

Research on Shackles of Agricultural Modernization in Northeast China

-Taking the Promotion of the Western-style Agricultural Machinery in Northeast China as an Example

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Abstract: In the late Qing Dynasty and the early Republic of China, with the gradual development of social economy, agriculture in Northeast China also gradually began to modernize. In this context, businessmen from western developed countries saw the opportunity to actively promote their advanced agricultural machinery through various marketing strategies. Although they achieved satisfactory results in the initial years, their sales gradually weakened over time. Due to the lagging sales of Western-style agricultural machinery, agricultural production in most areas continues adopted the old method until Japan occupied the northeastern China in 1931. This phenomenon was result of the combination of multiple factors, such as special farming conditions, weak farmers' economy, low self-organization ability of farmers, low labor cost, and complicated operation of western agricultural machinery. These adverse factors are also the shackles of the modernization of agriculture in Northeast China.

Keyword: Northeast China, modernization of agriculture, Western-style agricultural machinery, shackle

1. Introduction

One of the most important ways to modernize the development of agriculture in the world is the extensive use of advanced agricultural machinery, because the use of advanced agricultural machinery can greatly improve the efficiency of agricultural production, liberate manpower, and promote the scale of agriculture development. In addition, the development of agriculture will also lay a sufficient material foundation for the development of urban industries.

Northeast China is relatively primitive and backward in production technology due to the late ban policy of agricultural development in history. However, the natural geographical conditions of northeast China are extremely superior. Due to the large plains, it has a very vast amount of arable land, which is fully conducive to the development of an agricultural scale using advanced agricultural machinery. In the early 20th century, Western merchants tried to extend their advanced agricultural machinery to this region on a large scale, but the final effect was not very ideal. This paper tries to

analyze the causes of this problem from various perspectives, and analyze the shackles of agricultural development in northeast China.

2. The Agricultural Modernization in Northeast China

For a long period under the rule of the Qing Dynasty, the government prohibited mainland people to the Northeast for farmland development and cultivation. In this context, Northeast agriculture has always been in a barren and undeveloped state, and agricultural production is extremely backward. Especially, the tools technology required for agriculture are limited by the technical level and still remain in the agricultural society period. [1].

In the late Qing dynasty, with the changes of the internal and external situation, the Qing government gradually relaxed the restrictions on the immigration and land reclamation in this area. In order to develop of the agriculture in this region, the Qing government issued a series of agricultural development policies, such as establishing new government agricultural research institutions, management institutions, and agricultural experimental institutions, while vigorously introducing western good varieties and advanced tools. Under this guidance, private capital also began to enter this area and set up agricultural reclamation companies. In 1907, Chen Guqi founded the Agricultural Reclamation Company in Heilongjiang Province, using advanced agricultural technology to purchase harvesters and harvesters for production. With the increase of these positive factors, the Northeast agriculture began to stride forward to the modernization. After the establishment of the republic of China, a total of 137 agricultural reclamation companies were established from 1913 to 1920 [2].

With the initial development of agricultural modernization in northeast China, the demand for advanced agricultural machinery has also gradually increased, According to the records, the US consular officials were optimistic about the prospects of agricultural machinery sales in the region. He mentioned that if the agriculture in the northeast can develop according to the plan reported by the Chinese government, then the region will be an area very conducive to the popularization of machinery. Moreover, this is necessary to encourage Chinese farmers to adopt western agricultural methods, guiding them to use modern appliances and machinery, as well as requiring years of persistence and patience [3].

3. The Western-style Advanced Agricultural Machinery

In response to the increasing demand for agricultural machinery, some Western businessmen are trying to seize the business opportunity to sell their agricultural machinery to northeast China. "With the development of agriculture in the region, it proved to be a successful model if some cheap machinery could be introduced. The company will introduce such a machine to work systematically, taking out a machine for free teaching. Once it is appropriate, there will be a very good sales volume" [4]. Inspired by this method, some American machinery, such as a millet thresher, mower, multi-angle rake tillage, and other introduction experiments, have achieved good results. The daily workload of each machine is above tens of mu, and its efficiency is far more than that of the local original farm tools.

