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# Estimation and Realization Path of Agricultural Resource Values in Fujian Province

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**Abstract:** The values of agricultural resources include the economic value from agricultural production and their ecological service value. This study aims to assess the values of agricultural resources in Fujian Province using relevant theoretical research models, clarify the process and path of realizing these values, and propose policy recommendations for further improvement. The research results show that the economic value of agriculture in Fujian Province in 2015 was 355.36 billion yuan, while the ecological service value was 1193.95 billion yuan. Within the ecological service value, values of rest service, temperature regulation, gas regulation, soil conservation, water conservation, and biodiversity service were 316.13, 111.92, 74.80, 132.11, 217.81, and 341.18 billion yuan, respectively. The paths for realizing these values in Fujian Province mainly include the construction of agricultural product brands; the integration of agricultural production, agricultural product processing, and agricultural market service; agro-ecological compensation; and green financial support. To further increase the values of agricultural resources in Fujian Province, financial support should be increased, pollution-free agricultural products and agricultural products with geographical indications should be promoted, agricultural industry integration should be advanced, the agricultural ecological compensation system should be improved, and ecological awareness education and publicity should be boosted.
**Keywords:** agricultural resources; value estimation; realization path; Fujian province

In 2016, Fujian province became part of the first batch of the national economical civilization pilot zones [1], and regarded constructing “a pilot zone for realizing ecological products’ value” as a strategic goal of ecological civilization construction. During the construction of the national ecological civilization pilot zone, Fujian province stuck to the principle of “developing a richer life with clean water and green trees”, by respecting, conforming to, and protecting nature, and maintaining clean water and green trees to create ecological efficiency and economic social efficiency [2]. The problem of unbalanced and inadequate development is most salient in the countryside of Fujian province. Agriculture is a vital part of Fujian’s ecological civilization construction, and improving the sustainable usage of agricultural resource environment and realizing the high-quality development of agriculture are of great significance. Under the current situation of agricultural resource utilization and agricultural industry development, the research on massing, calculating process, and realization approaches of agricultural resource value must be conducted emphatically to provide theoretical support for agricultural resource development in Fujian province. This paper uses domestic and overseas theoretical models of agricultural resource value research for reference to estimate the economic value and ecological service value of agricultural resources, to study the process and path of realizing agricultural resource value, and to offer a political proposal to further increase

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agricultural resource value.

# 1 Value estimation

## 1.1 Estimation approach

The agricultural resource value is classified into the economic value of agricultural production and the ecological service value. Economic value is realized and adjusted by the market and is easy to estimate and calculate, while the ecological service value is immaterial in form, and is difficult to be embodied as an economic value. In 1997, Costanza et al. [3] evaluated the global ecosystem service for the first time and created the classification of ecosystem service that includes 17 assess indicators. In 2001, the millennium ecological assessment system started by the United Nations classified the ecosystem service into four functional parts: supply service, regulation service, culture service, and support service [4,5]. In 2009, the economics of ecosystem and biodiversity led by the United Nations Environment Program included the value of natural assets in the decision process to guarantee the sustainability of the ecosystem service [6]. The domestic academic circle researched the indicator system of Chinese ecosystem service evaluation actively on the basis of international accounting experience [7–11]. This paper filtrates evaluation indicators, evaluation classifications, and accounting methods according to existing research and resource assets accounting principle for the estimation of the agricultural resource value in Fujian province (Table 1).

