

Agricultural Production and Research in Heilongjiang Province,

China

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Abstract

The agricultural production of Heilongjiang province is in an important position in China. In this paper, the features and the difficulties we face in agricultural production of the province are given, the reasons causes this difficulties are analysed, and methods of adjusting the structure of the agricultural economy and solving this problems are provided.

1. Background

Heilongjiang province locates in northeast China, and covers `453.9 thousand km². The province has a long cold winter and a short summer, but with sufficient sunshine for good crop production. The cold air frequently comes into the area and the early frost hazard often occurs in autumn. The average annual precipitation is 400 – 700 mm, with 60% of the rainfall concentrated in the period June to August. Therefore, spring droughts can occur and summer flooding can cause severe problems. The time period without frost is about 100– 140 days annually. By the end of 1995, the population was 35.7684 million, and 55.3% of the total population live on agro-production and live in rural areas. In 2001, the total farmland was 9 million hm².

2. The Economy in the Rural Area

In 1995, crop production was 25.52 million tons, oil crop and sugar beet output were 0.201 million tons and 5.008 million tons respectively. Meat and aquatic products were 1.065 million and 0.253 million tons respectively.

In 1996, the total crop production was 30.46 million tons, with oil crop output 0.363 million tons, sugar beet output 3.298 million tons. Meat and aquatic products were 1.065 million tons and 0.253 million tons respectively. The net income per capita of farmers reached 212\$.

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In 2001, the food crop area was 8.5 million hm^2 , with the total yield 53 million tons. The plantation structure ratio for food, economic crop, and forage crops was 76.7: 21.4: 1.9 respectively.

In 2001, the total meat, egg, and milk production reached 1.75 million tons, 0.813 million tons and 1.9 million tons respectively. The output value of livestock and poultry production was 2.7 billion \$, which was 31.6% of the total output value for agricultural production. The total aquatic area was 0.42 million hm^2 , and the value of the fishery output was 0.41 billion \$. The green crop area in the province was 0.69 million hm^2 ; the income per capita of farmers from green crops increased to 25 \$ in 2001 from only 7 \$ in 1999.

The business income of township enterprises has reached 16.43 billion \$. The net benefit was 0.72 billion \$, with tax revenue of 0.19 billion \$. 1.8 million rural workers move from the land to work in the city each year. The net income per capita of farmers has reached 275 \$.

3. Features of Agricultural Production

The agricultural production of Heilongjiang province is in a special position in China. It has the largest cultivated land area per capita, the highest soybean and sugar beet yield, and the highest level of agro-machinery of all provinces in China. Rice production is developed very quickly in recent years; the plantation area has reached 15% of the total crop plantation area of the province, and the yield is 20% of the total output. Heilongjiang is the major spring wheat area in China, and the unit wheat yield has greatly increased since we introduced a Canadian spring wheat variety. With luxuriant forestry in the mountain area, Heilongjiang has one of the richest forest resources in China. Wood storage is about a quarter of the total for the whole of China.

With a 1.57 million population, Heilongjiang State own farms play a very important role in Heilongjiang agricultural production. They occupy 55.3 thousand km^2 and 1.93 million hm^2 of arable land. The area of pasture land is 1 million hm^2 and the food output is 4.144 million tons. Here you can find almost any kind of advanced agricultural machinery from developed countries and the advanced management, it like a window, where you can image what the agricultural future of the province looks like.

The potential agricultural production in the province is very high. The first reason for this is the rich land resources, 1.3 million hm^2 of undeveloped land being available for arable land, which is 10% of similar land in China. The second is the even topography and the large area of arable land per capita, which is suitable for large agricultural machinery. The third is the large area of low yield land with a large potential for increasing yield.

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4. The difficulties we face in the agricultural production

We face many difficulties in the agricultural production. The first is agricultural product selling is difficulty affected by market changes, and this causes prices to fall and the farmers' income increase to slow down. The rural economy is in a difficult development stage. Up to the end of 2001, the total crop storage in Heilongjiang province was 44.32 million tons. Meanwhile, there are few varieties to be selected and the quality of grain need to be improved. The second difficulty is a lot of grain is imported, which is high in quality and low in price. China has become a member country of WTO. As an agricultural province, entering WTO will greatly influence its agricultural production. In the long term, the advantages may be dominant, but in the short term, the disadvantages outweigh the advantages. The prices of the main local grain crops such as wheat, corn and soybean are 20% to 50% higher than the price of world markets. With the imports of international competition grain, the price of local grain must fall in order to sustain sales. Entering WTO is a great challenge for local agro-production in short time. A number of factors cause the above difficulties:

(1). The grain planting area is more than 70% of the total cultivated area, and the income from grain production is still a large proportion of the farmers' income. Green crop production and livestock and poultry production are still on a small scale.

(2). The quality of agro-products need to be improved. The oil content of the soybean is 2% lower than American soybean and impurity is 1.5% higher; the corn's starch content is rather low and water content is high, also, the quality of beef, pork and chicken production is lower than the international standard.

