

# A BIG GRANARY

## A northeast China's province drives agricultural modernization of the country

COURTESY PHOTO



A harvest scene in Youyi Farm, northeast China's Heilongjiang Province

In late September, the peak harvest time, workers in Youyi Farm, the largest state-owned farm in China located in the vast plains north of Heilongjiang Province, were racing against time. The corn had already been harvested and the soil turned over, waiting for next year's sowing. As the farmhands worked frantically to gather the rice, there was one noticeable difference. The laborers doing the work were not humans but an army of giant, advanced agricultural machines.

"We finished harvesting maize earlier than other places because of the large-scale use of agricultural machinery, which helped us sell our corn earlier and at a better price," Yang Deqing, in charge of publicity in the farm's fifth administrative zone, said proudly.

As one of the 113 farms under the Heilongjiang Farm and Land Reclamation Administration, Youyi is a pioneer in exploring agricultural modernization. The 55,400-square-km reclaimed land in Heilongjiang, better known as Beidahuang, or the Great Northern Wilderness, started to be developed in 1947.

Back then, the area was just a wide stretch of wasteland. Today, it has been transformed into

the largest grain production base in China and is a leader in implementing mechanized farming and modern agriculture. The annual production can feed more than 100 million people for one year. The former wildland has become a granary of the country.

### Starting from scratch

In the reclamation area, Youyi Farm, sprawling more than 1,800 square km, has a unique position: It was a pilot for mechanized agriculture and introducing the most advanced technology and machinery.

Established in 1954, the farm was one of the major development projects in the early years of the People's Republic of China. It was set up with the assistance of the Soviet Union, which is why it was named Youyi, meaning friendship in Chinese.

The first batch of workers and management personnel came from different parts of the country; most were graduates from colleges or technical schools.

Liu Huangao, today a retired management staff, was one of the young people who started their career on the farm. He has witnessed its

growth from zero to the current success. The 86-year-old, regarded as a walking encyclopedia of the farm's history, described the development course "dramatic changes."

"The Soviet Union donated 2,560 agricultural machines in the beginning and also sent 49 professionals to teach us how to reassemble and operate the machines," he said.

After graduating from an agricultural mechanization school in Harbin, capital of Heilongjiang, in 1954, and undergoing two sessions of training by Soviet professionals, Liu began to work as a tractor driver on the farm.

He still remembers the hardships the first workers—over 1,400 Chinese employees and 49 Soviet professionals—experienced. "There were no roads, and we had to build roads first. There was no drinking water, and we had to use the water obtained by thawing snow. There were no vegetables, and we had to do with pickled beans," he recalled.

It marked China's embarkation on a road of

By Zan Jifang

mechanized farming, a revolutionary transition from the traditional labor-intensive farming mode.

Zhang Fushan, a former worker at the farm, was recognized as a National Model Worker in 1995. He participated in the leapfrog development of the farm after China started reform and opening up in 1978. That year, the farm imported 62 agricultural machines and other equipment from the United States, becoming the first farm in China to introduce the most advanced agricultural machinery in the world. The move greatly narrowed the gap between China and developed nations in mechanized agriculture.

From the 1980s to the end of last century, the farm imported more than 100 agricultural machines, covering every farming process. "The machines were for deep digging, precision drilling and controlling weeds with chemicals, and using them greatly improved the crop quality and reduced the human labor cost," said Zhang, who used to operate the imported machines.

"After importing U.S. machines, the grain yield increased year by year. On an average, a worker could produce 100,000 kg of grain a year at that time," Liu said.

Entering the new century, Zhang, as a senior operator of modern agricultural machinery, went to the United States with other colleagues to look for the latest machinery. "We later imported some machines with information technology and digital control, increasing the precision and standard of agricultural production," he said.

