

Exploring the Optimal Path of Small Farmers in Heilongjiang to Integrate into Modern Agriculture

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Abstract: The consensus has been reached that small farmers need to integrate into modern agriculture through agricultural industrialization. However, regional development disparities determine the varying integration pathways for small farmers. This paper addresses the income enhancement challenges faced by small farmers in Heilongjiang Province and the availability of agricultural resources in their regions. It proposes a strategy centered on the entire agricultural industry chain, using shareholding cooperation as the primary link to integrate small farmers with village collectives, agricultural cooperatives, and leading enterprises. This approach aims to guide small farmers from low-value planting operations into high value-added sectors such as agricultural product processing and sales. By ensuring fairer benefit-sharing mechanisms, this initiative gradually achieves the goal of aligning smallholder farmers with modern agricultural systems.

Keywords: Small Farmers; Agricultural Industrialization; New Agricultural Business Entities

1. The Integration of Small Farmers into Modern Agriculture is an Inevitable Way to Promote Agricultural Modernization

The Chinese government proposed to advance the modernization of agriculture with Chinese characteristics and achieve an organic connection between small farmers and the development of modern agriculture in 2017. The small farmers mentioned in this article refer to agricultural operating organizations that conduct production and business activities on a household basis^[1]. In China, there are still a large number of small farmers who contract small plots of land in backward ways and engage in

semi-self-sufficient agricultural production independently. The modern agriculture discussed here is driven by institutional and mechanistic innovation, combined with the necessary material conditions for agricultural development, to jointly build an advanced agricultural production system, an efficient agricultural operation system and a complex agricultural industrial system (integration of three industries), and finally realize rural revitalization^[2].

How to integrate scattered small farmers into modern agriculture has become a world-wide problem. Western developed countries successively realized agricultural modernization through agricultural industrialization, in the 1960s. Afterwards, some emerging industrial countries and regions have further verified the correctness of this path through practice. Therefore, the Chinese government has also chosen the strategy of promoting agricultural modernization through agricultural industrialization. The central government has repeatedly emphasized in its documents, township government organization need to rely on rural characteristic advantages and build a whole agricultural industry chain. So that, farmers have more opportunities to share the value-added benefits of the industry. These policies fully reflect that the Chinese government has started the planning of modern agricultural industrial system, which not only improves the value creation space in multiple dimensions, but also actively explores the best path for small farmers to integrate into modern agriculture according to local conditions.

For a long time, the dispersion, lagging nature, and isolation of small farmers in China have been the most direct obstacles to their integration with modern agriculture. Only by promoting stable interest linkages between small farmers and other business entities within the agricultural industrial organization system, small farmers can

break free from the operational difficulties^[3]. The Government Work Report further explicitly proposed focusing on the development of new business entities such as farmers' cooperatives, family farms, and leading agricultural enterprises, encouraging them to establish "community of shared interests" with small farmers. The primary approach to guide small farmers is agricultural production social services. Agriculture moderate large-scale, cost saving and efficiency increasing and circular agriculture can realize through it.

2. Analysis of the Current Situation of Small Farmers Embedded in Modern Agriculture in Heilongjiang Province

The coordination between small farmers and agricultural industrialization is a problem of matching "dispersed individuals" with "scale system" essentially. "organization" is the first threshold for small farmers to enter the industrial chain. Under the guidance of central and local governments, small farmers across the country have participated in a variety of organized forms: "Farmers' association with agriculture-related enterprises", "Farmers' association with cooperatives", "Farmers' association with village collective economic organization", "Farmers' association with family farms", "Farmers' association with large agricultural growers", and "Farmers' association with cooperatives and enterprises and village collective economic organization" composite business entities. They operate in a mixed mode, including "land trust and Land substitute farming, Shareholders With the Land-Use Right, and large-scale rural land transfers." Guided by national policies, works of agricultural socialized services have become a bridge connecting small farmers with modern agriculture and entered a phase of comprehensive promotion after small farmers are organized.

Heilongjiang Province, located in the northeastern part of China, is the northernmost and highest-latitude province in the country. All the time, Heilongjiang has been a major agricultural province in China due to its advantage of having the largest cultivated land area nationwide. Its total grain output has consistently ranked first nationwide more than 10 years. The contribution rate of agricultural science and technology progress reached 70.3%, and the scale of high-standard farmland also

ranked first in the country. Hear, the rural population accounts for 32.9% of the total population(2023)^[4]. With the development of agriculture, the number of new agricultural business entities has seen significant growth in Heilongjiang Province. Heilongjiang Province registered 95,000 farmer cooperatives and 61,700 family farms (in 2021)^[5]. A mutually reinforcing relationship between agricultural production socialization services and small farmers. Small farmers are also gradually moving from the periphery to the interior of the industry. A new development paradigm has established in Heilongjiang Province. The comprehensive mechanization rate of agriculture reached 98% and land scale efficiency improved significantly. More than 50 mu of cultivated land accounts for 57% of the total cultivated land^[6]. Meanwhile, the levels of disposable income for small farmers have increased annually, as Figure1.

