Tunnel Vision: Villagers Dig Their Way Out of Isolation

Mountains secluded a tiny settlement in Guizhou from the outside world – until residents decided to change its fortunes.

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For a moment, the villagers lowered their worn hammers and blunt chisels, pausing to listen. Through the hard karst of rock face, buried deep under a massive mountain in China's southwestern Guizhou province, they could hear the voices of their friends and neighbors.

In 1998, a handful of farmers picked up everyday hardware-store tools to dig a tunnel connecting Mahuai, their tiny, isolated mountain village, with the outside world. None of them knew how long it might take, or if they'd ever turn their dream into reality. As summers followed winters, they crouched over sharp rocks and slept on the moist ground surrounded by complete darkness.

A view of Mahuai Village, Guizhou province, Jan. 18, 2016. Xu Fengshan/IC

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Seven years passed. A whole new generation had started to take their first steps on the village's unpaved roads while their mothers and fathers spent days and nights under Guang Shan, the mountain they were trying to conquer. They were still digging in shifts around the clock, though their motions had slowed, depleted of energy and life.

But as the voices on the other side reverberated through the stone, the villagers realized how close they were. The excitement and promise of the early days flushed through their weary bodies, and with reinvigorated strength they chiseled through the night, the voices sounding closer and closer. Eventually, they broke through.

"I could hold their hands," said Yang Fangcai, one of the villagers, recalling that day in 2005. "It was the happiest day of my life."

What the villagers dreamed of when the first chisels hit the karst formations of Guang Shan was quicker access to the town, so that their children could go to school and so their produce could be traded for a bar of soap or a new pair of shoes. What they got exceeded anybody's expectations.

With modern engineering, the construction of the 200-meter tunnel could have taken less than

a week. But administratively and economically, a tunnel that improves infrastructure for only a few hundred villagers wasn't deemed feasible. Local authorities told the villagers of Mahuai that the undertaking was too dangerous, and waved them off. "They were afraid of the risks, but we just wanted to do it," Yang said. Gathering tools and provisions, the villagers took it upon themselves to dig the tunnel.

The first version was no more than a hole — only the town's small children, up to about three years old, could walk through. Everyone else was forced to hunch or crawl. But by then authorities had taken notice of the villagers' feat, and soon they were providing them explosives to help them blow up the tunnel into a full-size infrastructure asset. Today, cars can drive through the tunnel.

The tunnel transformed Mahuai. It's still a tiny village, but its appearance is now that of a modern village. Cars and motorbikes are parked in front of concrete houses. Inside, children watch cartoons on heavy sofas. When they are older, they can go to high school, even college. "We got transportation and convenience, and that was followed by development," Yang said.

A man rides a motorcycle through the tunnel in Mahuai Village, Guizhou province, Aug. 27, 2016. Denise Hruby/Sixth Tone

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It's not that Mahuai was ever completely cut off from the outside world. There was a pass that led over Guang Shan, and those who trod carefully through the thick forest could make it to the other side. Before, this was how villagers occasionally traded with nearby communities. But not much could be carried on the arduous trek.

With each visit to the nearby towns, villagers saw the outside world develop. Cars and motorbikes drove on paved roads, electricity prolonged the days, and modern farming equipment took weight off farmers' shoulders. But as long as Mahuai was stuck behind Guang Shan, utilities and capital goods were out of reach. Mahuai, the residents decided, needed a tunnel. "We may live behind the mountain, and we may be illiterate, but we have dreams," Yang said.

Before he drives to a nearby construction site, where he works as a foreman, Yang drives through the tunnel to drop his son off at school — something that would have been unfathomable when Yang himself was young. "We never imagined cars because we wouldn't have had anywhere to drive then," Yang said. Back then, he recalled, children left for school before sunrise, making the 10-kilometer trek over the mountain and through the forests in the dark.

We may live behind the mountain, and we may be illiterate, but we have dreams.

