535
	−0.3605	−0.0463	−0.5066	−0.0547	−0.651
R^2	0.221	0.2009	0.2321	0.2404	0.2647
N	651	315	315	336	336

confidence level of human capital investment is significant at 5%, and the confidence level of industrial structure, science and technology, and economic development is significant at 10%. The results show that the degree of human capital investment is the most significant among the control variables, which is mainly due to the significant improvement of per capital production efficiency with the improvement of scientific and technological development levels and the increase of capital investment in natural forest protection projects, which directly promotes the improvement of the whole forestry production factors. On the other hand, the improvement of the level of economic development in forest areas has led to a rise in wage income and the increase in per capita labor cost, which has also prompted relevant enterprises and business entities to improve their management level and realize staff reduction and efficiency. At the same time, the improvement of industrial structure, science and technology, and economic development level offset the impact of the prohibition of commercial logging on the income of forestry enterprises to a certain extent, opened up new financial resources, and provided financial support, material basis and scientific and technological guarantee for improving forestry TFP. Compared with human capital, industrial structure, scientific and technological development level, and economic development level, the level of urbanization, the degree of opening to the outside world, government intervention, and natural disasters have no significant impact on the total factor production efficiency of forestry. From the viewpoint of the characteristics of regional economic structure, the implementation of natural forest protection projects has been accelerated, and the proportion of tertiary industry has increased. However, due to the limitations of forest climate, land, and other resources and the regulation of relevant laws and regulations such as the forest law, the proportion of primary industry has not been high in history, and the proportion of the agricultural population is relatively low. The execution of the NFPP has brought about a very limited space for the transformation of the agricultural population into the urban population, which is not enough to constitute a significant impact. Similarly, since the reform and development, China's imports of forest products such as timber have increased year by year, but the cross-border flow of production factors such as forestry-related funds, labor, and science and technology is not significant. The change of opening-up degree is mainly affected by the endogenous economic growth and external trade environment of forest areas and is not highly related to the TFP of forestry. Most of the areas where the natural forest protection project is implemented are state-owned forest areas, and the degree of government intervention has been relatively high, and the policy implementation has not significantly improved the level of government intervention. The execution of NFPP increases the government's investment in forest development, but a considerable proportion of the funds is used for consumption and guarantee expenditure, which is not significantly affected by the improvement of the forestry management level.

3.2. Grouping Verification Results and Differential Analysis. For the sake of further studying the efficiency of resource allocation and the action mechanism of influencing factors in the execution of NFPP, the variables are grouped again in this article. First, 31 provinces in China are ranked according to the average annual forest coverage from 1997 to 2018, and then the top 15 provincial regions with forest coverage and natural forest protection projects, namely, Hainan, Yunnan, Heilongjiang, Jilin, Shaanxi, Hubei, Sichuan, and Chongqing, are divided into the experimental group. The average forest coverage rate in the past few years did not rank among the top 15 in China, and the provincial areas implementing the natural forest protection project, namely, Guizhou, Inner Mongolia, Henan, Shanxi, Tibet, Ningxia, Qinghai, Xinjiang, and Gansu, were used as the control group. The heterogeneity analysis was carried out for the top 15 provincial areas with forest coverage, i.e., the experimental group (see Table 4). The regression results show that the high forest resource coverage and natural forest protection project have a useful impact on the TFP of forestry in this area, and the impact of policy implementation is more significant.

$$\begin{aligned}\text{tfpch}_{it} = \beta_0 + \beta_1\text{did}_{it} + \beta_2\text{did}_{it} * \text{minor}_i + \beta_3\text{minor}_t \\ + \beta_4\text{control}_{it} + \eta_i + \gamma_t + \varepsilon_{it}.\end{aligned} \tag{4}$$

In the formula, minor_i is a dummy variable. If i province ranks among the top 15 forest resources, $\text{minor}_i = 1\text{minor}_i = 1$; otherwise, it is 0.

Forest coverage rate is an important reference index to reflect the richness of forest resources. The impact of NFPP on forestry TFP is significantly positively correlated with forest coverage rate, indicating that after the implementation of the policy, the forest volume, area, and coverage rate in the area are significantly improved, and the forest structure tends to be more reasonable and the forest quality is significantly improved. At the same time, the NFPP has invested huge funds to significantly strengthen the implementation of policies and the construction of provincial forest ecosystems, wetland ecosystems, desert ecosystems, and biodiversity protection and promoted the coordinated development of forest resources and forestry industry in the region.

4. Conclusions and Policy Implications

4.1. Conclusion. Taking the Malmquist index of forestry TFP in 31 provinces in China as the explanatory variable, based on dimensions of policy management and the environment of the execution of NFPP, this article regards the execution of NFPP as a policy impact and calculates and analyzes the provinces with and without policy execution through DID model. The results show that the execution of NFPP has a significant impact on forestry TFP as a whole. The reduction of human investment, the rationalization of industrial structure, the improvement of science and technology investment, and the level of economic development can effectively improve the allocation efficiency of factor resources among forestry production, while the improvements of urbanization level and opening-up, government intervention, and natural disasters have no significant impact on the efficiency of forestry total factor production. Similarly, in areas with high forest coverage, the impact of NFPP on the improvement of forestry total factor productivity is more significant.

