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The Contradictions of Conservation: Fighting Erosion in Mao-Era China, 1953–66

Abstract

Based on local archival documents and fieldwork conducted in Shaanxi Province's Baishui County, this article examines how large-scale water and soil conservation campaigns launched in Northwest China's Loess Plateau region during the Mao era (1949–76) affected agrarian environments and how rural communities experienced and responded to these transformations. By mobilizing rural communities to combat water and soil loss, China's leaders expected conservation to limit sedimentation along the Yellow River's lower reaches and increase agricultural yields to support their vigorous program of industrialization. Throughout the 1950s and 1960s, local opposition to these efforts to alter human interactions with the land centered on contradictions between the long-term objectives of conservation campaigns and the priority that the rural populace placed on ensuring subsistence. With residents called on to attend to conservation work instead of other production activities, divergent imperatives translated into intense

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competition over how to use the land and allocate labor power. Even if conservation programs in Baishui, as in other parts of China, drew on lay knowledge and practice, these environmental management polices consistently privileged the state's developmentalist agenda over the welfare of rural communities. In this manner, Mao-era water and soil conservation supported, and was inseparable from, an extractive political economy that intensified contradictions between the rural and urban, agriculture and industry. Rather than giving voice to vulnerable populations and equitably distributing costs and benefits, Mao-era water and soil conservation exacerbated the burdens placed on marginalized rural communities.

INTRODUCTION

During the 1950s and 1960s, the People's Republic of China (PRC) launched large-scale water and soil conservation campaigns in Shaanxi province and other parts of Northwest China's Loess Plateau region to build terraces and implement other land- and water-management measures.¹ By mobilizing the rural populace to combat erosion, China's leaders anticipated that conservation measures would limit sedimentation along the Yellow River's lower reaches, prolong the life of dam and reservoir megaprojects constructed during the 1950s, and increase agricultural yields to support the PRC's vigorous program of industrialization.² Conservation programs implemented as part of China's drive toward revolution and economic development struck at how people used the most basic resources of all: land and water. Based on fieldwork in Gouan and Beiqian villages, located on opposite sides of one of the many gullies that crisscross Shaanxi's Baishui County, along with documents from the Shaanxi Provincial Archives and the Baishui County Archives, this article examines how water and soil conservation during the Mao period (1949–76) affected agrarian environments and how rural communities experienced and responded to these transformations.

Environmental historians of Africa have demonstrated that efforts to combat erosion through conservation measures, which figured prominently in colonial development programs from the 1930s to the 1950s, met with widespread resistance.³ Historians of the American West have likewise detailed the economic, cultural, and environmental consequences of the US federal government's attempts to deal with erosion and overgrazing on the Navajo Reservation

during the New Deal Era.⁴ Under what circumstances did similar opposition emerge in China? Conversely, under what circumstances did officials and local cadres collaborate effectively with rural people to implement conservation measures?

As in other times and places, the PRC state had difficulties implementing water and soil conservation programs. Throughout the 1950s and 1960s, opposition to conservation in Baishui centered on what contemporaries, employing an important Maoist category, termed contradictions (*maodun*). The most fundamental was the contradiction between the state's long-term developmental agenda and the priority the rural populace placed on forms of agricultural and non-agricultural production that would ensure their immediate subsistence. These divergent imperatives translated into disagreement over how to use land and allocate labor power. To convince villagers to take part in the work of transforming the landscape, county officials and local cadres skillfully combined economic incentives, political instruction, and mass mobilization.

Water and soil conservation in Baishui displayed the concern with systematizing and extending peasant "experience" (*jingyan*) that Sigrid Schmalzer identifies in Mao-era efforts to promote agricultural terracing.⁵ But, even if local leaders in Baishui, as in other parts of China, drew on lay knowledge and practice to promote conservation, these environmental management policies privileged the state's developmentalist goals over the welfare of rural communities. Expanding agricultural production in the fragile environment of the Loess Plateau necessitated water and soil conservation to control erosion, and coordinating these programs required higher-level state intervention. But the PRC's extractive grain procurement policies meant that the increased grain yields that conservation made possible did not accrue to rural residents. Mao-era water and soil conservation programs supported, and were inseparable from, an extractive political economy that intensified contradictions between rural and urban, and agriculture and industry.⁶

