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Countermeasures against Prominent Problems of Forestry in Yutian County under the New Normal

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Abstract The prominent problems faced by forestry development in Yutian County under the new normal of deep integration of social poverty alleviation and local forestry construction are analyzed in depth in this article. Combined with the current situation, specific measures are proposed, in order to provide a theoretical basis for the construction and development of forestry in arid oasis-type agro-ecological areas.

Key words New normal, Arid oasis-type agro-ecological zone, Forestry development, Problems and countermeasures

1 Introduction

Yutian County is a typical arid oasis-type agro-ecological zone, with fragile ecological environment and insufficient land for agriculture. Therefore, the development of local forestry must not only focus on ecological benefits but also take into account the economic benefits of farmers^[1–4]. Through the development in recent years, the construction of ecological and economic forests dominated by characteristic forestry and fruit industry has become the main model of local forestry development^[5]. In the context of in-depth development of targeted poverty alleviation, under the vigorous promotion of local forestry construction by the state and autonomous regional governments, the forestry industry, which is dominated by the characteristic forestry and fruit industry, has become one of the pillar industries in the income increase of farmers in Yutian County^[6–8]. But as the pace of forestry development continues to accelerate, problems such as shortage of water resources for afforestation, pest invasion, forestry management and serious shortage of technical services are emerging. These problems will become the main factors restricting the development of local forestry in the future^[9–11]. Resolving these problems according to local conditions requires in-depth investigation and serious thinking, and is also the responsibility and obligation of local forestry technical cadres.

2 Overview of forestry development in Yutian County

In Yutian County, the area of oasis is 2 382.6 km², accounting for 6% of its total land area; and the area of forests is 177.87 million ha, and the area of artificial afforestation is 41 066.67 ha^[11]. As of the end of 2015, Yutian County had built the largest artificial base (11 933.33 ha) in China; and the area of characteristic forestry and fruit industry had been developed to 21 666.67 ha (including 11 733.33 ha of walnuts, 5 066.67 ha of red dates, 933.33 ha of apricots, 2 333.33 ha of grapes and 1 313.33 ha of roses).

In 2015, the output of characteristic forest fruits in the county was 12 921 t, and the output value was 767.15 million yuan; and the per capita income from forest fruit planting was 2 583 yuan, accounting for 42% of the per capita total income. According to the development plan of forest and fruit industry of Yutian County, by 2020, the county's planting area of characteristic forest fruits will be expanded to 24 133.33 ha, and the per capita income from forest fruit planting is estimated to account for 50% of the per capita income of farmers, that is, achieve the goal of 5 000 yuan.

3 Main problems facing forestry development in Yutian County

3.1 Resource protection and development and utilization not enough There are conflicting interactions between resource protection and development and utilization. The mutual coordination and common development of the two are more difficult^[11–13]. The forest resources in Yutian County are mainly desert populus forest and desert vegetation. Vegetation types and coverage rate are relatively small. Most of the area is rocky Gobi and bare deserts. In addition, the average annual precipitation is only 33 mm, and the evaporation is more than 2 500 mm, making the ecological environment very fragile. The global climate has changed in recent years. The local average temperature rises, the groundwater level drops, and surface runoff continues to decrease. Simultaneously, the increase in population and expansion of wetland reclamation has led to overexploitation of groundwater, and rivers are heavily intercepted to irrigate farmland. These factors have caused a large number of surface vegetation to be destroyed. These damages are difficult to repair and can never be recovered.

3.2 Pests spreading crossing regions Due to the continuous changes in climatic conditions, the increasing flow of people, the lack of regulation of seedlings and pests, the spread of pests across regions, provinces and even across borders have become increasingly prominent. Invasive pests have no effective enemies or suppression means for transmission, so that their transmission cannot be effectively contained^[14–15]. For example, in Yutian County,

there is no such pest species such as *Eulecanium gigantea* Shinji, but by purchasing seedlings, seeds, etc. from outside, this pest are brought into Yutian County. At present, the pest has been found on many species such as locust, red date, and eucalyptus. Since the natural enemies of the pest have not been found in the area, only chemical control (spraying lime sulphur) can be used. The invasion of exotic pests not only jeopardizes the development of local forestry, and it also causes great waste of manpower and capital.

