

Study on the Outsourcing Choice of Farmers' Forest Service based on the Data Analysis of Forest Agriculture Survey in Fujian, China

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Abstract. The construction of ecological civilization is one of the "the five-pronged approach to building socialism with Chinese characteristics" in China. In order to unswervingly take the road of green sustainable development, China must improve the quality of forests, especially pay attention to the development of plantations. It is one of the effective ways to promote the development of plantation to realize the division of Forestry labor and cultivate various specialized market-oriented service organizations. At present, the division of labor of peasant households is mainly affected by peasant households' endowment, forest land characteristics and management forms. The development of forestry service organizations in different regions has its own characteristics. Strengthening the construction of specialized forestry service market system and stimulating farmers' enthusiasm for forestry service outsourcing are of great significance to the construction of ecological civilization in China.

Keywords: Outsourcing choice, forest agriculture survey, farmers' forest service.

1. Situation of Forest Development Level in China

Since the 18th National Congress, the CPC Central Committee with Xi Jinping as its core has attached great importance to the construction of ecological civilization and emphasized the importance of forestry development for the construction of ecological civilization. However, we must pay attention to the quality of forest in China. There is still a big gap between China's forest resources and the world's forestry development. According to the results of China's eighth forest inventory, the forest quality in China shows a decline in tree quality and a decrease in suitable forest land. The average DBH of Chinese forest decreased from 14.1 cm in 1973 to 13.6 cm in 2013. In recent years, due to the limitation of logging indicators, a large number of high-quality forest resources have been preferentially cut down, thinning and selective cutting have been reduced, and the overall quality of forests has declined. The suitable woodland ranges from 7793 Mu to 3958 mu, providing less and less area for planting. Per capita forest area is 0.15 hm², equivalent to one quarter of the world. The per capita forest stock is 10.98 m³, which is equivalent to 14% of the world's per capita. It is urgent to improve China's forest quality. In view of forestry development, General Secretary Xi Jinping has repeatedly stressed that "we should focus on improving forest quality, giving priority to protection, giving priority to natural restoration, attaching equal importance to quantity and quality, giving priority to quality, and Closure afforestation is combined with artificial afforestation." In the process of China's ecological civilization construction, it is not only necessary for the people to gradually raise their awareness of ecological protection, but also for artificial afforestation aiming at the past phenomenon of indiscriminate felling and abuse. From the results of forest resources inventory, the proportion of plantation area in China increased from 16.2% in the first inventory to 36% in the eighth inventory, and the area of plantation accounted for more than one third of the total forest area, but the stock was only 17%. From this point of view, there is still much room for improvement in the management level of plantation.

After the collective forest right system reform of "defining ownership, liberalizing management rights, implementing disposal rights and guaranteeing income rights", most of China's forestry production is mainly managed by small farmers. In the monitoring survey of forestry reform in Fujian Province, it is found that the main source of income of farmers in most forest areas is still obtained through part-time business. Although farmers occupy forest land, they have a long the characteristics

of forest growth determine that the forestry production cycle is longer. they do not "rely on mountains to eat mountains". Farmers will have two or three forestation cycles with their own forest land as the main factor of production in their whole life. It is difficult for farmers to raise the level of forestation through "learning by doing", so the overall development level of plantation in China will be relatively weak. In 2018, the strategy of Rural Revitalization clearly put forward: "cultivate various specialized market-oriented service organizations, promote the whole process of agricultural production and social services, and help small farmers to save costs and increase efficiency." Through the introduction of specialized market service organizations, professional people do professional things to achieve scientific and efficient forest management. It will be an important channel to enhance forest management in China. In 2018, the Fujian Forestry Reform Monitoring Group launched a field survey for the forest service organizations.

2. Situation of Development of Operational Forestry Service Organizations

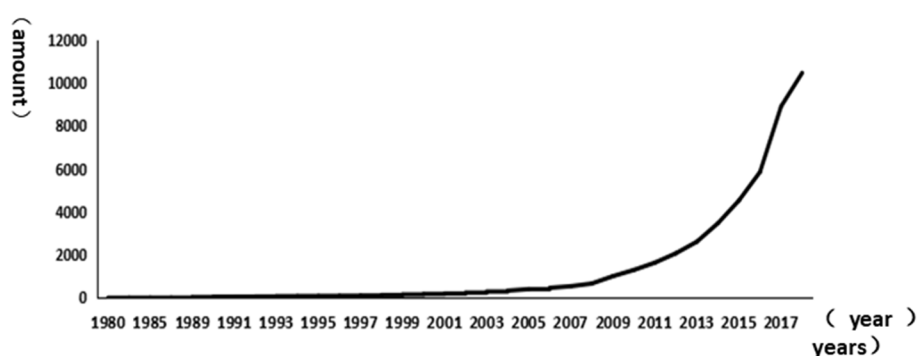


Fig 1. The number of forest management Companies in Fujian Province

Since 2003, Fujian Province began to explore the reform of collective forest right system, forest production activities in Fujian Province have become active. Since 2003, the number of companies specializing in forest management services in Fujian Province has increased significantly. In recent years, along with the government's increasing emphasis on ecological environment protection, the market demand for forest services has been increasing, and the number of forest companies has increased instead of decreasing. Each business entity provides productive services in the production links of afforestation, tending and logging according to its own business ability. At present, there are nearly 7000 business service organizations engaged in afforestation services in Fujian Province, and only 200 are relatively less engaged in forest tending. Enterprise types include the following:

First, the joint stock company system. The biggest characteristic of such enterprises in the market is that they are large-scale, highly mechanized and have specialized staff and perfect management. The business content and service scope of business registration are relatively wide. At present, the income of such companies mainly comes from municipal greening and other businesses. The number of service organizations of this type is the highest in Xiamen, Fujian Province, reaching 1100. Zhangzhou, which mainly produces flowers, and Longyan, where capital activity is not high, have fewer joint-stock companies operating forest service organizations in these two areas.

