

# Analysis of Agricultural Production Trusteeship Services in The Whole Industry Chain of Fruit

Zhenyu Zhang, Jianjun Li \*

College of Agricultural Economics and Management, Shanxi Agricultural University, Taiyuan, China

\*Corresponding author: zkslj@126.com

**Abstract.** Fruit industry is an important part of planting industry in China. This paper analyzes the problems of production management and production technology in the development of apple industry, and then summarizes the application of agricultural production trusteeship services in apple industry. Finally, it puts forward some policy suggestions on agricultural production trusteeship services in the whole industrial chain of fruit industry.

**Key words:** fruit; apple; whole industrial chain; hosting service.

## 1. Introduction

Social problems such as the transfer of rural labor force, serious aging, fragmentation of land and low degree of organization of agricultural production have become the main reasons that restrict the development of modern agriculture. To realize rural revitalization, it is urgent to break the above constraints, and it is imperative to realize large-scale agricultural production in modern agricultural development and rural revitalization.

In the process of large-scale agricultural production, among various large-scale planting methods such as land circulation, land shareholding system and agricultural production trusteeship, agricultural production trusteeship is the most scientific and effective way in line with the national conditions. The fruit industry in Shanxi Province actively promotes agricultural production trusteeship service, and relies on grass-roots party groups to promote small farmers to participate in agricultural production trusteeship through propaganda and organization, so as to realize centralized contiguous and large-scale utilization of fragmented land, strengthen the collective economy, and at the same time, make rural revitalization have hematopoietic function, which can effectively solve the problems of "who will plant agricultural land" and "how to plant agricultural land", and fundamentally promote the effective connection between small farmers' production and modern agricultural development [1].

## 2. Problems in the development of apple industry

### 2.1 Production and operation

From the macro perspective of apple industry development, there are many problems in apple production in China, such as unreasonable variety structure, backward technology and equipment, weak industrialization system and so on [2]. From the micro perspective of farmers, there are mainly two problems: low profit and low technical level. From 2016 to 2019, the average net profit of 667 square meters of apples in China was 1,867 yuan, the cost profit rate was 36%, and the cost was 4,700 yuan [3]. Farmers' enthusiasm for production is not high, especially farmers in non-main producing areas and small orchard area have lower apple income.

### 2.2 Production technology

The low level of orchard management technology is also an important problem in apple production, especially in the use of fertilizer and medicine in orchards. Fruit farmers use a large number of chemical fertilizers and pesticides in pursuit of yield, and the environmental pollution and fruit pollution problems in the production process are prominent.

The main reason for these problems is that small farmers are the main producers of apples in China, and their huge number has caused great difficulties in supervision. Small farmers' willingness to use drugs safely and protect the environment is weak, which restricts the control and reduction of drugs in apple production to a great extent [4].

### 3. Application of Agricultural Production Trusteeship Service in Apple Industry

#### 3.1 Five parties join hands to build a system

"Five parties join hands to build a system" is to establish a production trusteeship system with "leading companies leading, government departments supervising and guiding, rural grass-roots organizations coordinating and promoting, financial and insurance institutions guaranteeing and supporting, and fruit farmers actively participating". Take the lead in integrating agricultural machinery, plant protection professional cooperatives and agricultural distributors with certain strength in the county to form a socialized service consortium for apple industry, which has created a new way for fruit tree trusteeship in the county. On the basis of leading enterprises playing a leading role, the agricultural and fruit industry departments are inclined in terms of policies and funds, and help enterprises improve their service levels through supervision and guidance; The township and village levels give full play to the advantages of "ground connection", connect enterprises, organize farmers, and be "matchmakers"; Encourage financial and insurance institutions to produce and host "tailor-made" financial and insurance products for Apple, and do a good job in financial security and risk prevention and control; Through extensive publicity, policy analysis and service optimization, fruit farmers are encouraged to actively participate.

#### 3.2 Target Management Placing Orders

Apple production management is subdivided into 29 working procedures, which are divided into three levels: key working procedures, sub-key working procedures and general working procedures.

**Table 1.** Trusteeship service process

| Type               | Technical difficulty | Service item                                                                                                                                                        |
|--------------------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| General process    | Low                  | Farmers are encouraged to do it themselves                                                                                                                          |
| Critical processes | medium               | The service enterprise sends technical personnel to guide management                                                                                                |
| Core processes     | high                 | Service enterprises help farmers formulate management plans for 3-5 years. After farmers confirm, enterprises send professional service teams to fully "take over". |

Before signing the trusteeship agreement with farmers, some professional and technical personnel will analyze and evaluate the growth status of fruit trees, put forward trusteeship schemes according to different parks, help farmers set long-term and short-term goals, and clarify the contents of trusteeship services according to farmers' needs, so that farmers can understand consumption, income and place orders with confidence.