3.3 Forestry management and technical service forces seriously insufficient In recent years, Yutian County's forestry industry has developed rapidly. However, management is not in place, planting is not standardized, and planting techniques are lacking. These factors have led to a low output value of the local forestry fruit industry, and the effect of increasing farmers' income is not obvious^[16-17]. For example, the committee and the government of Yutian County have attached great importance to the development of walnut industry, and provided strong support from policy measures, institutional mechanisms, and capital investment. All towns have worked together to make unremitting efforts. As a result, the development of the walnut industry has achieved a large-scale expansion. As of the end of 2015, the county's planting area of walnut was 11 733.33 ha, with fruit-bearing area reaching 7 333.33 ha. However, the average yield was only 975 kg/ha, less than half of that of Yecheng County; the total output was only 7 137 t; and the total output value was only 185.56 million yuan, far lower than the expected return. At the end of 2015, the total area of walnuts accounted for 54.4% of the total area of the forest fruit industry in the county, and the per capita walnut income was 453.5 yuan, accounting for only 8.6% of the per capita income of the forest fruit industry of the year. The development of the walnut industry is far from being proportional to the effect of increasing farmers' income. According to the *Opinions on Accelerating the Development of Characteristic Forest Fruit Industry* by the committee and government of the autonomous region, there is a senior technical staff in each major forest fruit-producing county, fifteen intermediate technical staffs in each 1 000 ha of forest fruit-producing base, and fifteen junior technicians per 100 ha of forest fruit-producing base. There is a serious shortage of forestry technicians in Yutian County. The existing forest fruit area is 21 666.67 ha, but only 74 forestry professional technicians are equipped (including township forestry stations). The forestry technicians are seriously inadequate and cannot meet the needs of forestry development.

3.4 Production and sales of forest fruit products out of line, processing capacity insufficient, and added value of products not high At the end of 2015, the output of forest fruit industry in Yutian County had exceeded 10 000 t. However, sales only stayed at the level of waiting for customers to buy on-site, no pricing power and relatively passive, resulting in low sales prices. Although the quality of the fruit product is very good, due to insufficient publicity, few people know or understand it. In the past,

people often said that good wine is not afraid of deep alleys, but under the current market economy conditions, the unequal information on the two levels of production and sales makes the wines afraid of the deep alleys, and even for the best products, if others don't know, they can't be sold out, and no income will be created. The export of the original products is only one way to sell the forest fruit products. Higher processing gains can be achieved by deep processing to increase the added value of the products^[18]. At present, there are only four small forest fruit products processing enterprises in Yutian County with limited processing capacity, far from meeting the demand. The forest fruit processing products only stays at the level of primary raw material production. As a result, the added value of the forest fruit products can't go up, which directly affects the income of farmers.

3.5 Implementation of forestry projects incomplete and under-powered Although the state and autonomous region have brought many forestry development and technology research and development projects for Yutian County through the tilt of relevant policies, due to the weak research and development capabilities in the county and insufficient cooperation with scientific research units and enterprises, the implementation of the projects is not enough, the research direction is narrow, and the research depth and practicality are insufficient. The problem of the unsound theme of forestry projects has occurred during the implementation of the projects, mainly because the national funds can be put in place in time. Yutian County is a national poverty-stricken county, it lacks corresponding supporting funds, and the supporting facilities are mainly based on labor input. Moreover, it is difficult to coordinate the labor input.

4 Related countermeasures

4.1 Doing a good job in organic integration and coordination of resource protection and utilization Facing the status quo of resource protection and utilization, it is suggested to do the following work through the government level. First, it should increase the publicity efforts to make people aware of the importance of water conservation and environmental protection. The second is to increase the protection of existing desert vegetation and minimize or develop existing deserts to maximize their ecological benefits. The third is to develop industries such as tourism and choose tourism industries that have little damage to vegetation to reduce damage to existing vegetation by taking enclosure protection measures in the construction of tourist areas. The fourth is to rationally use water resources, rationally allocate existing water resources, and quantify water resources. The fifth is to adjust the industrial structure, optimize the planting structure, and choose tree species with strong adaptability, high economic benefits and easy management for the development of forest fruit industry, effectively promoting development while conserving resources.

4.2 Doing a good job in supervision and quarantine to prevent cross-regional spread of forest pests The following measures can be taken to strictly control the invasion and spread of

harmful organisms. The first is to strictly quarantine and strengthen the quarantine of forestry pests, especially the monitoring of seedling and fruit production and circulation (transport) to strictly prevent the entry of epidemic sources. The second is to prevent and eliminate actively. Once quarantine pests and diseases are found, measures will be taken actively to prevent and eliminate, preventing spreading. The third is to strength forest management, improve the tree's own resistance to stress and its ability to resist pests and diseases. The fourth is to choose a variety that is resistant to diseases to reduce the occurrence of forestry pests and the hazards to the industry.