4.2. Policy Implications

(1) Establish scientific natural forest protection and restoration system to protect natural forests in an all-around way. The government should increase the support for infrastructure construction in large forest areas. The construction of infrastructures such as power grid and drinking water safety and the housing of management and protection stations will be included in the construction planning and overall arrangement of the superior government, and the roads in state-owned forest areas will be included in the relevant highway network planning according to their attributes. Forestry management departments should actively fill the gap of forest tending funds, appropriately raise the standard of forest tending subsidies, gradually improve the quality of forest resources, and speed up the transformation of low-quality forest resources by expanding the scale and scope of forest tending subsidies.

(2) Actively cultivate and expand the forestry scientific research team and accelerate the transformation of forestry scientific and technological achievements. Build and cultivate a professional forestry technology application and promotion team, apply modern information technology and media channels, do a good job in business training and information exchange, and help grass-roots technicians master a variety of technologies and equipment. Scientifically formulate talent training plans, innovate talent use mechanisms, continue to carry out professional and technical training, and cultivate a group of high-quality forestry engineering managers, high-level scientific researchers, high-level technicians, and high skilled industrial workers, so as to ensure the universal application of forestry digital platform, the continuous improvement of scientific and technological innovation drive, constantly make the team of engineering managers better, and strengthen the talent guarantee for forestry development.

(3) The government should attach great importance to the ecological protection of forest resources and improve the regional forest coverage. First, comprehensively summarize the implementation experience of natural forest protection projects, appropriately expand the scope of project implementation, strengthen management, protection, and law enforcement, and take effective measures to protect natural forests. Second, strengthen the management of artificial forest closure, improve the canopy density of forest land, improve biodiversity, and strengthen the transformation of degraded forest stands. Third, strictly manage forest resources according to laws and regulations, bring the forest land managed by nonforestry departments into the statistical management of forest resources, and strengthen the supervision of forest land to ensure that the area of forest land only increases but not decreases. Focus on encouraging the development of forestry ecological products. Protect forestry ecological

diversity, carry out the overall development of "landscape, forest, field, lake, and grass," enrich the supply form of forest ecological products, and improve the development and utilization efficiency of forest ecological products.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that there are no conflicts of interest regarding the publication of this article.

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References

[1] J. Wang, X. Wang, and J. Wan, *Environmental Strategy and Planning in China*, Springer Science and Business Media LLC, Berlin, Germany, 2022.
[2] X. Wang, "China's forest coverage 22.96%," *Green China*, no. 12, pp. 54–57, 2019.
[3] M. Wang, "Significance of wood inspection to "natural conservation project"," *Rural practical science and technology information*, no. 5, p. 33, 2013.
[4] G. Geng, "Natural Conservation Project: investment of 400 billion yuan in exchange for 275 million mu of public welfare forest," *Green China*, no. 8, pp. 31–34, 2019.
[5] L. Chen, Y. Cao, Z. Zhu, and L. Su, "Knowledge map analysis of natural forest protection engineering research in China," *Journal of Agriculture and Forestry Economics and Management*, vol. 14, no. 6, pp. 622–629, 2015.
[6] Y. Cao, X. Huang, and Z. Zhu, "Review on benefit evaluation of natural forest resources protection projects in China," *Ecological Economy*, vol. 34, no. 1, pp. 107–111, 2018.
[7] L. Qin and M. Zhang, "Empirical analysis on the implementation performance of phase II policy of natural gas protection project," *Forestry Economic Issues*, vol. 41, no. 5, pp. 455–463, 2021.
[8] F. Cui, L. Zhi, and Y. Xie, "Value evaluation of forest ecosystem service function of natural conservation project in Jingbian, Shaanxi," *Journal of Southwest Forestry University*, vol. 37, no. 4, pp. 58–66, 2017.
[9] L. Zang, "An empirical analysis of the impact of the western natural protection project on Farmers' income," *Journal of Agriculture and Forestry Economics and Management*, vol. 13, no. 2, pp. 201–209, 2014.
[10] X. Zhai, H. Wang, and H. Lin, "Study on the impact of natural conservation project on the change of forestry industrial structure in state-owned forest areas," *Forestry Economic Issues*, vol. 40, no. 6, pp. 609–617, 2020.
[11] Y. Wu, L. Chen, and B. Zhou, "Has the overall urban-rural reform improved the efficiency of total factor allocation in Chengdu and Chongqing—— double difference model based on DEA and did," *Resource Development and Market*, vol. 35, no. 6, pp. 769–775, 2019.