

CHINA

Weaving brighter future for community

Cooperative in Shaanxi province helps rural women learn a traditional craft to shake off poverty

By QIN FENG in Xi'an and ZHAO RUINAN

In December, a dozen skilled women at a cooperative in Weinan, Shaanxi province, were busy handcrafting a batch of baskets.

Each woman worked with dried corn husks and straw, sitting together in a supportive environment.

"They come from surrounding communities, including left-behind women, people with disabilities and those living in poverty, and find local employment opportunities here," said Chen Chunmiao, director of the skilled women's grass-weaving cooperative.

At 56, Chen is an inheritor of Shaanxi province's intangible cultural heritage of grass weaving and one of the first master craftsmen in the local rural area.

Grass weaving is an ancient folk craft that can be traced back to early Chinese history. The ancestors learned to use natural plant fibers such as bulrush, reeds and corn husks to weave practical containers and tools for their daily needs through their close interaction with nature.

"The main materials for our grass weaving are wheat straw and corn husks. It began with weaving straw hats and later evolved to combine practicality with decoration, expanding to nearly a hundred varieties. In 2017, it was recognized as a provincial intangible cultural heritage project," Chen said.

In her early years, Chen was inspired by the abundance of bulrush and corn husks in her hometown. However, she also noticed that traditional grass-weaving skills were fading and at risk of disappearing.

Driven by her love for local culture, she immersed herself in the effort to preserve grass-weaving skills and promote the development of a local industry.

Since 2003, Chen has led initiatives in the grass-weaving industry from the grassroots craft group in Miaodi village, continuously conducting research, innovation and product diversification based on inherited techniques.

"Initially, my family did not support me in pursuing grass weav-



Chen Chunmiao displays products made by the skilled women's grass-weaving cooperative at its showroom in Weinan, Shaanxi province. PHOTOS PROVIDED TO CHINA DAILY



From left: Products are displayed at the cooperative's showroom. Grass-woven trays are some of the cooperative's popular products.



ing. They believed it was not a proper job and would not generate income," Chen said.

Even people in the village doubted her, unconvinced that grass weaving could be profitable. To combat this skepticism, she went

door to door to persuade them.

In 2017, Chen established the skilled women's grass-weaving cooperative, a private enterprise that integrates the inheritance, design, training, processing and sales of grass-weaving products.

Soon after, Chen proposed a model of "using intangible heritage to drive skills-based poverty alleviation," which encouraged local left-behind women to join the grass-weaving industry.

Through long-term, public wel-

fare-oriented skills training that focused on poverty alleviation, these women acquired skills that increased their earning potential.

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Grass weaving is simple to learn and suitable for people of all ages and genders, effectively utilizing the idle labor force of rural left-behind women and the elderly."

Chen Chunmiao, director of the skilled women's grass-weaving cooperative in Weinan, Shaanxi province

izing the idle labor force of rural left-behind women and the elderly," Chen said.

"Seeing everyone become more financially stable and happier through grass-weaving skills brings me genuine joy."

Since its establishment, the cooperative has held over 150 training sessions, benefiting more than 500 households in surrounding areas.

In 2023, over 400 people were lifted out of poverty through related industry development, as annual sales exceeded 3 million yuan (\$410,000).

One beneficiary, Sun Ehua, supports her family of six while her son and daughter-in-law work elsewhere in the country. Sun and her husband care for their two grandchildren at home. To alleviate financial pressure, she chose to work at the cooperative.

"Working here is very convenient as it allows me to take care of my grandchildren," Sun said.

With a monthly income of over 1,000 yuan, although modest, she can learn the skill of grass weaving and earn enough to cover her grandchildren's monthly expenses, which is a significant relief.

Looking ahead, Chen said she will increase her efforts to spread grass-weaving culture and share women's stories through grass weaving.

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'Potato-turned-rice' bolsters food security

KUNMING — "Potato-turned-rice", a rice-shaped starch product made from potatoes using a new processing technology, is undergoing initial production and sales tests in Yunnan province.

The production line started operation in November and has been running smoothly for about a month. The new product has the potential to turn potatoes, which have good yields and wide adaptability but a short storage life, into a popular staple food in China, thus helping the country bolster food security.

The production line in the city of Zhaotong, Yunnan, is the latest achievement of polymer chemist Wu Qi, an academician of the Chinese Academy of Sciences. He and his research team built the plant and put it into operation after more than five years of research and development.

Their processing technology changes the properties of potato starch, with the aim of making tuber crops a staple food in China and introducing the processing technology to the market.

Dining tables around the world feature various staples composed of starchy foods such as rice, wheat, potatoes and corn. However, most Chinese people do not view potatoes as a staple like rice and wheat, treating them more as a vegetable ingredient.

Agronomist Deng Yong, director of an agricultural service center in Qiaojia county, Zhaotong, said that changing the configuration of the potato starch results in food that is not as soft, and is therefore more appetizing to consumers, as well as having a longer shelf life.