Products service of agriculture, forestry, animal husbandry, and fishery refer to the parts of agriculture, forestry, animal husbandry, and fishery which can be used directly; specifically, it includes the quantity and production value of agriculture, forestry, animal husbandry, and fishery products. Rest service value refers to the value of the rest resources to provide rest service for human beings [12]. This value mainly reflects the consumption of tourists during their tour. The temperature regulation service reduces the temperature of the surrounding environment through transpiration of plants, to reduce summer heat and mitigate the “urban heat island effect” [13]. This paper uses air conditioners’ starting temperature as 26℃, set by the state as the benchmark for calculating the function of the temperature regulation service when the air temperature is above 26℃. Atmospheric pollution causes various negative physical effects on human health. Atmosphere regulation is the difference of the improvement in health brought by the control of atmospheric particulate matter. This paper takes only PM 2.5 as the air pollution factor for the health effects analysis, and the service benchmark is on average PM 2.5 annually, calculated as the concentration of 74 Chinese cities in 2015. Soil conservation refers to the coverage and protection of the soil and the regulation process of moisture and nutrient of soil from the ecosystem, such as the forest, grassland, and so on. This service seeks to protect soil from erosion, including reducing sedimentation, and maintaining the nutrients in the soil [15]. This research chiefly calculates the differences of soil erosion between extremely degraded bare land and actual erosion in Fujian province, and assessed the two-period soil retention capacity of the natural ecosystem in Fujian province. Water conservation service is the amount of clean water from a particular area in a certain period [16]. This paper takes surface water bodies up to or above the third water quality standard as per the *Environmental Quality Standards for Surface Water* (GB3838—2002) as the clean water value of Fujian province. Biodiversity service is a place provided by a type of ecosystem for biological species, for survival and reproduction to protect their longevity, which shows updates, on the biological environment quality of species population [17]. This paper takes the county-level administrative region in Fujian province for evaluation and utilizes the existing literature and the supplementary survey date to assess the species conservation value in the county of Fujian province according to the evaluating indicators and methods set by the *Regional Biodiversity Assessment Criteria* (HJ623-2011).

## 1.2 Estimation results and analysis

1.2.1 Overall situation

In 2015, the total agricultural resource value in Fujian province was 1549.31 billion yuan, of which the economic value of agriculture, forestry, animal husbandry, and fishery was 355.36 billion yuan (22.9%), and the value of the ecological service was 1193.95 billion yuan (77.1%). Compared with 2010, this total value increased by 27.1%, the value of agriculture, forestry, animal husbandry, and fishery rose by 60.8%, and the value of the agricultural ecological service was up by 19.6% (Table 2). Since 2010, the value of agriculture, forestry, animal husbandry, and fishery products in Fujian province has been growing faster, while the value of the agricultural ecological service has slower growth.

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**Table 1.** Estimation methods and value system of agricultural resources in Fujian Province.

| Value category | Estimating subjects | Representation indicator | Estimating model | Specific index | Estimating basis | Unit price in 2015 |
|---|---|---|---|---|---|---|
| Economic value | Agriculture, forestry, animal husbandry, and fishery products | Value of products | Summarize | Production and value of agriculture, forestry, animal husbandry, and fishery products | *Fujian Statistical Yearbook* and cities' annual reports | Current price |
| Ecological service value | Rest service | Tourists' consumption | $UV=CC$ | Number of tourists | *Fujian Statistical Yearbook* and cities' annual reports | Current price |
| | Temperature regulation | Price of air conditioning and refrigeration | $\triangle Q_{i,d}=\triangle T_i \times \rho_c \times FVC_{i,d} \times H_{i,d}$ | Duration of air temperature above 26℃, effective temperature decrease | National average selling price of electrical enterprises in 2015 | 0.643yuan/ kW·h |
| | Air regulation | Difference in health effect improvement | $\Delta E=P\times M_0\times(1-\frac{1}{\exp(\beta\times(C-C_0))})$ | PM2.5 concentration, exposed population | *China Statistical Yearbook* | 983 978 yuan |
| | | Negative ions costs | $G_i=1.314\times10^{15}\times\sum_{j=1}^{4}(Q_{ij}-600)\times A\times\frac{H}{L}$ | Negative ions concentration in air | *Criteria for the Assessment of Forest Ecosystem Services (LY/T1721—2008)* | $6.85\times10^{-18}$ yuan/ unit |
| | Soil conservation | Soil cutting cost per unit area | $AC=R\cdot K\cdot LS\cdot(1-C)$ | Sediment accumulation decrease, compound fertilizer quantity that reduces Au, amount of organic matter loss | *Criteria for the Assessment of Forest Ecosystem Services (LY/T1721—2008)* , *China Price Statistical Yearbook 2016* | 17.39 yuan/ $m^3$ |
| | | Price of carbamide | | | | 1250.00 yuan/t |
| | | Price of superphosphate | | | | 2286.00 yuan/t |
| | | Price of potash fertilizer | | | | 653.21 yuan/ t |
| | | Price of organic fertilizer | | | | 2390.74 yuan/ t |
| | Water conservation | Value of water resource | $A(t)=\sum_{i=1}^{n}(C_s(i)-C(i,t))\times W(t)\times10^{-3}$ | Water supply quantity, water environment quality | *Notice on Issues Related to Water Resource Fee Collection Standards (2013)* | 1.6 yuan/ $m^3$ |
| | | Governance cost of chemical oxygen demand | | | Sewage treatment charges | 1920.00 yuan/t |
| | | Governance cost of ammonia and nitrogen | | | | 2400.00 yuan/t |
| | | Governance cost of phosphorus | | | | 7667.00 yuan/t |
| | Biodiversity | Species conservation value per unit area | $A(t)=\sum_{i=1}^{n}(C_s(i)-C(i,t))\times W(t)\times10^{-3}$ | Biotic environment quality, endangered and specific level | *Forest Ecosystem Services (LY/T1721—2008)* , | Classified by trees |

