

Rural lives invigorated by targeted solutions

Constructing modern communities, retraining farmers and creating employment among the strategies employed by Shanxi province



By YUAN SHENGGAO

Rural residents in the county of Tianzhen have seen fundamental changes in their lives thanks to the government's efforts in poverty alleviation and rural vitalization over recent years.

Tianzhen is the northernmost county of North China's Shanxi province. An arid area locked in by the Yanshan and Taihang mountains, it used to be one of the poorest counties in Shanxi.

To offer targeted solutions for poverty relief and rural vitalization, the county government invited experts from the nation's renowned universities and development research institutions to propose development plans several years ago.

Wang Hongxin, a professor with the School of Sociology of Beijing Normal University, is one of those experts. He and his colleagues proposed a systematic solution that involves relocation, skills training, and entrepreneurship and employment promotion.

One initiative is the Wanjiale New Community for residents relocated from areas with adverse living conditions.

Starting construction in 2017, the settlement is located in the eastern suburbs of the county seat.

With a total investment of 520 million yuan (\$78.59 million), the project includes 55 apartment buildings for 10,332 residents from 3,726 families.

In addition, there are 18,000 square meters of commercial and office space for residents to start their own businesses. On top of this, there are a number of enterprises and entities in the vicinity that can offer about 6,300 jobs. To serve residents' needs, there are kindergartens, schools, clinics and elder care facilities.

Local officials said Wanjiale is the largest comprehensive zone for living, working and doing business for relocated immigrants with the purpose of poverty alleviation in Shanxi province.

Wanjiale, which literally means "happy homes for 10,000 families", is now ringing true for many residents.

Zhang Xiaofei, a resident who moved from Gufengshan, a remote village in the south of Tianzhen, said she is pleased with the conveniences and opportunities that the Wanjiale community offers to her.

She now works in a children's

care center in the community. The center offers day care services for children after school.

"This must be the best job for me because my child is also taken care of by the center after he leaves school," Zhang said. "You know, there are very few people who can earn money while being together with their children."

The community neighbors the Tianzhen Economic Development Zone, a major industrial site in the county.

Fan Aijun, head of the development zone's administrative committee, said offering job opportunities to residents in Wan-jiale is now at the top of their agenda.

"To create more jobs for locals, we are strengthening efforts to draw in investors," Fan said.

He said the zone recently completed its second-phase project, which includes plants with total floor space of 7,500 sq m.

"As the plants are readily available, businesses can start their operations right away once they settle in the zone," Fan said.

In Pingshun county in the southeast of Shanxi, offering skills training to farmers is one of the targeted measures that local authorities use for poverty relief and rural vitalization.

In a greenhouse for mushroom farming, residents in the village of



Workers take care of sheep at a farm in Lishi district in Lyuliang city. LIU TONG / FOR CHINA DAILY

Longzhen recently attended a training course offered by the county's farming experts.

Wang Bingbing, a local agronomist, showed farmers how to take care of fungal spores.

"A stable temperature ranging between 18-23 C is crucial for the growth of fungi," Wang Bingbing told the trainees. "The temperature can be maintained through adjusting the roof cover and proper ventilation."

Wang Bingbing estimated that the total annual fungi output in Longzhen village can reach 200 metric tons after the harvest begins in May.

Liu Yingxia, a farmer in Longzhen, is a frequent student. "Thanks to the trainers, I've mastered enough knowledge in fungi farming," Liu said. "My family earned nearly 40,000 yuan last year by operating a fungi greenhouse."

She added that her family plans to operate another two this year and "there should be a substantial increase in family revenue".

Pingshun considers developing produce with local characteristics a driving force for rural growth. In addition to edible fungi, other local produce includes medicinal herbs and potatoes.

The county is a renowned production area of *dangshen*, or hairy asiabell, in China. The roots of *dangshen* are used in the production of many varieties of traditional Chinese medicines and health foods.

The local variety, which is called *Lu dangshen*, is acclaimed throughout the country for its excellent quality. Local statistics show that the county has 10 *Lu dangshen* plantation bases covering a total area of 1,500 hectares.

The total annual output of the herb has surpassed 3,000 tons in recent years, which generated a combined annual revenue of 120 million yuan for growers, manufacturers and dealers across the whole industrial chain.

Developing agriculture with local characteristics is now seen by many county-level economies in Shanxi as an effective way to boost farmers' revenue and promote rural vitalization.