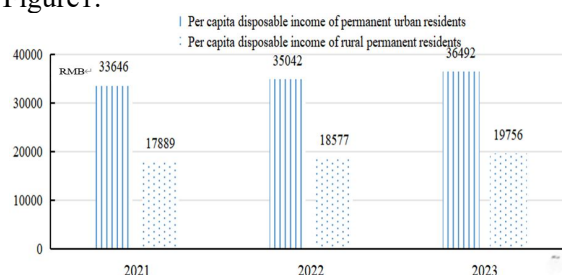


Figure 1. Household Disposable Income of Urban and Rural Residents in Heilongjiang Province (2021-2023)

Source: Heilongjiang Bureau of Statistics, Heilongjiang Statistical Yearbook (2024)

However, in the process of socialized agricultural production services, the relationship between small farmers and new business entities in Heilongjiang can only be regarded as a new type of paid mutual assistance in the field of production, and the establishment of a community of interests can't be defined.

3. The Core Dilemma Faced by Small Farmers to be Embedded in Modern Agriculture in Heilongjiang

As we all know, our ultimate goal is to integrate small farmers into modern agriculture, narrow the gap between urban and rural areas, and let small farmers share the dividends brought by modern agriculture. As can be seen in Figure 1, although the disposable income level of small farmers in Heilongjiang is increasing, the significant trend of narrowing of the urban-rural income gap did not appear in the region.

Compared with the Zhejiang regions where agricultural development is faster, the overall Household disposable income level of small farmers in Heilongjiang province in 2021-2023 is obviously low, as shown in Figure 2. From the perspective of the distribution of household disposable income, the disposable income of Heilongjiang's small farmers from farming accounts for about 50% (mainly from the primary industry), from transfer income brought by agricultural subsidy policies accounts for about 20%, and income obtained in nominal wage accounts for less than 20%. Thus it can be seen that the identity of small farmers as part-time farmers is still a common phenomenon in Heilongjiang, and they are concentrated in the agricultural planting field with low output value. Comparing the economically advanced Zhejiang region, we can more intuitively identify the root causes of increased income for small farmers in Heilongjiang. Located in eastern China, Zhejiang Province is characterized by a terrain pattern of "70% mountain, 10% water area, and

20% farmland". According to the results of the fifth national economic census and the national GDP accounting system regulations, the Zhejiang province's industrial structure was 2.9:39.2:57.9 in 2023. The agriculture accounts for a relatively low proportion in Zhejiang, while processing and services have developed more rapidly. The rural population accounts for 25.8% of the total population in Zhejiang, yet only 5% are employed in the primary industry.

In Zhejiang, disposable income level of small farmers approach to urban household disposable income in Heilongjiang, and approach to about twice that of rural disposable income. Another, wage income accounts for nearly 60% of small farmers in Zhejiang, and business income from secondary and tertiary industries accounts for about 70%^[7]. This fully shows that the process of small farmers in Zhejiang moving towards agricultural modernization is faster. Heilongjiang's small farmers still has a big gap to catch up with the level of urban areas.

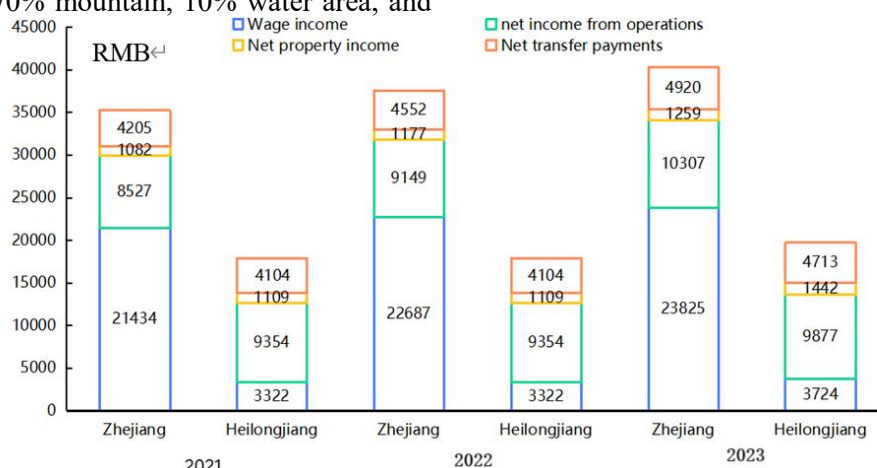


Figure 2. Comparison of Disposable Income of Small Farmers in Heilongjiang and Zhejiang (2021-2023)