Second, Cooperatives. The forest management service organizations of cooperatives mainly meet the needs of local forest management production. Cooperatives are usually organized in groups of villagers. In areas where the reform of collective forest right system is relatively active, farmers can own their own property rights of forest land. In order to achieve large-scale management, they will choose capital, forest land, technology and other elements to establish cooperatives. Members usually work together to complete the forestation activities of the members of the cooperative. Sanming City, Fujian Province, is one of the most active areas in the reform of collective forest rights system. Sanming area is rich in forest resources, and farmers are highly motivated to manage forests. At present, nearly half of the forestry cooperatives in Fujian Province come from Sanming City.

Third, the personal service team. This kind of service organization usually has a leader with strong behavior ability who is responsible for the daily operation of the whole service organization. Members of the service team usually work part-time in forestry service production activities and work at home when they have no tasks. This service team is engaged in a "small and complete" service, mainly to meet farmers' simple forestry production activities. In Longyan and Sanming areas of Fujian Province, the number of individual service organizations is the largest and the most active. It can be seen that the reform of collective forest right system is first tried in the region, and the production and operation activities of individuals or small collectives become frequent.

3. Selection Characteristics of Farmers' Forestry Service Outsourcing

We conducted a random sampling survey on farmers with forest management behavior in Fujian Province in the past five years. It is found that the differences of peasant household endowment, forest land characteristics and management form will affect whether peasant households entrust their own forest land to others.

3.1 Peasant Household 'Endowment Influences Outsourcing Choice

The influence of peasant household' endowment on outsourcing choice is mainly reflected in the following aspects. Firstly, household income is the key to decide whether farmers choose service outsourcing or not. Only 3% of the households surveyed depended entirely on forestry production to maintain their household expenditure, while most of the fixed-income households tended to outsource forestry production to others in order to obtain fixed working hours. Secondly, the degree of mechanization affects farmers' outsourcing choices. Logging is a labor-intensive process. If machinery is used instead of labor, the production efficiency will be greatly improved. Although most of the land in Fujian Province is mountainous and the machinery is not easy to operate, nearly 65% of farmers still choose to outsource logging services because of the lack of timber harvesting machinery, which is forced to choose outsourcing services to reduce labor time investment. Finally, farmers who have received forestry production services or higher education level tend to have simple tending work in their leisure time.

3.2 The Characteristics of Woodland Affect the Choice of Farmer Outsourcing

Firstly, the characteristics of forest land determine the difficulty of forest management and affect transaction costs. The level of transaction costs determines the willingness of farmers to choose outsourcing. In the process of trading, forestry service organizations will evaluate the characteristics of farmer's woodland and give service prices accordingly. Usually, the forest land which is fragmented and far from the forest road will be charged higher service fees. At this time, farmers will decide whether to accept forestry production outsourcing services according to their opportunity cost. Secondly, tree species affect farmers' outsourcing choices. One is the planting of precious trees, such as Phoebe Nees Plant Resource. Second, economic forest planting, such as bayberry, peach trees. Precious tree species and economic forests are not only relatively expensive in seedling prices, but also have higher requirements for farmers' planting level in planting and tending. Therefore, most of the farmers will outsource forestation to professional service organizations for prudence when planting.

3.3 The Mode of Operation Affects the Choice of Outsourcing

Fujian province is one of the cradles of China's collective forest rights system reform. Therefore, Fujian province continuously tries to explore in the process of forestry production and management, and gradually forms three modes of forestry production and management: individual management, joint management and joint-stock management. Different forms of operation lead farmers to make different choices. In joint operation, members tend to choose plots with less difficulty in forestry and refuse plots with more difficulty in farming. As it is impossible to reasonably distribute the labor tasks among members in joint operation, the owners of joint operation have to choose to leave them

to a third party. For share operation, there are often some "capable people" or shareholders with a large weight of assets in this form of operation, and one or more managers jointly decide which production links are outsourced and which production links are completed by members themselves. In the individual management, it is determined by households' endowment and forest land characteristics.

4. Conclusion

In China, many agricultural productions have gradually become specialized division of labor, and agricultural development in many regions has separated different production links and left them to professional service personnel for management. At present, the operational service market of forestry has not been fully opened, although some government or collective forestry tasks have been opened to the service organizations in the market. But the overall market has a lot of room to grow. In the next step, the government should improve the construction of specialized service market system according to the actual needs of farmers, further promote farmers to choose outsourcing services, and finally effectively improve the production level of China's artificial forests, improve the overall quality of China's forests, and unswervingly follow the path of green and sustainable development.

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