MASS EXPERIENCE IN WATER AND SOIL CONSERVATION

Baishui is situated in the lower-middle reaches of the Luo River, which flows some 680 kilometers through the Loess Plateau before joining the Wei River on central Shaanxi's Guangzhong Plain. Gullies between 100 and 220 meters in depth occupy half the county and dissect its landscape into a series of plateaus and ridges. As in other parts of the Loess Plateau, porous and friable loess soils combine with fragmented topography and poor vegetation cover to make the land highly susceptible to erosion. The resulting water and soil loss



Figure 1. Map showing location of Baishui County. Credit: Map drawn by Rao Su.

hamper agricultural production and contribute to Baishui's relative poverty (figure 1).⁷ A 1953 survey investigation conducted by the PRC's Yellow River Conservancy Commission noted that outside of Guangzhong, in the hill-gully and plateau-gully areas of the Luo River's upper and middle reaches, "irrational utilization by humans" had deteriorated soil structures, which in turn weakened drought resistance and water-retention capacity.⁸ Because the land was not "rationally utilized," the destruction of vegetation intensified erosion, which, as the report stated, influenced "social development and peasants' livelihoods."⁹

However, as the survey also noted, due to "differences in topography," Baishui and other areas in the Luo River's lower-middle reaches suffered "lighter harm from nature" compared to its upper reaches. The populace had "rich experience" conserving water and soil, so erosion was less severe. Residents already managed over 90 percent of the gullies, and most of them had stopped expanding.¹⁰ People in Baishui, for instance, had popularized sayings to conserve water and soil and safeguard agricultural production, such as one that cautioned: "If the land does not have lips [that is, terracing], people will starve." Throughout the plateau-gully area in the Luo River's middle reaches, experience had proven the efficacy of terracing to conserve water and soil.¹¹ In addition to terraces, some residents built check dams in gullies, while Gouan and other villages dug water cellars (a type of well) and ponds to catch runoff. Because the water table

was low on the plateaus and residents had to travel long distances to obtain water, the water cellars and ponds were mainly intended to store drinking water, but they also limited runoff.¹²

However, the Yellow River Conservancy Commission's investigators also stressed the limits of existing water and soil conservation methods. Local officials lacked awareness of conservation, did not offer technical guidance, and did not carry out "comprehensive planning" to combine conservation with agriculture, so methods were "partial and scattered." Typical of the Chinese Communist Party's thinking in the 1950s, the survey alleged that the property system based on small farm households fostered "peasant ideology and customs" that were at odds with conservation's "mass character and long-term character." To resolve the contradictions between individual versus collective and short-term versus long-term interests, investigators recommended combining conservation with agricultural production "in a planned way to develop water and soil conservation work with a mass character." The PRC's mutual aid and cooperative movement, the survey concluded, would realize this goal.¹³

On the surface, Gounan village presented an ideal example of "collectivized" and "mass-character" conservation work in action (figure 2). Gounan's residents still speak with pride about a poor peasant named Yang Lingjun (1889–?) who, after a severe drought struck Shaanxi in 1929, sold his land on the plateau and moved into a gully called Tuqiaogou (Earthen Bridge Gully). Yang and his family began cultivating one hundred *mu* (6.667 hectares) of sloping land and gradually built terraces and planted trees on it to control water and soil loss.¹⁴ But Yang's measures covered only a small portion of Tuqiaogou, and, as in other parts of Baishui, erosion threatened the cultivated land.¹⁵ Speaking of Tuqiaogou, Baishui's county head Li Chongshu noted in 1957 that, "since vegetation cover is poor, water and soil loss are relatively severe."¹⁶ Although it is unclear how the figures were calculated, Li stated that over sixteen thousand cubic meters of soil eroded annually from Tuqiaogou, washing away over 792 tons of nitrogen, phosphorus, and potassium—equivalent to fifteen times the amount of fertilizer applied to the watershed every year. As a result, pre-1949 grain production averaged a meager forty to fifty *jin* (twenty to twenty-five kilograms) per *mu* (0.06 hectares).¹⁷

Beginning in 1953, in tandem with the organization of agricultural cooperatives, Baishui's county leaders mobilized the populace to dig trenches and construct terraces on slopes. As one elderly Baishui resident recalled, local leaders "led all the village's cooperative members to go to war against Tuqiaogou, advancing militarily against nature, demanding productivity from barren hills and barren gullies, with everyone going all out and getting at it."¹⁸ Over several years, according to county head Li Chongshu, "poor gullies and bad pieces [of land]" were changed into a "fortunate situation" in which households had