**Table 2.** Value constitution of agricultural ecological resources in Fujian province (2010 and 2015) (in 100 million yuan).

| Year | Agriculture, forestry, animal husbandry, and fishery products | Rest service | Temperature regulation | Air regulation | Soil conservation | Water conservation | Biodiversity | Total |
|---|---|---|---|---|---|---|---|---|
| 2010 | 2209.9 | 1202.0 | 1240.7 | 118.7 | 1365.2 | 2642.1 | 3413.9 | 12192.6 |
| 2015 | 3553.6 | 3161.3 | 1119.2 | 748.0 | 1321.1 | 2178.1 | 3411.8 | 15493.1 |

1.2.2 Cities' situation

In 2010, the total production of agriculture, forestry, animal husbandry, and fishery products in Fujian was $4.63\times10^7$ t, which created a total value of 200.99 billion yuan. In 2015, Fujian produced agriculture, forestry, animal husbandry, and fishery products of $5.36\times10^7$ t and its value was 355.36 billion yuan. The value of Fujian's agriculture, forestry, animal husbandry, and fishery products in 2015 is distinctly higher than that of 2010, increasing by 134.37 billion yuan as compared to 2010. Among the cities, Fuzhou has the highest values of agriculture, forestry, animal husbandry, and fishery products in 2010 and 2015, which are 46.07 and 74.13 billion yuan respectively, and the lowest values are of Xiamen, which are 0.63 and 0.8 billion yuan, respectively. Compared with 2010, Fuzhou has the maximum increments in value for agriculture, forestry, animal husbandry, and fishery products—28.06 billion yuan—among all the cities.

According to the Fujian statistical yearbook and the cities' annual reports (Table 3), the number of tourists in Fujian were 73.120 million yuan in 2010 and 205.375 million yuan in 2015, and the tourist consumption was 64.48 and 271.26 billion yuan, respectively. Xiamen is among the top cities in the number of tourists and their consumption, followed by Fuzhou and Quanzhou. Sanming, Longyan, and Ningde city rank lower.