#### 3.3 Six Units and Six Excellent Services

Unify technical standards and organize standardized production according to apple growth rules, effectively reducing technical errors and improving fruit quality; Unified material supply, the socialized service consortium gives full play to its role, and agricultural materials change from "retail price" to "group purchase price", reducing the cost of agricultural materials by 10% ~ 15%; Unified labor operations, professional service teams undertake production services such as pruning, fruit thinning, bagging and picking, and mechanical service teams carry out production operations such as spraying drugs, fertilizing and mowing, which greatly reduces the labor intensity of farmers; The establishment of unified information service, intelligent orchard management system and management information collection system has greatly reduced the traceability cost of fruit quality

information; Unified capital services, financial institutions provide loan services to entrusted farmers at lower interest rates, and the problem of farmers' production management funds is solved to reduce the risk of default; Unified fruit sales, enterprises give full play to their advantages, dock high-quality orders, and purchase managed products with guaranteed bottom, thus reducing farmers' marketing costs.

### **3.4 Participate in strong supervision throughout the whole process**

Set up the leading group office of agricultural production trusteeship pilot project, and organize special personnel to inspect the project content development, implementation effect, acceptance, payment of funds, archiving of archives, etc. of the project implementation subject, carry out performance appraisal, and give overall evaluation according to the actual implementation of the project. The evaluation results serve as an important basis for the allocation of funds and the determination of the project implementation subject in the next year.

The "housekeeping" orchard trusteeship mode of the whole industry chain focuses on the leading industries of apples and serves all aspects of apples from production, technology, materials and capital to management and sales. As long as the fruit farmers have demand, the trusteeship organization will have supply; At the same time, on the premise of respecting farmers' independent management status, through apple orchard production trusteeship, on the basis of not changing farmers' land contracting rights, income rights and the right to enjoy the national policy of benefiting farmers, we will lead small farmers to the track of modern agricultural development, cultivate and strengthen apple orchard production trusteeship service organizations, establish a production and management service system that meets the needs of modern agricultural development, and explore the formation of a replicable and scalable agricultural socialized service model.

## **4. Policy recommendations**

### **4.1 Innovation of Industrial Management Mechanism**

In the innovation of industrial management mechanism based on trusteeship, fruit farmers are the main participants and the owners of the management rights of fruit production materials. In the implementation, they should respect farmers' wishes, not force or blindly follow, respect farmers' management rights, adhere to comprehensive benefit guidance, scientific mechanism support, adhere to problem-solving orientation, focus on the goal of benefit sharing, give full play to farmers' subjective initiative, and stimulate their cooperation power with new agricultural management entities.

### **4.2 Establish and improve managed small-scale production**

Enterprises and other new agricultural business entities are the implementation organization entities of trusteeship. In view of the fact that farmers are the relatively strong parties in the market and hold the market demand and circulation supply of industrial development, we should pay attention to cultivating new agricultural business entities required by the development of modern fruit industry. Focusing on the market demand of enterprises, establish and improve the working mechanism of hosting small-scale production, and take the initiative in combination with the actual situation. All new agricultural business entities should fully protect the rights and interests of fruit farmers while insisting on their own supply interests, and do a good job in policy openness, household policy openness and household policy. Pay attention to brand marketing, strengthen ability improvement and gain market advantages; It is necessary to establish the development concept of helping each other in the same boat, innovate the mechanism, seek a win-win situation, and embed small-scale peasant production into the industrial chain; Establish their own brand custody to ensure efficient supply.

### 4.3 Rich hosting mechanism

Orchard trusteeship is an effective way to effectively solve the problem of small-scale production at present. All localities and new agricultural business entities should base themselves on the current situation of local industries, not make a one-size-fits-all approach, be flexible and pragmatic, adhere to the goal of efficient supply, scientifically set trusteeship levels, boldly explore trusteeship working mechanisms at different levels in enterprise trusteeship centers, towns, villages, groups and natural villages, and actively implement effective cooperation with village-level collective economic organizations; In the form of trusteeship, we should fully learn from mature experience and boldly explore the industrial development mechanism with local characteristics, which combines production responsibility cooperation with stock management cooperation.

### 4.4 Cost reduction and efficiency increase

Cost is the core competitive factor of industrial development, and reducing costs and increasing efficiency is an important goal of trusteeship form. Under the perfect operation mechanism, all implementers should adhere to the priority of science and technology and put the requirements of production standardization first; Secondly, it is necessary to take pest control, fertilizer and water control, labor allocation, and order sales as the core links. In terms of internal quality, it is necessary to select the best among the best, make profits and reduce costs, and ensure the quality, safety and characteristics of agricultural products; In terms of work, we should pay attention to the allocation of mechanized and digital fruit industry, especially accelerate the allocation of intelligent infrastructure for fruit industry trusteeship. It is necessary to establish input and production custody files, which is beneficial to traceability. Encourage all new agricultural business entities to introduce production insurance mechanism, actively participate in national policy insurance, and prevent natural risks.

### 4.5 Industrial Convergence

The integrated development of agricultural primary, secondary and tertiary industries is the fundamental requirement of China's agricultural and rural development, and trusteeship is an effective manifestation of integrated development. New agricultural business entities should base themselves on the height of building a strong city of modern fruit industry, and explore market cooperation with socialized service organizations, agricultural materials, science and technology, finance, e-commerce logistics, leisure agriculture and other industries. By taking advantage of the situation, complementing resources and cross-border symbiosis, we will form a mutually beneficial and complementary industrial chain, encourage and support the construction of fruit industry complexes, and accelerate the integration and development of rural primary, secondary and tertiary industries.

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