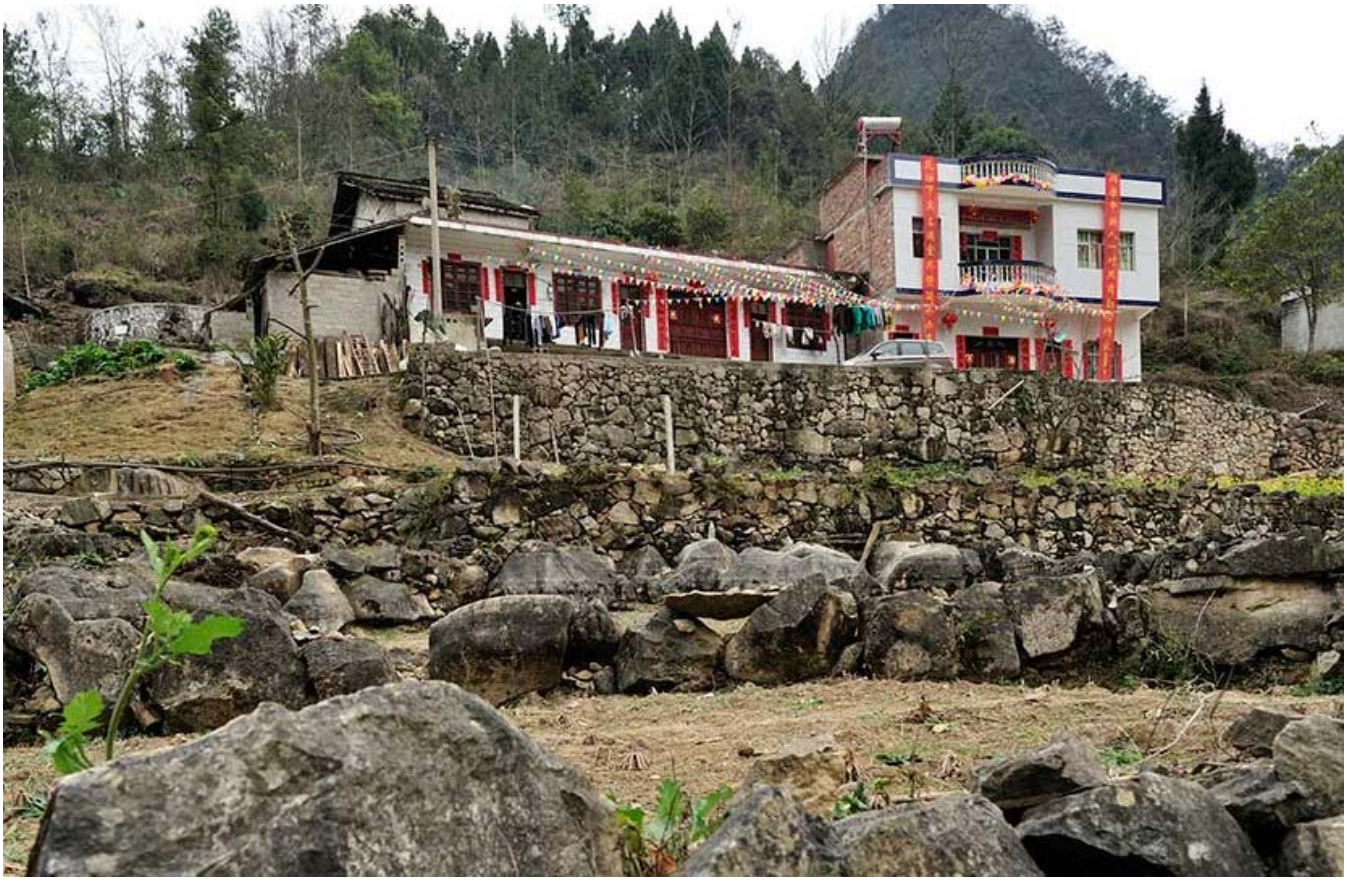
- Yang Fangcai, villager

The hike was so treacherous that parents didn't allow their children to make the crossing until they were 10 years old. Once at the school, they were the tallest kids in the classroom. They didn't stay for very long. Like most of the people in Mahuai, Yang dropped out after just a few years, "because the way to school was too difficult and too far," he said.