**Table 3.** Tourist population and tourism income of the major cities in Fujian province in 2010 and 2015.

| Cities | Overseas tourist population (10 thousand persons) | | Overseas tourism income (100 million USD) | | Domestic tourist population (10 thousand persons) | | Domestic tourism income (100 million USD) | |
|---|---|---|---|---|---|---|---|---|
| | 2010 | 2015 | 2010 | 2015 | 2010 | 2015 | 2010 | 2015 |
| Fuzhou | 69.86 | 97.30 | 8.43 | 12.02 | 2275.11 | 4572.35 | 208.03 | 463.17 |
| Xiamen | 155.19 | 265.59 | 10.86 | 23.80 | 2863.27 | 5718.59 | 310.35 | 708.61 |
| Putian | 18.47 | 26.99 | 1.29 | 2.36 | 774.71 | 1949.36 | 54.81 | 144.66 |
| Sanming | 2.90 | 0.53 | 0.20 | 0.48 | 650.39 | 1946.71 | 60.96 | 147.01 |
| Quanzhou | 77.05 | 111.09 | 6.67 | 11.28 | 2314.10 | 4903.46 | 207.04 | 532.77 |
| Zhangzhou | 24.75 | 42.44 | 1.55 | 3.22 | 1001.74 | 2681.18 | 89.45 | 459.83 |
| Nanping | 17.34 | 30.40 | 0.67 | 1.70 | 1300.03 | 2896.18 | 151.38 | 363.29 |
| Longyan | 2.24 | 9.82 | 0.10 | 0.60 | 984.73 | 2522.35 | 69.59 | 192.55 |
| Ningde | 0.34 | 2.50 | 0.02 | 0.14 | 680.74 | 1835.00 | 50.39 | 149.40 |
| Fujian province | 368.14 | 591.45 | 29.78 | 55.61 | 12 844.82 | 26 129.00 | 1202.00 | 2798.00 |

*Source*: Statistical Yearbook of Fujian Province (2010–2015).

In 2010, Fujian's temperature regulation service absorbed $2.31\times10^{11}$ MJ energy, which is $6.43\times10^{10}$ kW·h, when converted to electrical energy. The mean value of the energy is 1.89 MJ/m$^2$, which is equal to 0.53 kW·h/m$^2$ and is priced at 124.07 billion yuan. In 2015, Fujian's temperature regulation service absorbed $2.09\times10^{11}$ MJ energy, which is $5.80\times10^{10}$ kW·h, when converted to electrical energy. The mean value of the energy is 1.71 MJ/m$^2$, which is equal to 0.48 kW·h/m$^2$ and is priced at 111.92 billion yuan. Compared to 2010, Fujian's temperature regulation service absorbed less energy in 2015, which means that the value has reduced by 12.15 billion yuan and the decrement rate is about 9.79%.

Fujian's value of air regulation services in 2010 and 2015 were 11.87 and 74.80 billion yuan, respectively. Compared with 2010, the value of air regulation services has increased dramatically—by 62.93 billion yuan—due to the observable improvement of air environment quality, the increment in permanent resident population, and the decrement in disease mortality of the cities in recent years. Quanzhou city had the highest value of air regulation

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service at 17.53 billion yuan, while Xiamen had the lowest at 4.43 billion yuan in 2015.

In 2010, the total value of soil conservation service in Fujian province was 136.52 billion yuan, of which the value of sediment avoiding was 2.92 billion yuan; the values of organic matter loss reduction, nitrogen fertilizer loss reduction, phosphate fertilizer loss reduction, and potash fertilizer loss reduction were 42.57, 15.56, 1.11, and 74.25 billion yuan, respectively. In 2015, the total value of soil conservation service in Fujian province was 132.11 billion yuan, of which the value of sediment avoiding was 2.82 billion yuan; the values of organic matter loss reduction, nitrogen fertilizer loss reduction, phosphate fertilizer loss reduction, and potash fertilizer loss reduction were 41.2, 15.16, 1.08, and 71.85 billion yuan, respectively. Compared with 2010, the total value of soil conservation decreased by 4.41 billion yuan in 2015; the primary reason for this decrement is the decrease in agricultural acreage and the degeneration of cultivated land quality.

Fujian's value of water conservation in 2010 and 2015 was 264.21 and 217.81 billion yuan, respectively. In 2010 and 2015, the highest values of clean water were 52.99 and 62.92 billion yuan, respectively, in Nanping city, and the lowest values were 2.22 and 2.1 billion yuan, respectively, in Xiamen city. The main reason for the decrease of Fujian's water conservation value (Fig. 1) compared to 2010, is that the precipitation in 2015 (1992.9 mm) was less than that of 2010 (2084.3 mm).

The value of species conservation in Fujian province in 2015 was 341.18 billion yuan and that in 2010 was 341.39 billion yuan, which are approximately equal. Nanping city had the highest value of species conservation, which was 74.15 billion yuan in 2015 and 75.36 billion yuan in 2010.