The county of Daning, for instance, has developed into a major flower plantation base in Shanxi with the establishment of a modern floral industrial zone. Meanwhile, Lishi district in the city of Lyuliang has become a renowned sheep-raising and processing base in the province.

Li Shu contributed to this story.

Plant's tasteful answer to wastewater problem

By YUAN SHENGGAO

Discharge of wastewater from coal-fired power plants is often a viable threat to the environment, but a power plant in the eastern Shanxi city of Yangquan has tackled the problem with its advanced zero-wastewater-discharge technology and a waste-to-resource solution.

The Yuguang Power Plant, based in Yangquan's Yuxian county, is operated by Yuguang Coal and Electricity — a subsidiary of Shanxi International Energy Group.

A close examination of the power plant's wastewater treatment facility shows no wastewater discharge. Instead, crystal-white salt comes out of the plant. The salt is packaged at the end of the conveyor belt and is then ready to be delivered to clients.

Yuguang is a new plant that began operations in March last year. According to Wang Fei, deputy general manager of Yuguang Coal and Electricity, it is one of the most advanced coal-fired power plants in Shanxi and China in terms of operational efficiency and emission and discharge reduction.

"Our investment in the plant's environmental protection facilities reached 1.4 billion yuan (\$212 million)," Wang said. "With zero wast-

ewater discharge, our environmental performance is much better than the national standard."

The secret behind such a performance is the plant's state-of-the-art desulfurization technology that can turn pollutants into salt for industrial use, according to Wang.

The main pollutants from a coal-fired power plant include dust, gases like sulfur dioxide, nitrogen monoxide and acid-alkali waste liquid.

"The most difficult part of waste disposal is desulfurization," Wang said. "After three years of research, we developed the evaporating-crystallization technology to turn sulfur dioxide gas into liquid and liquid into solid salt."

Through the process, the plant can produce about 1,000 metric tons of salt a year, according to Ma Zhiqiang, the power plant's manager for salt production.

Annual sales of the salt amounted to about 100,000 yuan. "This is a small amount in value compared to the scale of our power plant," Ma said. "But the environmental benefit is much higher than that value."

The plant has seen 100 percent of its wastewater disposed. The disposed water is recycled and used for power generation again. "We estimated the quantity of water saved from the process can reach



Workers package salt produced at the desulfurization facility at Yuguang Power Plant. WU JIA / FOR CHINA DAILY

100,000 tons a year.

"A revolutionary change is that there is no more wastewater and sewage outlets from our plant," Ma said.

Yuguang's zero wastewater discharge is hailed by local residents.

Yang Wei, a worker at the power plant, is a resident from a village neighboring the plant.

"Our folk villagers' impression of a coal-fired power plant is the suffocating smoke and foul-smelling water it discharges," Yang said. "But this is not the case with Yuguang."

He noted that the zero wastewater discharge and substantially reduced emissions have ensured the "clear water and blue sky of its neighborhood".

Yuguang Coal and Electricity has applied for a patent for this waste-

water desulfurization technology. The patented technology is also used in the second-phase project of Heyuan Power Plant, another subsidiary of the company.

Shanxi International Energy Group, the parent company of Yuguang Coal and Electricity, is a pioneer in Shanxi's energy revolution initiative.

In addition to upgrading its coal-fired power plants, the group has enhanced efforts in developing new energy resources, including wind and solar power.

The operator of 21 large wind and solar power plants in Shanxi and its neighboring regions, SIEG plans to increase its new-energy power generation capacity by more than 2 million kilowatts per year in the future.

Wu Jia contributed to this story.

Guangsheng Temple among 'hidden gems'

By YUAN SHENGGAO

As a cradle of Chinese culture, Shanxi is said to be a province containing one of the greatest numbers of cultural and historical resources.

While some landmark historical relics and monuments such as the Great Wall that spans the province, the Yungang Grottoes in Datong and the Sakyamuni Pagoda in Yingxian, top tourists' itineraries, some "hidden gems" — places of historical interest with less fame — are also worth visiting.

The Guangsheng Buddhist Temple in Zhaocheng township in Hongtong county, for instance, is one such hidden gem.

Guangsheng is actually a temple complex consisting of the upper monastery, the lower monastery and the Water God Temple on the slope and at foot of the Huoshan Mountain in Zhaocheng.

Construction of the Guangsheng Temple is said to have begun more than 1,800 years ago during the Eastern Han Dynasty (25-220), making it among the earliest Buddhist temples in China.

The temple was reconstructed several times after facing destruction by wars and natural disasters during various historical periods. Most of the structures and relics we can see now were built and created during the Yuan (1271-1368) and Ming (1368-1644) dynasties.