The potato-turned-rice has been processed at high temperature and high pressure, so there is no need to wash and soak it. It can be cooked in an ordinary rice cooker,



Farmers harvest potatoes in Qiaojia county, Zhaotong, Yunnan province, in October. CHEN HONGYUN / XINHUA



A worker monitors the production of potato-turned-rice at a factory in Qiaojia in November. ZHANG SHUNFU / XINHUA

and the water and time required are far less than for rice, he added.

The mountainous city of Zhaotong is one of the main potato-producing areas in Yunnan, with a climate and environment very similar to the Andes Mountains in South America, where potatoes originally come from. The city was awarded the title of "Potato Plateau Seed Potato Capital of the World" by the World Potato Congress in 2020.

Zhaotong currently boasts a potato planting area of about 158,000 hectares, with an annual yield of 3.5 million metric tons and

a total output value of about 10 billion yuan (\$1.37 billion).

According to Li Yulin, the general manager of the company running the new production line, preliminary estimates show that 2.5 tons of potatoes can be processed into 1 ton of potato-turned-rice, resulting in output value increasing more than tenfold.

The production line is expected to process about 2,500 tons of fresh potatoes per year, producing 1,000 tons of potato-turned-rice, achieving an output value of about 30 million yuan, he added.

Deng said the processing tech-

nology is expected to promote potato planting in mountainous areas, as well as the planting and deep-processing of other crops, further adding to the industrial chain of mountain agriculture.

He added that potatoes can be planted in most parts of the country, while processing technology has big potential for assisting poverty alleviation efforts through sci-tech progress.

The first batch of products has already been put on trial sale in the local market, and feedback shows that middle-aged and elderly people are interested.

According to Wu, food security is based on three major elements: the area of arable land, the yield per unit area and strategic reserves. The potato-turned-rice has many advantages in these three areas, and can contribute to ensuring food security.

Compared to the average yield of 12 tons per hectare for rice, the potato yield can reach over 30 tons per hectare. Potatoes can be grown in various regions across China, including mountainous areas and plains, and have strong drought resistance.

In recent years, the sowing area of potatoes in China has remained around 4.67 million hectares, with an annual output of nearly 90 million tons and an output ranking first in the world for many years.

Official data shows that China's cumulative grain imports in 2023 stood at 161 million tons, while total grain output was 695 million tons.

During the annual Central Economic Work Conference held in December to outline priorities for the Chinese economy in 2025, Chinese leaders decided that efforts should focus on areas including the stable production and supply of grain and other major agricultural products, as well as the promotion of the agricultural industry according to local conditions to increase farmers' incomes.

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DNA sequencing could help conserve rare carp species

Chinese scientists have successfully assembled the chromosomal-level genome of the critically endangered *Ochetobius elongatus*, a rare fish species from the Yangtze River. It marks the first time that a high-quality genome at the chromosomal level and annotation information has been obtained for the species, a type of carp, and represents a significant advancement to restore the fish population, China Science Daily reported on Dec 26.

The achievement was made by a research team led by Professor Lu Jianguo from the School of Marine Sciences at Sun Yat-sen University and researchers from the agricultural science institute of Jiujiang, Jiangxi province. The research findings were published on Dec 19 in Scientific Data, a scientific journal under Nature.

The *Ochetobius elongatus*, once an important freshwater economic fish in China and widely distributed in the Yangtze River Basin, has experienced a sharp decline in population over the past three decades due to environmental degradation and human activities, said Liang Xuanguang, co-first author of the research article.

The fish has a small and slender body, with a maximum length of 55 centimeters and a weight of 500 to 1,000 grams. As a migratory fish, it reproduces from April to June each year. After hatching, the young fish leave the rivers and migrate to lakes for feeding and overwintering. It takes three to five years for them to reach sexual maturity.

The species was listed as "critically endangered" on China's Red List of Biodiversity in 2023, Liang said.

Following the implementation of the 10-year fishing ban in the Yangtze River at the beginning of 2020,

an improvement has been seen in the fish stocks of the river.

In December 2020, seven *Ochetobius elongatus* fish were discovered in the Gonggan section of the Yangtze River, the first instance of multiple individuals being recorded in recent years, said Liang.

The reappearance of the rare fish provides an opportunity for conservation efforts.

Despite the application of conservation genetics and genomics in the protection of several endangered species within the Yangtze River Basin — such as the Yangtze finless porpoise, *Gobiocypris rarus* (a freshwater species of cyprinid fish endemic to China), and *Leptobotia elongata* (a species of botiid fish), all of which have had their genomes sequenced and assembled — the critically endangered *Ochetobius elongatus* had yet to have its genome assembled.

The researchers assembled the chromosomal-level genome of the *Ochetobius elongatus* based on various sequencing technologies. According to Liang, a total of 28,674 protein-coding genes were predicted, with 28,637 genes annotated, indicating the high quality of the genome assembly.

"This is the first release of the genome information of *Ochetobius elongatus*. It is crucial for understanding genetic diversity, identifying unique adaptations, and formulating effective conservation strategies for the species," said Lu Jianguo, the corresponding author of the research article.

In future, Lu's team plans to focus on the artificial breeding of the rare fish, aiming to achieve sustainable artificial breeding of the species.

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