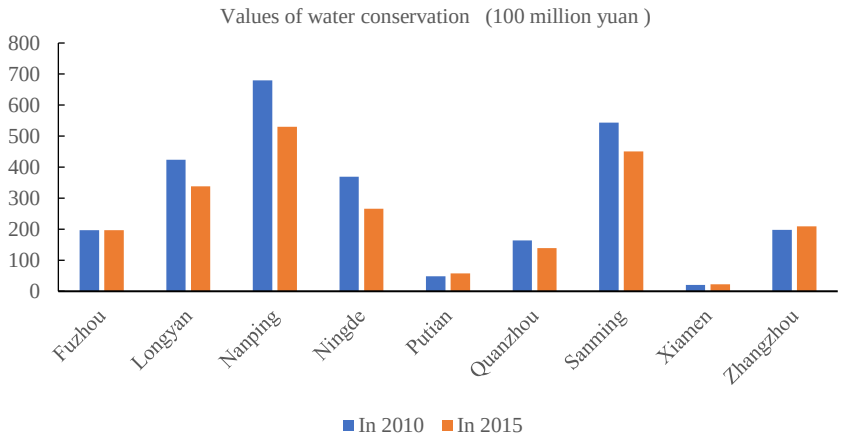


**Fig. 1.** Values of Water Conservation (100 million yuan).

## 2 Realization paths of ecological value

The capitalization of ecological resources is the most effective approach to realize the value of ecological products. Ecological resources with scarcity, profit, and clear property rights can be transformed into ecological assets, and the existing value of ecological resources turns into the use value of ecological assets. Ecological assets with property rights can be translated into floating capital only after access to the market, and the owner revitalizes the ecological assets by artificial exploitation and investment to turn the use value of ecological assets into the factor value of ecological capital. Ecological capital produces ecological products through operation and production, then transforms them from factor value into market exchange value. This process reflects the value of ecological products, increases the value of ecological assets, and capitalizes the ecological assets (Fig. 2).

Clean water and green trees are the vital resources and assets of Fujian province, which can realize the value of ecological products by developing measures like boosting the construction of agricultural product brands, agricultural industry integration, agro-ecological compensation, green financial support, and so on.

### 2.1 Construction of agricultural brands

Realizing ecological value need to promote standardized agricultural production. Fujian province built 2818 new standardized production bases. Fujian increased efforts to cultivate brands, authenticated 4147 pollution-free agricultural products and agricultural products with geographical indications, and assessed 10 provincial famous regional public brands of agricultural products and 30 provincial famous agricultural products brands. It improved

the publicity of agricultural brands, gave a series of promotions for provincial special products in poor counties, and filmed and broadcasted 18 promotional videos of established agricultural brands. Fujian continuously implemented the "Fujian Tea on the Maritime Silk Road Activity", supporting tea enterprises in instituting culture promotion centers of Fujian tea in countries and regions along the Belt and Road and signed tea purchase and sale contracts for 1.05 billion yuan. It also expanded the amount of advanced characteristic agricultural products exports. The annual exports value of agricultural products is 9.8 billion dollars and in the top three. The cooperation and exchanges of agriculture with Taiwan of China have improved. The amount of investment from Taiwan of China for agriculture use is the highest, and six gardens instituted by Taiwan of China are the top as per the national evaluation.