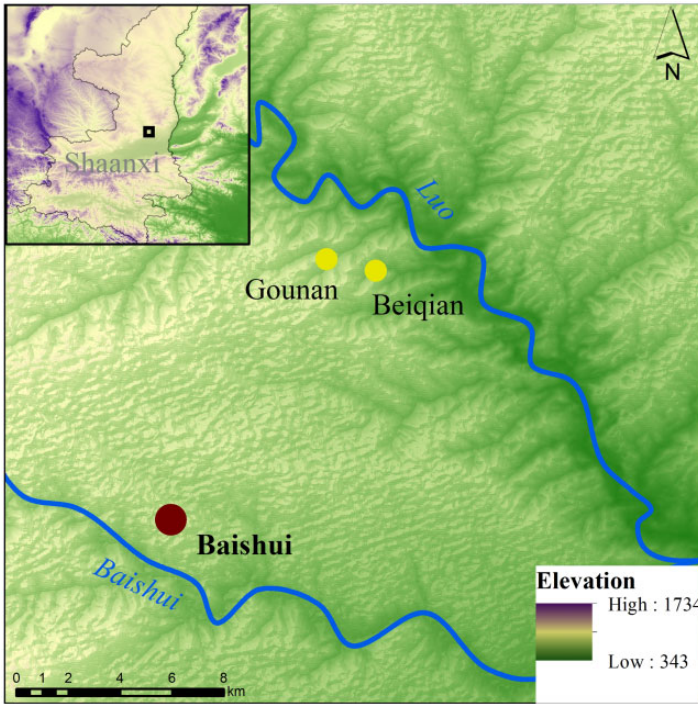


Figure 2. Map showing location of Gounan and Beiqian villages. Credit: Map drawn by Rao Su.

water cellars, villages had ponds, land was terraced, gullies had dams, and trees grew beside embankments. Through terracing and afforestation, Gounan's residents ensured that water did not run off the plateaus and that the soil did not wash down slopes.¹⁹ With water and soil loss in check, production increased. By 1956, as interviews with elderly residents of Gounan confirm, grain output per *mu* reached between 150 and 160 *jin* (75–80 kilograms).²⁰

Gounan's emergence as a model for other locales to study and emulate lends insight into the processes through which local knowledge about terracing and other techniques was, to borrow Schmalzer's phrase, "collected and then transformed."²¹ Initially, Baishui leaders believed they did not have enough experience promoting water and soil conservation. For this reason, as Li Chongshu explained, they "deputed technical cadres deep into the field to summarize the experience of the local masses." Afterwards, leaders "affirmed and extended" this experience. As conservation efforts at Tuqiaogou moved ahead, county leaders extolled Yang Lingjun as a model. As Li described it, twenty years of labor had turned Yang's inclined land into terraces with productivity more than double that of the fields on the



Figure 3. Former site of Yang Lingjun's terraces in Gounan village, which Baishui County's local leaders extolled as a model for water and soil conservation during the 1950s. Credit: Photograph by the author, January 2016.

tablelands and plateaus (figure 3).²² Yang had dug more than four hundred water cellars in his lifetime, and though he could not engage in physical labor in the 1950s due to his old age, he personally went down into the water cellars to direct younger workers.²³

The PRC's wider national agenda bolstered Yang Lingjun's achievements. Instead of enabling Baishui's residents to keep surplus grain for future use, the PRC's unified purchase and sale system (*tonggou tongxiao*), instituted in late 1953, obligated agricultural collectives to deliver grain surpluses to the state at artificially low prices. The state determined rural residents' share of the harvest, which they obtained from the collectives. This agricultural development strategy, later exemplified by the slogan "take grain as the key link" (*yi liang wei gang*), gave priority to expanding cultivated acreage to increase grain production. Compulsory procurement of low-priced grain by the state—an implicit tax—made the rural populace indirectly pay for the cost of the PRC's early industrialization drive.²⁴

Materials designating Yang Lingjun as an "advanced producer" in 1958 reinforced values that supported the PRC state's economic agenda. Official documents praised the old man for rationally utilizing land and "accumulating abundant water and soil conservation experience to ensure income." But they also commended Yang for volunteering to pay two hundred *jin* (one hundred kilograms) of grain on top of his original tax obligations in 1949, which he called his "glorious responsibility."²⁵ Valorizing and promoting models like Yang gave state agents a way to utilize local expertise, while simultaneously pursuing higher-level agendas. Local knowledge served as the basis for conservation measures that limited erosion and boosted yields, but acted primarily as a means of increasing surpluses for state extraction. Affirmation of peasant experience promoted the PRC's

pursuit of economic development over and above the welfare of rural communities.