4.3 Accelerating the introduction and training of forestry industry management and forestry technicians

The shortage of forestry industry management and forestry technicians cannot be solved quickly in the short term. How to eliminate the shortcomings that have bothered the development of forestry has always been a difficult problem in front of the committee, the government and the forestry authorities of Yutian County^[18]. It is recommended to combine short-term and long-term mechanisms to solve the impact and pressure of this problem by the following measures. First, training on management techniques for forestry and fruit industry for farmers and herdsmen can be strengthened. There are no less than 50 trainings each year to improve farmers' management level of forestry and fruit industry through training. The second is to actively train farmers and forestry technicians and intensify the training of young farmers' technicians in rural areas. Systematic training is carried out by going out, and young farmers with culture can be attracted by increasing the treatment and other means to let them joint the management team of the forestry industry. The third is to increase the intensity of the construction of standardized demonstration parks. There are no less than 20 new standardized demonstration parks in the county every year. Through the construction of the standardized demonstration parks, the point-to-plane effect is achieved. The fourth is to invite experts from the Academy of Forestry Sciences and the Academy of Agricultural Sciences of the autonomous county to conduct business training for the technical staff of the forestry industry, thus improving the technical level of forestry professional and technical personnel through training. The fifth is to increase the introduction of forestry talents and improve the overall technical level of the forestry cadres in the county, thereby promoting the development of the forestry industry.

4.4 Establishing and improving the forest fruit industry chain, and mastering production and sales initiative and autonomy

The prominent problems in the forest fruit products in the county, such as production-marketing divorce, low processing capacity and low added value, can be solved through the following measures. First, the propaganda work needs to be increased. Through the Guangzhou Xinjiang Forestry Fruit Expo, Urumqi Asia-Europe Expo and other platforms, the forestry fruit of Yutian County are publicized. Second, the role of rural forestry fruit brokers should be actively displayed. The third is to actively carry out

rural forest fruit business e-commerce training to train young people who are cultured, receptive to new things and wanting to be motivated, letting more people join the sales of forest fruit products and increasing the sales of forest fruit products. The fourth is to strengthen the processing and investment promotion of forest fruit industry to introduce powerful processing enterprises to settle in Yutian County, extend the chain of forest fruit industry, and increase farmers' income.

4.5 Creating a good platform for the construction and implementation of forestry projects

The construction and implementation of forestry projects is the basic guarantee for the development of forestry in Yutian County, and is also a continuous driving force for the industry to reach a new level^[19]. Therefore, we must take active measures to solve the problems in the implementation of forestry projects, realizing quick and effective solution. The main points of the proposed reforms are the following. First, it is recommended that the state exempts the local supporting funds for the forestry projects in Yutian County, and the funds for forestry projects are all borne by the state or the autonomous county. The second is strict approval of the project to ensure that project implementation has specific and effective benefits, and at the same time effectively serves local and social. Third, supervision and inspection of forestry project implementation need to be strengthened to ensure that project indicators are in place. The fourth is to strict the acceptance of the projects, and carefully verify the intended purpose of the projects to ensure that the project implementation is not compromised.

In summary, to solve the prominent problems faced by Yutian County in the development of forestry, not only further changing the mindset is needed, it is also necessary to work together with cadres and workers, forest farmers, and especially forestry technical cadres in Tian County.

Through careful thinking, in-depth research, and extensive listening to suggestions, we will develop solutions tailored to local conditions. As long as we remain true to our original aspiration and keep our mission firmly in mind, and are dedicated to the development of forestry and make advice and suggestions, in the near future, the forestry in Yutian County will develop into a major pillar industry and local star industry that will drive farmers to increase their income.

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5 Conclusions

Undoubtedly, urbanization is the only way for modern development and social civilization. But urbanization cannot be equated with de-villagization. The city is a concept relative to the countryside, and the two are relatively existential. If in the process of urbanization, the countryside is eliminated, urbanization will also lose its value. As a manifestation of the cultural diversity of the Chinese nation, traditional villages must be protected. Promoting urbanization must not be at the expense of dissolving rural civilization and sacrificing cultural heritage. It is not enough to just protect the ancient villages. Instead, it is even more important to inherit and develop the traditional ancient villages in China. The development of traditional villages should follow the principle of equal emphasis on development and protection. They should not be overexploited or let defeated. The characteristics of each village should be fully explored to draw on the traditional essence. We must formulate a comprehensive plan for the protection and development of each traditional village, and adopt protective development measures in a gradual and orderly manner to restore the prosperity and glory of the ancient village, integrating tradition and modernity to achieve real rural revitalization and show the beauty of countryside in the new era.

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