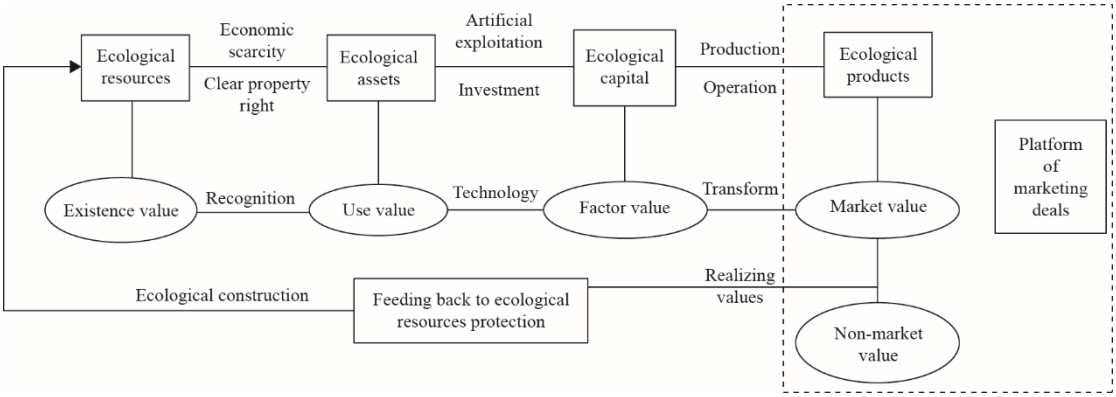


**Fig. 2.** The process of ecological resource capitalization.

### 2.2 Agricultural industry integration

Initial and deep processing should be boosting strongly in the agricultural production area. Fujian built 121 primary processing centers in the production area and the process rate was increased to 70%. Fujian improved the linkage between production and sales, formed 10 alliances of fruit production and marketing, and set up a vegetable supply chain association. The online sale in rural areas is 130 billion dollars, and increased by 34.7%. Fujian province devoted itself to expanding the functions of agriculture, facilitated rural tourism, supported the construction of a batch of agricultural characteristic towns, and earned an annual leisure agricultural operating income of over 30 billion yuan, which increased above 20%.

### 2.3 Agricultural ecological compensation

Since 2003, Fujian province has explored pilot work with a compensation mechanism of ecological interests and governance sharing in drainage basins like Jiulong River and Min River successively, increased transfer payments and subsidies of provincial government budgets to less developed counties and cities upstream, and guided the downstream beneficial areas to provide economic compensation to the protected area upstream. In December 2011, Fujian provincial people's congress approached the *Regulations on Water Environment Protection on River Basin in Fujian Province*, and legally built the ecological compensation principle of "those who benefit from the ecological resources should compensate the ecology; those who pollute the ecology should treat the pollution". Presently, Jiulong River and Min River basins formally conduct the ecological compensation. Cities in Fujian raise special funds for water basin environment renovation, among which Fuzhou and Xiamen which are located downstream give 80 million yuan every year; Nanping, Sanming, Zhangzhou, and Longyan contribute 50 million every year, and the provincial public finance provided 110 million yuan.

### 2.4 Green financial political support

Some banks in Fujian province support ecological protection, ecological construction, and green industry program, by green credit and providing credit assistance to green agriculture, green forestry development and so on, to protect clean water and green trees. With the support of a series of preferential policies on "green credit", a number of ecological agricultural enterprises built standardized hog houses, introduced advanced equipment about automatically feeding, temperature control biogas processing and so on, and became the produce base for integration ecological farming and animal husbandry of "pig–biogas–fruit, vegetable and forest", which were

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defined as pollution-free production units by the agricultural product quality and safety center of the ministry of agriculture, and authenticated as a green food produce base by the provincial green food development center.

## 3 Policy proposal

### 3.1 Increasing policy support to realize the value of ecological products

Provincial public finance should be increased for support to ecological agriculture; financial capital should be allocated at or above the provincial level to assist cities and counties in agricultural sustainable development, comprehensive utilization of agricultural wastes, green development of animal husbandry and so on; and continual support should be provided for special projects on the prevention and control of livestock and poultry breeding pollution, reduction and zero growth of fertilizer and pesticide, precaution and control on soil of cultivated land, and so on. The finance at or above provincial level should mainly aid standardized rebuilding on pig scale farms with more than 1500 stock hogs, while finance at the city and county level should support standardized rebuilding on pig scale farms with 250–1500 stock hogs. All public finance must give allowances for the production, demonstration, and promotion of commercial organic fertilizer; the professional prevention, control, service, and organization of rice pests and diseases; and the innocent treatment of pigs that die from diseases. The ecological healthy breeding model should be generalized and applied by means of assisting the construction on programs like closed circulating water factory breeding and all plastic cage breeding under the utilization of finance at or above the provincial level. Revolution in green ecology-oriented agricultural subsidy should be developed and implemented. The agricultural ecological subsidy system should be perfected. The government should explore effective supporting policies like agricultural non-point source pollution control and heavy metal pollution control, turn the policy target of quantity increasing into ecological equal emphasis on quality and quantity, and guide the development of ecological agriculture.