(3). The cost of agricultural products is high. A number of factors contribute to the high price, include farmers' small businesses, low agricultural machinery level and low productivity technology. Currently, the scale of farms is ranged at 3 hm² and so on, which is 1/40 to 1/30 of an American farm. The annual crop production per labor force is 5 tons, which is 1/80-1/70 of the equivalent American system. The cost of soybean and corn in our province are 30% and 37% higher than that in American respectively; due to the high price, the products are in a weak position in the world markets.

(4). The low processing level of agricultural products. Most agricultural products are sold as raw materials. The ratio of raw material value to processed product is 1:0.4 in our province, but it is 1:3 and even 1:4 in developed countries.

(5). The small scale and low level of organization. The specialization, socialization and productivity level are low. Therefore, it is difficult for farmers to enter markets and have a strong market competition ability.

5. The structure Adjustment of the agricultural economy

The key way is to adjust rural economical structure to enhance the market competition of agriculture and to increase the income of farmers for our province. The main ways are as follow:

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(1). Reduce grain cultivated area. After entering WTO, the grain production is one of the industries that are affected seriously. It is necessary to return some of the grain cultivated land to forestry, grasslands and wetlands, and develop economical crops and forage crops. This year, the structure of grain, economical crops, and forage crops will be adjusted from 76.7:21.4:1.9 to 73:24:3.

(2). Speed up the development of livestock and poultry production. In Heilongjiang province, the most competitive industries are livestock and poultry and green crop production. This should be the strategic focus and hopeful development for agriculture and the rural economy in the future. the output of livestock and poultry products will increase over 10% compared to last year and can reach 35% of total value of agricultural production in this year

Developing livestock is mainly for milk, beef and pig production. We should develop a group of professional counties for pig, chicken, cattle and sheep, and develop industries to process milk products. In this year, the dairy cattle will be increased by 850 thousand, fresh milk output will be 2.12 million tons and 2.1 million beef cattle will be delivered for sale. The province will be developed into an important milk and beef cattle production and export base. In order to fulfill the above task, we have much work to do: Build an excellent livestock breeding system, and introduce good livestock breeds; improve the quality of livestock production based on international standard products; Implement the appropriate scale of production; Develop processing industry of livestock and poultry and build livestock service systems; pay more attention to prevention and inspection of livestock disease. The epidemic diseases not only affect livestock market development and cause economical loss for farmers, but also influence the health safety of food and export benefits, we must do three things well: provide completed disease prevention standards with the construction of a perfect animal epidemic prediction net; establish a system for important disease prevention and control; seriously follow the international standards in production, process, storage and transport.

(3). Develop green agro-production. There is an ideal conditions for developing green crop production in our province, currently, the green crop area has risen to 0.8 million hm², with the output 6.0 million tons and selling income at 1.75 billion \$.

(4). Raise the level of agricultural industrialization. Developing agricultural industrialization is very important. The key method is to develop leading enterprises. It is necessary to consider different methods, such as combination and reorganization to establish large scale, high technology and competitive businesses as leading industries. We need to take up the opportunity to attract more foreign companies to develop agricultural product processes and trading.

(5). Establish agricultural standard system and speed up the connection with international standard. It is impossible to compete in international markets without a

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good quality. For this reason we need to establish a quality standard system for agricultural products. The local standards cannot meet the requirement of agricultural production. We should revise the agricultural production quality standard of our province according to the international standards of developed countries; hence managers can organize agricultural production according to the new standards. To achieve standard production, we should introduce new and advanced technology and train farmers. The standard production should be in every stage of agricultural production from seedling, cultivation, sowing, field management, harvesting and processing. We should select some model farms, which are carefully carrying out standard agricultural production and use them as examples, so that other farmers can learn from them. Farmers are the main group for practicing agricultural standard production. Also, we want to establish the inspection of agricultural products and test systems. In this year, we will build an inspection center at the province level to inspect green crops and agricultural materials, including fertilizers and chemicals.

(6). Reduce the cost of products. In practice, we should take four steps. The first one is to use advanced technology such as inputting fertilizer by measuring soil fertility, saving water irrigation and using large farm machines. The second is to develop an agricultural information net, so that farmers can learn new technology through visiting web sites. The third is to develop large scale business. The government of the province should provide the policy to support large scale land management. The fourth is to reform the rural revenue system and reduce any unreasonable expenses incurred by farmers.

(7). Transfer rural manpower and enlarge the farmers' income. To transfer rural manpower to the city labor markets is an important way to transfer rural ample manpower and increase farmers' income. We should consider agricultural product processing industries as an important way of developing township business. In those economic developed areas, we should develop service industry to enlarge job opportunity, including restaurants, hotels, entertainment businesses, and repair and information services.

(8). Construct basic agricultural facilities to reduce the possibility of disasters. In our province, flood and drought hazards often occur, and these are key factors that affect agricultural production. The important tasks are to build irrigation projects, to develop water saving irrigation technology and to solve the drinking water problem for 1.0 million rural residents. Secondly, develop agro-mechanization, we now import some advanced farm machinery, meanwhile, we have been developing our agro-mechanization system according our local condition. The third is to return some low yield land to forestry, grassland and wetland, which is good for sustainable development and for reforming the agricultural production structures.

To enable construction of agricultural foundation, we have got financial support from the state government and social investments, and we are still making use of

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shares, private investment, and joint investment to increase input and improve the efficiency of rural production.

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