In order to further promote its products, a number of American companies also directly opened institutions in northeast China, such as in 1921, which specialized in trucks, tractors, engines, and various farm tools. And later, it set up more than 60 commission stores throughout the northeast [5]. At the same time, in an environment of foreign exchange fluctuations, American manufacturers usually adopt the method of import and export joint trade to avoid risks and obtain greater returns [6]. It can be seen that Western businessmen represented by the United States have used various marketing strategies to promote advanced agricultural machinery in Northeast China as much as possible. At first, the tireless efforts of western businessmen yielded some fruit, but over time, its

sales volume gradually fell back, far from meeting the expectations of U. S. officials, as shown in the Table 1.

Table 1: Dalian agricultural machinery import from 1915-1929[7].

| Years | Value(Hk.Tls) |
|-------|---------------|
| 1915 | 2703 |
| 1918 | 46,157 |
| 1921 | 658,767 |
| 1924 | 142,401 |
| 1927 | 314,033 |
| 1929 | 561,037 |

According to the customs report recorded in the three northeastern provinces and Liaoning Province, there has been no progress in the introduction of modern machinery, except for experiments at the experimental farms at one and two places in the province [7]. In Heilongjiang province, methods of farming have not developed to the point where tractors and other mechanical implements could be profitably employed. Some modern machines were purchased, but the ratio of the quantity of the cultivated land area was very small [7]. At the same time, in Jilin Province, agronomic methods are still primary, and farm tools are still using iron plow [7]. .An excellent example is the wheat and corn farms in multiple provinces in central North America. However, the agriculture in northeast China has not been rid of the era of livestock farming, and agricultural machinery has not been widely promoted [8]. In this case, many sales machinery companies in northeast China also encountered great difficulties in their operations.

4. Analysis of the Blocked Factors

The failure of western advanced agricultural machinery to be popularized in northeast China is closely related to the local situation in northeast China itself.

4.1. Imported Agricultural Machinery Is Not Applicable

Many imported agricultural types of machinery are not entirely applicable to farming in different situations. In ordinary farming, the local plow is still light. However, if farmers want to get the interests of deep ploughing, it is not as good as the foreign plough. When using foreign plough, must use horse rake, is a certain trend. However, in the local spring, when the rain is less, if a foreign plough is used, then self-cultivation and sowing will be done in a day, it seems that it is better to use the local plough [9].”The simultaneous use of a foreign plough also leads to th profit right spillover, and the sowing, hoe and shovel, medium tillage, ridge sealing and other machines made in Europe and the United States are not suitable for planting in northeast China” [7].

4.2. Farmers Have Low Incomes

In the process of increasing commercialization of agriculture in northeast China, farmers are often exploited and squeezed in the process of selling their agricultural products by multiple links, and the final income is very meager. For example, if a ton of soybean is transported from Qiqihar via Dalian to Europe, the estimated price of five pounds. The peasants gained only eight shillings. However, import tractor in Dalian import price is 300 pounds each, and the farmers felt powerless to buy them” [7].

In the 1910-20s, the political situation was unstable, and warlords were divided. Frequency wars not only result in the direct loss of material supplies, but also the defeated party pass on the losses to the peasants to the greatest extent possible. These warlords exploited the peasants as much as possible in various methods, including heavy taxes, the collection of grain, the recruitment of soldiers, official corruption, and abuse of power. All these behaviors caused the farmers' economy tend to shrink'' [10]. In addition, the harsh social security environment in northeast China was even worse for agricultural production. At that time, resulting in the safety of the lives and properties of ordinary people [11].

Furthermore, landlords exploited peasants to the extreme under the feudal land ownership. After the First World War, with the recovery of the European market, soybean exports increased, and the prices of soybeans and other agricultural products soared. Increased soybean exports and soaring food prices stimulated landlords to pursue profits. As grain prices soared, the high physical rents also soared, even to 70 percent of the total harvest [12]. Faced the offensive of economic interests, Manchuria farmers lack the ability to prevent their own standard of living decline. Under the boundless pressure, farmers' lives got worse and worse'' [13].

