

# Research on Supply Chain Finance Model based on Agricultural Logistics Park Information Platform

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**Abstract.** The difficulty of financing in agricultural production is a key issue that restricts the development of agriculture. As an integrator of agricultural supply chain, agricultural logistics park has advantages in resource integration. Based on the information platform of agricultural logistics park, this paper constructed the supply chain finance mode of P2B (Platform to Business), and reoriented the function of the information platform of agricultural logistics park, aiming at solving the problem of information asymmetry and high financing risk in agricultural financing.

**Keywords:** Agricultural Logistics Park, Supply Chain Finance, Information Platform.

## 1. Introduction

With the rapid development of the rural economy, agricultural logistics has been further improved. The agricultural logistics parks, which have been gradually built up in various places, have integrated agricultural logistics functions and supplemented by advanced information technology platforms to bring together social service organizations of agricultural. They also have introduced relevant organizational functions of government and financial institutions, agricultural research units to provide modern and comprehensive services for agricultural logistics entities. At the same time, the agricultural logistics parks absorb the enterprises that produce or circulate agricultural materials and integrate the circulation of agricultural capital and rural consumer goods with the logistics of agricultural products to realize two-way circulation and make the logistics parks become a full-service platform for connecting pre-production, production, and post-production. Due to the entry of government and financial institutions and the development of supply chain finance, the information platform of agricultural logistics park has become an effective way to solve the financing problems in agricultural production.

## 2. Development Status and Problems of Agricultural Logistics Parks

China's agricultural logistics park is the product of the evolution and development of the wholesale market. It is a professional logistics park integrating logistics activities and functions. In this comprehensive regional organization, it is composed of various core enterprises providing professional logistics services for agricultural product supply chain. Therefore, it solves the problem of scattered resources and weak competition of individual logistics enterprises in the agricultural product logistics industry, and realizes industrial scale and intensive management.

In recent years, the agricultural logistics parks have developed rapidly, the operation scale has been continuously expanded, and the management level has been improved through the hardware equipment upgrade. However, the hardware facilities and management level of China's agricultural logistics parks are quite different. In particular, agricultural products have short shelf life and seasonal characteristics. Therefore, in the process of storage and distribution, more advanced refrigeration and fresh-keeping facilities and information management levels are needed to ensure the quality of agricultural products. Agricultural logistics parks are the information source of the whole supply chain of agricultural products, but there is no effective information platform to collect and analyze the information, so as to provide authoritative and instructive supply and marketing information for all participating enterprises in the park[1-2]. The information asymmetry of agricultural logistics parks is easy to cause serious loss of the timely circulation and consumption of agricultural products.

Therefore, the construction of agricultural logistics park information platform plays a key role in solving the unsound information system.

The weak nature and high risk of agricultural products make the agricultural product supply chain need a lot of money to operate. The input of capital determines the circulation speed, circulation cost and circulation efficiency of agricultural products. Because of the lack of financing awareness and credit awareness of the small and medium-sized enterprises involved in the agricultural product supply chain, as well as the weak financial strength and development uncertainty of the enterprises themselves, the credit ratings of the participating enterprises are low and the loans are difficult[3-5].

China's agricultural logistics parks are still in the initial stage of exploratory development, so there are many problems. With the rapid development of e-commerce logistics, in order to accelerate the cost reduction and efficiency of agricultural products logistics, it is necessary to innovate the service mode of agricultural logistics parks, and solve the problems of information asymmetry, capital shortage and information management by establishing an information platform.

### **3. Function Positioning of the Information Platform of Agricultural Logistics Park**

The information platform of agricultural logistics park is an information integration platform aiming at integrating rural information resources and promoting the development of agricultural informatization in an industrialized way. The basic function of the information platform of the agricultural logistics park is to integrate and classify the information of the supply chain of agricultural products, and at the same time provide information services for the participants in the supply chain. The degree of informatization is an effective way to realize the development of specialization, diversity and standardization rural logistics. By establishing the agricultural product market analysis and prediction system through the information platform, we can grasp the information changes in the market in a timely manner. It also explore the regularity of the agricultural product market, grasp the price trend and market situation of agricultural products, and provide data analysis for enterprises in the supply chain of agricultural products.

Agricultural logistics park platform is a resource integration platform. The efficient operation of agricultural product supply chain cannot be achieved without the value creation activities of each participating enterprise. Through effective integration of information platform, the value creation activities of each node enterprise can be found effectively, and the resource optimization can be conducted on the whole to achieve efficient operation of logistics activities. Agricultural logistics park is a form of agricultural industrial cluster. The emergence of this form makes the division of labor in the agricultural industry more detailed, and at the same time improves transaction frequency and reduces transaction cost.

In addition to the characteristics of agricultural development, the core issues that restrict agricultural supply chain finance are the lack of financial institutions to monitor the information of farmers and agricultural products. In order to solve the problem of specialization, the third party with professional knowledge needs to become the agent of financial institutions to realize effective integration of logistics, capital flow and information flow. Agricultural product supply chain finance is based on the whole supply chain to provide financing services for small and medium-sized enterprises in the supply chain, so as to reduce the transaction cost of financial institutions and enterprises involved in the supply chain and improve transaction efficiency. As a resource integration platform, the Agricultural Logistics Park Information Platform has professional knowledge and judgment ability. It can coordinate with each other through long-term cooperative relationships, and adopt integrated and standardized methods to reduce transaction costs. In addition, using modern information technology and Internet technology, the information platform can provide online financial services for participating enterprises in the supply chain.

The information platform of agricultural logistics park can record the transaction information of each participant and provide credit guarantee for them. As a core enterprise in the agricultural supply chain, the information platform of agricultural logistics park can provide credit guarantee for all

participants in the supply chain and disperse financing risks. Meanwhile, transaction records on the platform can be used as the credit rating evaluation standard for all enterprises.