Tourists to Guangsheng should not miss the "three treasures" of the temple: the glazed pagoda, the Buddhist sutras called Zhaocheng's Collection and its murals.

Located in the upper monastery, the glazed pagoda is a 13-story, 47.31-meter-tall octagonal pyramid-shaped tower. Written records show this pagoda was built in 1527 during the Ming Dynasty.

As the multicolored glazed walls and roofs can sometimes turn the sunlight into colorful, rainbow-like reflections, the structure is also called Feihongta, or Flying Rainbow Pagoda.

On the outer walls and roofs, there are many glazed ornamental pieces featuring figures of humans, auspicious animals and small statues of Buddhas, bodhisattvas and monks. Inside the pagoda's foundation hall is a 5-meter-tall bronze statue of Sakyamuni Buddha.

Since its construction in 1527, the pagoda has survived two severe earthquakes that measured above 8.0 on the Richter scale.

On Aug 29, 2018, London-based World Record Certification recognized it as "the tallest multicolored glazed pagoda in the world".

The Zhaocheng's Collection of Buddhist sutras in the temple is among the most precious Buddhist sutra copies in China. It was printed during the Yuan Dynasty and it took 24 years for a great number of monks and craftsmen to engrave woodblocks for printing.

There are several precious Yuan Dynasty murals in the temple complex, including the paintings on the four walls of the Water God Temple and the painting on the gable wall in front of the Great Hall of Sakyamuni Buddha in the lower monastery.

Researchers said these paintings are of great significance to research as they represented the artistic style and depicted the life of the Yuan Dynasty.

Unfortunately, some of the largest sections of the murals, which used to be in the Great Hall of Sakyamuni Buddha, were stolen in 1928 and smuggled overseas in the years that followed.

Zhang Zhigang contributed to this story.



The pagoda in Guangsheng Temple is the tallest multicolored glazed pagoda in the world. CHANG PUPING / FOR CHINA DAILY

Chinese liquor's long journey home to the West

By YUAN SHENGGAO

The Chinese liquor industry developed through its own innovation and with integration of Western techniques.

The white liquor, or *baijiu*, produced in the North China province of Shanxi, represented by the Fenjiu variety made in the city of Fenyang, is a typical example of Chinese-Western integration.

Historical records show that the distilling technique for alcoholic beverage production was introduced from the West to China at the beginning of the Tang Dynasty (618-907). It led to the creation of *baijiu*, a higher-purity alcoholic beverage that is easy to preserve.

The township of Xinghuacun in Fenyang is said to be the first locale for the mass production of *baijiu*, which began in the middle of the Tang Dynasty.

About half a millennium later, the production technique of Fenyang-made *baijiu*, or Fenjiu, began

to influence the liquor industry in the West.

During the process of Genghis Khan's conquest of the West in the 13th century, the Mongolians brought the Fenjiu-production techniques to Russia. The Russians then mastered the unique double-distilling technique of Fenjiu, leading to the birth of the high-purity and high-alcohol-content vodka.

The fusion of Fenjiu and vodka continued in the Ming (1368-1644) and Qing (1644-1911) dynasties, along with the renowned Shanxi merchants' business activities in Russia.

According to historical records, the Shanxi merchants, mostly traders of tea, silk and porcelain, usually drank liquor to warm themselves in the cold climate of Russia. As the traders were not used to the local vodka, some Shanxi businessmen opened small distilleries in Russian cities, making liquor combining Fenjiu technique and local ingredients. The



A Fenjiu bottle exhibited at the British Museum.

WEN ZHAOYAN / FOR CHINA DAILY

liquor, which was called "Chinese vodka" by Russians, added a new variety to the local markets.

There are also historical records

that say the production of brandy in France and whisky in Scotland incorporated the double-distilling technique of Fenjiu in the 18th century.

There are similar associations between Fenjiu and the distilled liquor varieties in the Korean Peninsula and Japan.

Researchers said Fenjiu was first exported to Europe during the Yuan Dynasty (1271-1368), a regime founded by Kublai Khan, the grandson of Genghis Khan.

A bottle with a Fenjiu label, which used to contain exported Fenjiu liquor made in the Yuan Dynasty, is now exhibited in the British Museum in London. The bottle's exquisite decorations include Chinese-style paintings, a couplet and inscriptions indicating its production year, site and producer's name.

Researchers said this bottle is evidence of China's first labeled export of *baijiu* to Europe.

Wang Pei contributed to this story.