Source: Zhejiang Bureau of Statistics, Zhejiang Statistical Yearbook (2024)

From the perspective of the current structure of disposable income of small farmers in Heilongjiang, agricultural social services have changed the decentralized employment status of small farmers. But, participation in the creation and sharing of the potential dividends of agricultural modernization is less. There are two reasons for this. First, Through the social service of land trusteeship, small farmers have established short-term and temporary contractual transaction relationship with various new agricultural business entities, and thus obtained additional income. Long-term and stable "risk sharing and benefit sharing" interest alliances are

rare; Second, the connection between small farmers and new business entities is mostly in the upstream of agricultural production, while agricultural processing, storage, logistics and marketing are still lacking of direct participation by smallholder farmers. The path for small farmers to move towards the secondary and tertiary industries has not been completely opened up, the weak position in market competition has not be reversed, and the benefit sharing mechanism hasn't been established in Heilongjiang province.

4. Planning for Cross-Industry Development

Path of Small Farmers in Heilongjiang

As is known to all, for small farmers in Heilongjiang want to participate in agricultural industrialization through the agricultural social service system and come into the development trajectory of modern large-scale agriculture, small farmers first should go to establish robust, long-term alliances with entities along the industrial chain, and form a cohesive community. Among various agricultural business entities, Who can guide small farmers to enter the agricultural industry center and become the subject of value sharing? It has always been many focus of scholars and agricultural practitioners.

The farmer cooperative is the earliest new-type business entity, originated as a rural mutual aid organization. The goal of the farmer cooperative is Designed to maximize collective benefits for all members (voluntarily joined smallholder farmers).The farmer cooperative have uniquely leveraged in uniting scattered small farmers. However, during the process of development, the monopolistic influence of capable individuals and major members in management decisions gradually marginalized weaker small farmers. Moreover, The limitations of the farmer cooperatives in resources (talent, capital, technology) make their development very difficult^[8].

In recent years, the new family farm as rural-based cooperative economic entities is strongly supported by the state. There ability is weaker than farmers' cooperatives in uniting small farmers. While these new family farms enhance land scale and mechanization through land transfers or trusteeship arrangements. And they already have developed awareness of green production, agricultural processing, and circular planting and breeding. However, constrained by operational capabilities, information access, and financing limitations, the owners of family farms in Heilongjiang still fail to help small farmers achieve their ultimate goals^[9].

At present, there are still some agriculture related enterprises in the field of socialized service of agricultural production. There are many kinds of agricultural enterprises. Some are leading agricultural enterprises in the whole industrial chain, some are professional agricultural product processing enterprises ; some engaged in agricultural materials and selling agricultural products; some are agricultural information technology service

enterprises, and so on. Although they are foreign intermediary organizations, they are pioneer organizations leading farmers to become rich. Not only They pursue the realistic goal of economic benefits, but also help rural revitalization and help small farmers achieve the dream of common surplus. However, in the process of practice, it is found that in the high risk of agricultural production and the social network relationship in rural China dominated by acquaintances, the relationship between foreign enterprises and small farmers based on contracts is not solid. In the process of cooperation, enterprises not only have to bear the high risk of maintaining the contractual relationship, but also face the high labor risk cost of employing and supervising the labor force of small farmers.

As a collective entity integrating various village relationships, the responsibilities of the village collective organization are two main parts: first, implementing national policies and village governance at the higher level; second, connecting farmers through organizational and service at the grassroots level. It also acts as a bridge connecting other village collectives and agricultural organizations to build extensive social networks. With the implementation of the household contract responsibility system, the collective's leadership over small farmers has diminished. As a result, small farmers have more opportunities to make their own decisions^[10].At the same time, small farmers also found that the lack of the protection of the village collective brought about the disadvantages of development. In the process of small farmers' independent development in agricultural production, the technology update is relatively lagging behind. and small farmers' control over market competition factors is also relatively weak. Therefore, small farmers have new expectations for the unified management of village collectives. However, from the perspective of the current management ability and management level of village collective organizations in Heilongjiang, it is also very difficult to independently lead small farmers to modern agriculture.