## 4. Construction of Financial Service Mode based on Information Platform of Agricultural Logistics Park

### 4.1 P2B Supply Chain Finance Mode based on Agricultural Logistics Park Information Platform

The supply chain financing based on the information platform of agricultural logistics park refers to that financial institutions takes the macro-global of the whole agricultural product chain as the starting point, and takes the credit of the information platform of agricultural logistics park as the guarantee, regards the participating enterprises in the supply chain of agricultural products as a whole, and implements unified comprehensive credit. The financing solution is designed based on the bundled relationship formed by the transaction records of the participating enterprises on the platform, and the capital flow is effectively embedded in the entire supply chain to provide comprehensive credit financing products and services for the upstream and downstream parties involved in the agricultural product supply chain.

The information platform of the agricultural logistics park is mainly constructed by the management of the large-scale wholesale market of agricultural products. By utilizing the existing logistics infrastructure and combining with the macro-policy, the logistics services are upgraded and transformed, and large logistics service enterprises are attracted to settle in, forming a modern agricultural logistics park providing integrated and comprehensive services. All the logistics services in the whole supply chain of agricultural products are completed in the logistics park, and the platform provides the whole-process information management services of the supply chain. In addition, transaction information in the logistics park are classified and stored on the platform, providing data support for the financing services and credit rating.

The main participants of P2B supply chain finance based on the agricultural logistics park information platform include information platform (core enterprise), financial institutions, merchants/farmers participating in the agricultural product supply chain, logistics enterprises, government agencies and guarantee companies. The information platform has abundant capital and long-term stable operation ability, so it can provide sufficient guarantee for the repayment ability of upstream and downstream enterprises in the agricultural supply chain, and guarantee the smooth progress of supply chain finance. At the same time, it provides credit rating information for financial institutions to solve problems such as asymmetric information and unprofessional knowledge of financial institutions.

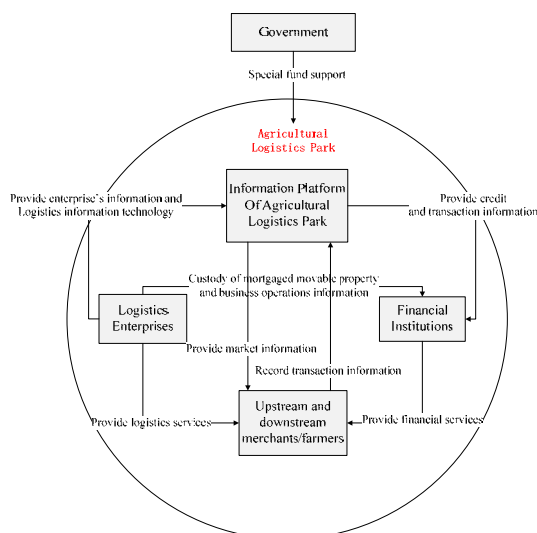


Figure 1. P2B supply chain finance mode based on agricultural logistics park information platform

As a provider of financing services, financial institutions link the capital flow between various nodes in the agricultural supply chain to provide loan and management settlement services for upstream and downstream enterprises. Logistics enterprises participate in all circulation activities of agricultural products in the supply chain, keep chattel pledged, monitor the production and sales situation of each enterprise, and help financial institutions to reduce credit risks. The government agency is the policy guarantee for the operation of the agricultural logistics park. It provides special fund support for agricultural logistics park and guarantee for financing parties, which play a role in dispersing and transferring risks for supply chain finance.

## **4.2 Operation Process of P2B Supply Chain Finance Mode**

Effective management system can improve the efficiency of supply chain finance[6]. P2B supply chain finance mode is implemented by relying on the information platform of agricultural logistics park, and it is realized through the three mechanisms of information sharing, strategic cooperation and self-compensation. The specific operation process of P2B supply chain finance mode is as follows:

- (1) The platform records and stores transaction records of upstream and downstream SMEs, and credits them according to historical transaction information;
- (2) The information platform signs an agreement with financial institutions to obtain a certain amount of credit. At the same time, financial institutions entrust the information platform to manage some financing activities, including information collection and document review of financing enterprises;
- (3) Financing enterprises apply for financing to the information platform;
- (4) The information platform reviews the information of financing enterprises and submits the list to the bank;
- (5) Financial institutions issue loans and sign loan contracts with financing enterprises;
- (6) The logistics enterprise supervises business activities of financing enterprise, and provides operational information to the bank;
- (7) The information platform shows that the financing enterprise's trading activities are completed, and the loan amount is automatically deducted and returned to the special account of the financial institution, and the loan is repaid;
- (8) Cancel the loan contract and form a good loan record.

In fact, the stability of the financing platform is closely related to the credit relationship between the participating enterprises[7-9]. Supply chain finance services relying on the information platform can improve the credibility of information through the effective recording and analysis of transaction information. At the same time, the transaction credits of various small and medium-sized enterprises on the platform are converted into financial credits for enterprises to apply for financing business from financial institutions, which avoids the incomplete collection of information and financing information of financial institutions, and effectively reduces the risk of financing credit.

## **5. Summary**

As an integrator of the supply chain of agricultural products, the agricultural logistics park designed to better achieve coordinated operation of the supply chain by building an information platform and provide more complete and comprehensive services for the upstream and downstream enterprises of the supply chain. The information platform is based on the symmetry of networked information to build a farmer credit management system. It integrates the production, sales and logistics of agricultural products into the service scope of the logistics park, and conducts tracking management throughout the entire process. This is used as the basic information and credit rating basis for SMEs credit management, thus solving the financing difficulties of agricultural supply chain finance. With the gradual improvement of the rural financial system and the development of agricultural logistic.

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