4.3. Farmers' Collective Cooperation Consciousness Is Weak

In the face of multiple adverse economic factors, ordinary farmers' collective sense of cooperation is weak, and their willingness to buy machinery is not strong. Northeast China's rural economy is not as developed as the rest of the country's in modern times because the region lacked a self-sufficient natural economy, which was prioritized. Agricultural management mode was more than family individual family type scattered production and management, even as the commercialization of agricultural products and the natural economy tend to collapse. In the Manchuria Economic Annual Report, it is mentioned that the agricultural production technology in northeast China is a labor-intensive and scattered operation, which was almost just like that in mainland China [14]. This long-term individual production and operation mode made the ordinary farmers' ideological individual consciousness very strong, and the idea of collective cooperation in production and operation was not very strong. For the farmers in northeast China, very few people have the extra money to buy the agricultural machines, and they also have very little willingness to buy them [15].

4.4. The Labour Costs Are Low

Using expensive agricultural machinery in agricultural production was often more cost-effective than using human labor due to lower labor costs. In the late Qing Dynasty and the early Republic of China, a large number of peasant immigrants from Hebei and Shandong poured into the customs, and brought a large number of cheap laborers to the northeast of China. At the same time, there were countless local farmers who were exploited by landlords, bureaucrats, and foreign businessmen. The majority of whom could not be absorbed by urban industry and were confined to the countryside. Because of the large number of poor farmers crammed into the countryside, labor was extremely cheap, and hiring low-cost labor in production was often more cost-effective than using expensive machinery. After the September 18 incident, the Japanese authorities created a special investigation agency to investigate this problem. By comparing the results of the cost survey of traditional and large manual farming methods and mechanical farming methods, the conclusions are shown in Table 2:

Table 2: Comparison of traditional and machinery (Unit: yen) [16].

| Crop | Soybean | Kaoliang | Rice | Corn |
|------------------|---------|----------|-------|--------|
| Traditional area | 120.31 | 106.70 | 79.86 | 110.83 |
| Mechanical area | 126.75 | 118.83 | 63.55 | 129.81 |

It can be seen that the use of mechanical farming methods is more expensive than the traditional large-scale use of labor farming methods.

4.5. New Agricultural Machinery Operates in a Complex Manner

Because the advanced operation of the new agricultural machinery was more complex than the traditional farm tools, and the general cultural quality of ordinary farmers was not high, there was a lack of understanding of the new machinery. This also largely limited the promotion and use of new machinery. For example, in the process of promoting agricultural machinery in northeast China, a very embarrassing situation arose. It was much hoped that an extensive introduction of machinery would bring to Manchuria the prosperity it has brought to other parts of the world, but it must be admitted that up to the present the measures have been a failure. The lack of intelligent drivers to work the tractors, not to speak of competent mechanics, has proved an insuperable difficulty. The substitution of cheap bean oil for expensive machine oil appears to be a simple expedient for the average Chinese driver-coolie, with the result that the tractor was quickly turned into a heap of scrap iron. Such sad experiences have caused a great check on the use of these more expensive methods, and the end of this decade has seen a general reversion to more primitive methods of cultivation [7].

In addition, agricultural machinery in the process of large-scale promotion and use in the vast rural areas can inevitably suffer damage and depreciation, so it would inevitably involve the maintenance of machinery, parts replacement, and other subsequent problems.

5. Conclusion

Since modern times, as the northeast China agriculture gradually modernization, western businessmen have sought to obtain economic benefits by making its production machinery products widely sold to this region, but the local special natural conditions and multiple adverse factors related to the fragile agricultural economy, low labor costs, a low level of intelligence, and the lack of industrial ability have made western advanced agricultural machinery less popular. Northeast agriculture still did not get rid of its past primitive, backward appearance, which also became the shackles of agricultural modernization.

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