In summary, the current economic organizations that leading small farmers in Heilongjiang have deficiencies. Only by establishing an open and borderless organization, we can more easily integrate superior resources and achieve the agricultural industrialization process of tertiary industry integration^[11], as shown in Figure 3.

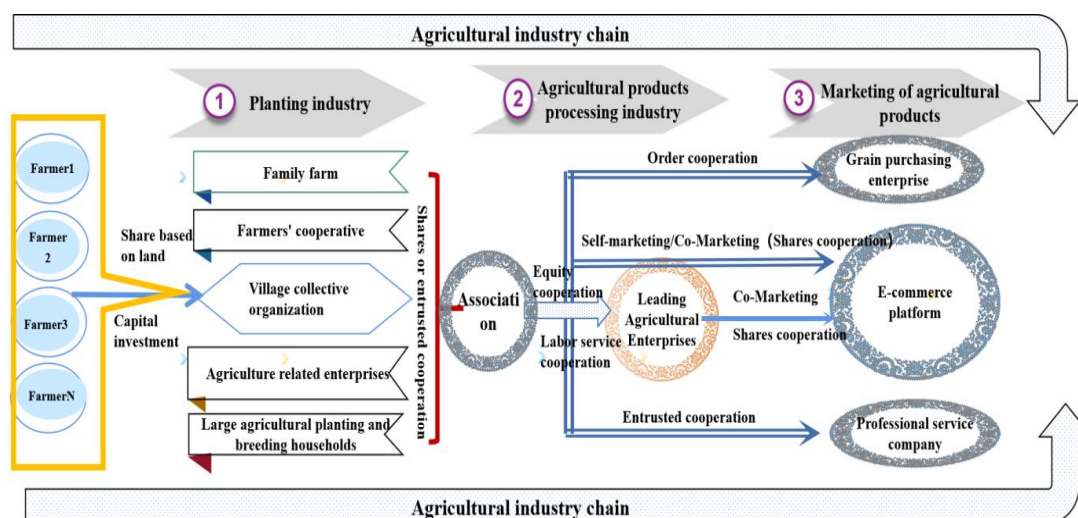


Figure 3. The Path for Small Farmers to Integrate into the Whole Industry Chain to Realize Benefit Sharing and Value Creation

In the upstream of the agricultural industry chain or the planting industry, village collectives can switch from supervisory role the spokesperson of the community of small farmers' interests. The village collectives can guide small farmers in establishing cooperatives. These farmers voluntarily contribute land or capital as shares to join the collective cooperatives. The village collective then collects the scattered land of small farmers through land exchange and other ways to enhance the degree of large-scale production. The village collective can also play the function of building a huge social relationship network, and establish interest consortium with various economic organizations from internal and external through stock cooperation or entrusted cooperation. With the help of the interest consortium, we can further promote mechanization, informatization and cost savings and efficiency gains while improving the productivity of land.

For a long time, China's decentralized and small-scale production mode has cut off the internal connection in the whole industrial chain of agricultural product production, processing and sales. Due to the lack of market operation ability, scattered small farmers have to give up the acquisition of high profits in the tertiary industry. Nowadays, in this open platform system, small farmers can't only be separated from the agricultural production end, but also because of the geographical and cooperative relationship between Agricultural Organizations, they have the opportunity to participate in the value creation and profit distribution of midstream and upstream of agricultural industry chain.

In the midstream and upstream of the industrial

chain, small farmers can sell the olive branch of cooperation to agricultural leading enterprises in the whole industrial chain, agricultural product processing enterprises, agricultural product retail enterprises or professional marketing platform company that are independent of the core industry through village collective cooperatives or association. the processing plants of these advantageous enterprises land in the country of origin and make direct sales in the country of origin possible by taking shares in raw materials of agricultural products, or Investing in agricultural land occupied by processing plants, logistics and transportation centers or supplying the labor resources. In this way, small farmers can not only share the value gain in the midstream and upstream reaches of the agricultural industry chain as shareholders, but also obtain an additional wage income as employees. At this time, the labor export of farmers will no longer be the transfer from other places, but the industrial transfer. Small farmers also participate in the value creation process of the whole industrial chain because of the interest community established by share cooperation. With the community of interests as the starting point, not only can high-end agricultural products find the appropriate market positioning, but also small farmers have more income generating space.

In summary, each agricultural entity of small farmers' association has its own advantages. If the advantageous resources of these operating entities are efficiently integrated and complementary advantages are realized, it will be more conducive to accelerating the integration process between small farmers and

modern agriculture in Heilongjiang region.

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