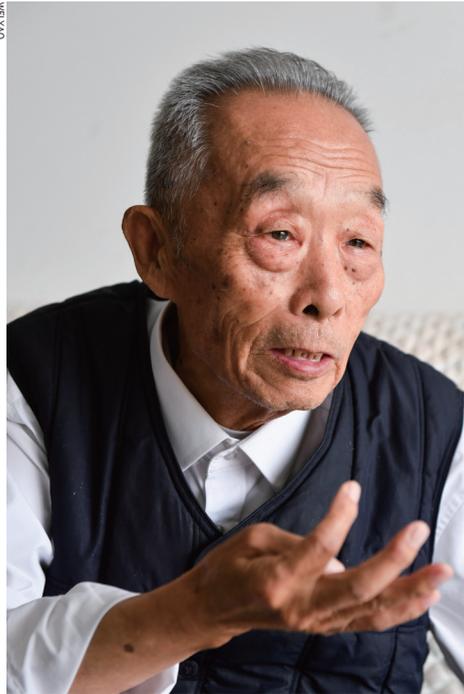
## Agricultural reclamation

The updating of agricultural machinery has given the farm a nearly 99-percent comprehensive mechanization rate as well as a rich experience in agricultural mechanization. It is held up as a model for other farms in the reclamation area. Agricultural mechanization is an important reason for the grain production of the area.

Today, the Beidahuang Agricultural Machinery Garden in Youyi Farm with its display of more than 150 agricultural machines—from the 1950s tractors to today's hi-tech machines, each worth millions of yuan—silently tells the history of the march to agricultural modernization. It was a march in which the farm, the entire reclamation area as well as the country took part.

Benefiting from its abundant land resources, large-scale mechanized farming as well as the dedication of generations of people, the reclamation area today can guarantee the production of 20 billion kg of commodity grain a year. The comprehensive grain production of the area is nearly 22 billion kg a year, around one third of the total output of the province.

Heilongjiang has long been an important con-



Liu Huangao from Youyi Farm

tributor to the country's total grain production, and currently its output accounts for one 10th of the national total. According to provincial government statistics, the total grain output in 2017 was 60.2 billion kg. For seven consecutive years the province has held the top spot in the country for grain production and for five years in a row, maintained the record of growing over 60 billion kg of grain.

The development of agricultural reclamation in Heilongjiang over the past decades was a process of industriousness and self-dependence. Liu of Youyi Farm said when the farm was established, the plan was to make it a base to produce grain, accumulate agricultural mechanization experience and cultivate agricultural management personnel, showing the importance the Chinese leaders then attached to agricultural self-reliance.

## Hi-tech and green mode

Technology is an indispensable element in the transformation of Beidahuang. Various state-of-the-art technologies have been applied in agricultural operations, such as satellites, drones and sensors. Agricultural technology professionals too are playing an increasing role in agricultural production.

Tang Caojiazi is a young technician at Youyi Farm's agricultural production department. A post-graduate in crop cultivation and farming system from Changchun-based Jilin University, he is now mainly in charge of choosing and testing seeds.

"Before using seeds on a large scale on the farm, we must have a three-year test for the

sample seeds to ensure they can grow stably," the 34-year-old technician said. "We also monitor the performance of the seeds currently in use and give suggestions to farmworkers based on our analysis."

He is the third generation of Beidahuang residents. His grandfather migrated from Shandong Province in east China and his parents once worked in another farm. After graduation, he chose to come back to his hometown and work in the reclamation area. His family supported the decision.

"I grew up on the farm, so I have a special rapport with the black soil," he said. Having witnessed the changes in the reclamation area day by day and the painstaking work of the older generations, he hopes he can make his own contribution to the development of the farm.

"The development mode has gradually changed from the traditional labor-intensive way to hi-tech, so I think there will be greater space for me to develop on the farm," he said.

Tang and his colleagues are also in charge of training farm managers and workers during winter. "Every year, we have at least 20 training sessions, where we discuss the advantages and disadvantages of every type of seeds and how to grow them," he said.

Besides the application of high technology, sustainable and green development is another trend in the reclamation area, as well as in other agricultural production bases in Heilongjiang. The province is making efforts to protect the environment and provide clean air, lucid water and high-quality soil for agriculture.

Burning residual corn stalks or straw in the fields is strictly forbidden to protect the environment. Violators face a heavy fine. In July, the province released a three-year action plan (2018-20) to protect the black soil, a kind of soil unique in northeast China that has a high content of organic matters. The plan focuses on protection measures to control the degradation of the black-soil farmland, improve the ecological environment of fields, and increase the comprehensive grain production capability.

Guaranteeing food supply for a population of nearly 1.4 billion is not easy. Heilongjiang, as a major grain production base in China, has high expectations to fulfill—that it will continue to play its role as a ballast to guarantee the country's food security and in the days to come, become a green granary and a green vegetable garden. ■



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