### 3.2 Strengthen management of agricultural product brands and promote pollution-free agricultural products and agricultural products with geographical indications

Some local governments, enterprises, and farmers ignore the preciousness of “specialty” and have little cognition about brands, therefore, resources of regional brands and corporate brands fail in effective integration and the brands do not effectively play their role. Meanwhile, public brands do not have valid protection that protects them from appearances on brand abuse and counterfeit products. The government should construct an entire system of agricultural brands, pollution-free agricultural products and agricultural products with geographical indications, and improve the ratio of re-examination and certificate change on pollution-free products and the ratio of renewal certification on green food to continually enhance the developing motivation. Agricultural pollution-free products should be combined with rules of producing area access and market exit organically. All the products that obtain the anti-counterfeiting traceable mark of pollution-free agricultural products should be determined by equivalent price, and must access the producing area and exit the market smoothly and quickly. Green foods’ safety, high quality, and superiority in the entire industry chain must be emphasized to advocate high quality and high price; organic foods’ ecological security must be stressed and organic food must be developed in local conditions; and agricultural products with geographical indications, regional characteristics, quality and peculiarity should be underlined to drive the foundation of regional characteristic agricultural products and industry development in advantageous areas. The government should take full advantage of emerging means like e-commerce platforms, combination of online and offline, internet plus, attach importance to auction and futures trading, reinforce specific marketing of agricultural products, and increase the market share of specific agricultural products.

### 3.3 Pushing for the integration of rural industry and adding the value of ecological service

The government should make use of the preponderance of ecological recourses in Fujian province; intensify the horizontal expansion of the industry chain; deeply integrate agriculture with tourism, education, culture, sports, exhibition, health, and pension; assist the development of various demonstrative projects on leisure agriculture like agritainment, leisure farms, forest home, and fishing village; strive to develop creative agriculture; strengthen the discovery and protection of crucial agricultural culture heritage; and develop local specific industry projects on innovative agricultural products, farming landscape, souvenir, folk handicrafts. The government must give great impetus to excellent farming culture education in campus; utilize available resources to construct demonstration

bases about agricultural science popularization, education, social practice and studies; and encourage cities and counties to construct agricultural theme parks, agricultural carnivals, agricultural education gardens, photography bases, forest scenic areas, fisherman's wharfs, to improve the comprehensive benefits of industry integration.

### 3.4 Perfecting the agricultural ecological compensation system and mechanism

The current agricultural ecological compensation system in Fujian mainly provides for ecological functional zones and key rivers, and focuses only on cultivated land. Although a Pilot Programme on Comprehensive Ecological Protection Compensation in Fujian province has been enacted, the coordination and stimulation functions of the government and the market is still a problem, and the marketable and diversified ecological compensation mechanism has not been built authentically. The agricultural ecological environment is public and unpaid; meanwhile, the cost of operating eco-agriculture is too high to sustain for modern agriculture operators. Therefore, the government must lucubrate this problem; accord more policy preference and assistance to investment, credit and loans, subsidies and revenue of ecological agriculture; and set up and perfect the investment system and incentive mechanism of efficient eco-agriculture development and agricultural ecological environment safeguard. It is necessary to use domestic interrelated experiences as reference to explore and establish an ecological agricultural compensation mechanism in Fujian province; to be politically inclined toward poverty relief, key counties of water and soil erosion, momentous ecological function areas, and nature conservation zones; to define the compensation process and objects; and to complete compensation standards and operating criterions.

### 3.5 Intensifying the dissemination and education of ecological consciousness

Fujian province ought to propel the construction of pilot bases about ecological civilization dissemination and education, carry out multi-layered and all-round education and dissemination through various advertising forms and platforms, and heighten the ecological environmental protection awareness of modern agricultural producers and operators. The government should also take advantage of the talent and technology of agricultural education institutions like the Academy of Agricultural Sciences and agriculture and forestry universities to increase the education efficiency of new professional farmers, and share modern produce equipment, agricultural technological achievements and ecological operating skills with farmers to form continuous power sources that push the development of high-efficient ecological agriculture.

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