

《太阳能照亮致富之路》

Villagers are using the power of the sun to raise living standards in their drought-blighted region, as Erik Nilsson reports from Zhangjiakou, Hebei province.

Desheng's villagers are finding new prosperity by harvesting light in solar farms and growing crops in greenhouses.

A harsh climate has long made it difficult for residents to plant or herd on its grasslands.

But today, technology and innovation are transforming lives on the outskirts of Zhangjiakou, Hebei province, where fluctuating temperatures and frequent droughts previously produced poverty.

The lack of precipitation means an abundance of sunlight. Solar farms turn this bane into a boon.

Meanwhile, the greenhouses protect the potatoes from daily temperatures that range between 35 C and 7 C in summer, but drop to -35 C in winter.

Irrigation systems suckled by wells compensate for droughts.

"The region suffers from droughts nine out of 10 years," villager Hu Wenbin said. "Drought brought hardship. Technology fixed it."

Previously, Hu's responsibilities mainly focused on cleaning and guarding the office of the village committee. Now, he mostly focuses on maintaining the two solar farms constructed last year.

"We produce solar power as long as the sun shines," he said. "It makes money for us."

The panels generate roughly 800,000 yuan (\$117,000) a year. Although the national average price is 0.5 yuan per kilowatt-hour, the villagers earn 1.08 yuan for each kWh, thanks to a government stipend that is intended to ensure greater participation and higher revenues for isolated regions.

"The money belongs to all the villagers," said Ye Runbing, the village Party chief. "It will also provide more to households still mired in poverty."

Infrastructure

The revenue pays for infrastructure and medical insurance for all, and also for additional welfare for the 14 of the settlement's 413 households still living below the poverty line, which hovers at about 3,000 yuan a year, although the current average is 6,000 yuan, according to Ye.

The 4 million yuan invested in the solar farms was provided by the province's Industry and Information Technology Department, along with poverty alleviation funds and businesses.

"It's very dry here so we can turn sunshine into gold (money)," Hu said.

"I'm so dedicated to the solar panels now. We'd lose more than 700 yuan a day if they didn't function. I wipe the snow off in winter, otherwise, they don't work. We need them to get as much sun as possible."

Hu earns 3,600 yuan a year from this job.

"(It) keeps me active," he said. "My health is good."

His wife's is not. She needs treatments for joint problems.

But, in addition to his income, the couple can receive as much as 3,000 yuan in total from subsidies provided for the solar panels.

"I'm content," Hu said. "I'm happy. This money is stable. We have security."

The native of the northern port city of Tianjin was not previously satisfied with life in Desheng, especially when he moved to the area at age 10.

"I cried when I first came here," he recalled. "It was so poor. Winter was so cold. I kept saying 'I want to go home'. Now, I don't want to return to Tianjin."

Blizzards covered the houses, he recalled. "We wouldn't know if it was day or night because the snow blocked the windows.

"Our sheep and cows would climb the snow to the rooftop. Their hoofs would snap through the roof. That injured the livestock and damaged the roof."

Extreme fluctuations in temperature during the warmer seasons made it difficult for crops to survive, according to Hu: "There wasn't enough grass to herd."

Summer brought sandstorms, so the government planted trees.

"The trees stopped the sandstorms. But then the droughts came," he recalled.

Today, hoofprints pock the cracked earth across Desheng's parched prairies.

But the constant sunshine doesn't always translate as heat.

Temperatures can fluctuate from about 35 C to roughly 7 C within 24 hours.

Typically, days are scorching and nights are chilly. It can drop to -35 C in winter.

The conditions made it difficult to grow crops, until recently constructed greenhouses shielded them from temperature changes, enabling the people to plant potatoes belonging to the registered brand, Desheng, which takes its name from the village.

The structures' environmental controls also protect against insects, eliminating the need for pesticides and enabling the cultivation of natural spuds.

Roughly 280 greenhouses cover about 20 hectares, Ye said.

Those built with government subsidies cost about 1,000 yuan to rent annually.

Villager Xu Haicheng calls Desheng potatoes "golden beans", or jindoudou.

His family can plant 200,000 potatoes and earn 60,000 yuan per greenhouse per harvest.

Yields require three years from the first planting. The spuds must be harvested and stored in his cellar during winter.

Subsidies and sunshine

The local government subsidizes six of his 13 greenhouses. Some of those for which his family will pay all the costs for those still under construction.

He previously planted such hardy crops as naked oats, flax, potatoes and sugar beets - and hoped for the best in terms of the weather.

"The crops were jeopardized without greenhouses," Xu said.

He earned 40,000 yuan last year, but less than 10,000 yuan five years ago.

"(It was) just enough to survive," he said.

However, in recent years he has had to pay more than 42,000 yuan annually for healthcare and his daughter's schooling.

Xu has been conscientious about the yield and value of his potatoes since President Xi Jinping visited his home this year and calculated the overheads and profits with him.

He estimates he can bring in 100,000 yuan this year.

Wang Xianyu's family faces a similar situation.

"We spend our income on medical treatments," the 72-year-old said.

His household received roughly 5,000 yuan from the government, and by leasing about a hectare of land to other villagers last year. But they needed 10,000 yuan for healthcare.

"I used to raise sheep and cows, and plant crops," Wang said. "I can't anymore."

He and his 63-year-old wife, Ma Youling, have about 10 medical conditions in total, including diabetes, high blood pressure and minor strokes.

They have a son and daughter who have left to become migrant workers. Their daughter is unemployed.

"Their absence makes our poverty serious," Wang said.

"We don't have any relatives in the village to support us. Before we got sick we earned enough to escape poverty."

They expressed the hope that the money from the solar panels will improve their situation.

Technology and innovation are changing lives in Desheng by turning the bad weather that previously challenged people's livelihoods into a source of income.

The villagers are producing clean energy and organic vegetables for the outside world by using agricultural technology to harvest prosperity and solar power to generate a brighter future.

Zhang Yu contributed to this story.