After the tunnel allowed Mahuai residents to bring their children to school and sell their produce at the market, their annual incomes grew tenfold, from an average of 800 yuan ($120) to 8,000 yuan. Later, these incomes allowed them to bring in cement and excavators for modern construction work, as well as household amenities like televisions and refrigerators. The tunnel had become a conduit of modernity.

"I was the first one in the village who had a concrete house," Yang said proudly. Whereas

before his house lacked plumbing, it now has a ceramic toilet and a shower. A bare window inside overlooks the lush rice paddies and a newly built greenhouse. Yang's home was finished in 2014, and in the two short years since then, all of Mahuai's houses have gone concrete. No longer do people log trees in the surrounding woods to build traditional houses or warm their hands by a fire in the winter.



A concrete two-story house in Mahuai Village, Feb. 18, 2016. Xu Fengshan/VCG

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The first humans known to have dug tunnels were Stone Age settlers, whose underground structures dating back 12 millennia can still be found in parts of Europe. Since then, almost every civilization has used tunnels, whether for warfare, mining, or transporting water, or, later, for allowing vehicles and trains to pass through mountains and underneath rivers and seas. In a research paper, scientists argued that, because the tunnels we've built are well below the reach of surface erosion, they could be preserved for millions of years. When all our monuments have crumbled, tunnels will be the only things left of human civilization.

In that respect, Guizhou will leave a mighty legacy. Tunnels here were built for the many mines that dot the province, and for quicker connections between towns and cities. On some stretches, passengers traveling on a train from one county to the next only get a brief glimpse

of villages and valleys before they are again swallowed by the darkness of a tunnel.

But the billions of yuan the government spent on local infrastructure hasn't captivated Luodian County authorities, who administer Mahuai, the way the tunnel that was built by a handful of farmers has. The project they once opposed is now a shining example of the villagers' resilience and strength — so much so that they recently erected a visitor's center.

Tourists hardly ever make it to this remote area, about 6 hours from the provincial capital, Guiyang. Rather, the center was built to inspire officials. The meeting rooms can accommodate as many as 100. The "Lecture Hall for Ethics" is the largest one, equipped with dark, wooden conference tables and heavy red curtains, and with pictures of Confucius and Lei Feng, a soldier devoted to Mao Zedong, whose image has been widely used in propaganda campaigns.

"With this spirit," reads one of the exhibition's glossy wall tags, "we certainly have the power to conquer all the difficulties to promote the great cause of socialism with Chinese characteristics." The exhibit explains how the tunnel was built and salutes the villagers by describing each individual's task in great detail.

The villager most prominently featured is Deng Yingxiang. In government reports and TV and newspaper stories, she has been praised as spearheading the people's tunnel.

Deng was elected village chief three years ago, and she said this was largely due to her leadership role in the construction of the tunnel. Because the tunnel has garnered so much attention, Deng has traveled a lot. Sixth Tone met her in a hotel room in Guiyang, Guizhou's capital, where she sat upright, her feet pressed into the carpet floor. Later that day, she met with high-ranking officials and gave a speech.

Deng grew up in an area wealthier than Mahuai. To get to school, she walked on paved roads, and after nightfall, she could turn on the lights to chat with her parents. When she married into Mahuai in 1991, the rising and setting of the sun dictated her days. "I'm always thinking about how this village can be turned into a better place to live," the 44-year-old said.

Two years after Deng's wedding, her firstborn child fell ill. She tried to get him to the nearest doctor, down the unpaved roads, over the slippery mountain pass, and several kilometers through fields and forests. But it took too long, she said: He died halfway there.

Deng said that she was driven by her personal loss, and pushed hard for a tunnel but quickly realized that help from the outside wouldn't come. "We had to take the initiative ourselves," she said.

Deng Yingxiang gives a driver a high-five at the entrance to the tunnel in Mahuai Village, Jan. 18, 2016. Xu Fengshan/IC

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Robert Galler is a professor of subsurface engineering at Montan University Leoben in Austria, a country dominated by the Alps. He said that given the Mahuai villagers' primitive means and lack of engineering skills, the tunnel is an impressive feat.

"It's not a typical tunnel profile," Galler said, looking at photos of the construction. "It looks like they made it up as they went along."

And according to Deng and the other villagers, that's pretty much true. They knew of a creek that disappeared into the solid rock formations and emerged on the other side of the mountain, gurgling through a more prosperous Guizhou. The villagers reasoned that if they started digging from both sides and followed the course of the creek, they'd eventually meet in the middle.

Villagers ranging from the elderly to children in their young teens chiseled day and night in

three shifts. They shared meals contaminated by dust and mud, and became accustomed to their skin being blackened by the smoke from their kerosene lamps. Kneeling, they smashed at the rock with their simple tools, not knowing if the pieces that came crumbling down would be large chunks or tiny fragments. “Now, when I think back to that time, I just remember feeling scared,” Deng said.

Later on, with millions of yuan from local authorities at their disposal, the villagers used explosives to blast the tunnel wider, and carried out the stones with carts and tractors.

Instead of proper electricity and a ventilation system, the Mahuai tunnel is dimly lit by a garland of lightbulbs, similar to those in the villagers’ own homes. Water drips from the ceiling and trickles down the walls. But Galler said that while the water might look worrying, it would likely also be present in a properly engineered tunnel. Modern tunnels usually consist of an outer shell, which holds off any water that might seep through, and an inner shell for wiring and ventilation. The absence of an outer shell, he said, is not necessarily a problem.

The shape of the tunnel, however, is. To avoid tension peaks, tunnels are built in a circular shape, which guarantees that each millimeter of the shell supports the maximum amount of weight from the mountain above. Though seemingly arched, Mahuai’s tunnel is actually multiangular. If the rock around a tunnel isn’t hard and solid enough, Galler estimates that the chance of it cracking is around 90 percent.

In a way, Mahuai’s centuries of seclusion have saved it from the fate that has befallen millions of villages across China. Elsewhere, the import of modern machinery has freed a young generation of farmers to become migrant workers. Working far from their homes and leaving their children behind, they have erected the modern skyscrapers of the metropolises and fueled China’s rapid economic growth.

When it comes to left-behind children, Guizhou is one of China’s hardest-hit provinces — but in Mahuai, there are none, villagers told Sixth Tone. Before the tunnel, the young, able-bodied men and women stayed put, simply because tractors, ploughs, cultivators, and planters could not be taken over the steep pass. Their strength was needed to harvest the thousands of kilograms of rice that would feed the village throughout the year.

People walk through the tunnel in Mahuai Village, Guizhou province, Aug. 27, 2016. Denise Hruby/Sixth Tone

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Today, the inhabitants of Mahuai have modern farming equipment and could leave to join the millions of migrant workers anytime — but according to Yang, they don't want to. The water tastes fresher, the air is cleaner, and besides, there's no need to leave, he said. "With the tunnel, we now have better houses and food, and beautiful cars," he said, grabbing a mop to wipe up after one of his coworkers stopped by for a visit. Although Yang won't ask visitors to take off their shoes, the floor tiles are shiny and new, and he likes to keep them that way.

Some of the villagers Sixth Tone spoke to complained that they hadn't been remunerated for their hard work, and raised questions over how the millions of yuan the government pledged were spent. After all, they dedicated more than a decade of their lives to the tunnel, paying for it with their youth.

Yang sees things differently. "If you ask for something in return, the most you can get is money," he said. "But the future of the next generation can't be measured that way."

Mahuai's first generation of college students are now the pride of the village. Yang's own two sons, he said, will go to college as well. "I'll make sure of that, as long as I'm still standing," he

said, glancing over at his younger son watching cartoons while fidgeting on the couch.

The mountain pass Yang had to climb to go to school has long been reclaimed by nature, overgrown with dense foliage. Nobody uses it anymore. “Outsiders can’t understand what we were chasing after,” Yang said of the tunnel. “It was something only we could achieve for ourselves.”

(Header image: An inside look at the tunnel, Mahuai Village, Guizhou province, Aug. 27, 2016. Denise Hruby/Sixth Tone)

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