Furthermore, with the Yellow River water control plan adopted by the PRC's State Council in 1955, the central government stepped up the tempo of water and soil conservation projects. Mao Zedong signaled the importance of these initiatives in 1956 when he declared: "We must pay attention to water and soil conservation work."²⁶ Mobilizing the Loess Plateau's populace for conservation campaigns was to limit erosion and downstream siltation to preserve the life of the Sanmenxia dam and reservoir, which commenced construction in 1957.²⁷ To this end, in the mid-1950s, the Yellow River Conservancy Commission's Northwest Engineering Bureau assisted Baishui in formulating plans to manage Tuqiaogou.²⁸ After summarizing Yang Lingjun's experience, Baishui convened three on-the-spot meetings at Tuqiaogou in 1956, which more than 420 cadres attended. At a training class attended by forty-three cadres, Yang introduced his management techniques and their results.²⁹ Li Chongshu claimed that this initiative accelerated development of terracing and enabled Baishui to "forcefully assist in realization of the nation's great plan to fundamentally control Yellow River disasters."³⁰

Local leaders, for their part, actively publicized Yang Lingjun's achievements to attain recognition and notoriety. In 1957, Gouan's party secretary Yang Yuesheng (1925–84) attended the Shaanxi Province Advanced Agricultural Unit Work Conference and introduced Tuqiaogou's experience, receiving a banner from the PRC State Council's Water and Soil Conservation Commission. The following year, the State Council honored Gouan with a certificate of commendation signed by Zhou Enlai.³¹ Singled out for this praise, Gouan fit the pattern that was characteristic of conservation initiatives in the 1950s, which fostered model locales for propaganda and demonstration.³²

AGRICULTURE VERSUS CONSERVATION

But, even in a model village like Gouan, problems existed. First, local leaders had to resolve what they called the "temporary contradiction between water and soil conservation and agricultural production." Conservation demanded labor power in all four seasons. But, after cooperativization, as Li Chongshu pointed out in 1957, agriculture witnessed "a new high tide" and double-cropping increased, which decreased fallow land area and made field-engineering projects difficult. The problem was that labor and land could be used for conservation or farming but not for both simultaneously. Crops could not grow on land that was dug up to build terraces or embankments.

"If this contradiction is not appropriately solved," Li cautioned, "it will influence agricultural production; or else it will squeeze out water and soil conservation."³³

Li outlined the methods adopted to resolve this contradiction. Based on farming needs, village-level cadres who led production teams determined which projects were most urgent and which required comprehensive planning. They also varied the timing of work to ensure that the conservation work did not alter or occupy the land needed for cultivation. In summer and autumn, people constructed embankments and terraces. In autumn and spring, they built silt dams and larger-scale projects. In winter and spring, they dug water cellars and ponds or filled collapses. Implementation also had to be "flexibly initiate[d] based on concrete circumstances." In 1956, for instance, heavy rains delayed the summer harvest until the time when late autumn crops had to be planted. In response, cadres adopted the slogans "when land is empty construct" and "construct first and sow the land early for millet and broom-corn millet; construct afterwards and sow the land later for oats and winter wheat." To save time, cadres instructed cultivators to leave aside a piece of land wherever field-engineering projects were done and, after earth was dug up, sow it with oats. As a result, conservation did not interfere with farming, and "the masses were satisfied."³⁴

Meeting conservation targets likewise required carefully adjusting work schedules and incentives. Cadres had to "rationally handle labor compensation" to ensure the conservation work met quality standards and to "solve [the issue of] insufficient labor power." To this end, county leaders combined "temporary assaults" during slack periods in the agricultural calendar with year-round management. These assaults organized work teams for specific projects, while cooperatives allocated labor for conservation as part of their annual plans. This arrangement, wrote Li, "avoided the shortcoming of cooperative members worrying that work points were not evenly distributed." But planning alone was not enough. To resolve contradictions surrounding conservation and convince residents of its importance, cadres had to "educate peasants about the identity between individual benefit and collective benefit, as well as their immediate benefit and long-term benefit."³⁵

Conservation quotas had to consider each locale's "special characteristics," the character of the soil, the work's technical nature, the technical proficiency of the local people, and the quotas set for other farm work. Conservation projects entailed heavy labor so, "in principle," they counted for more work points than other tasks. Compensation differed depending on when projects would reap benefits. For example, most production teams recorded field-engineering projects like terraces and embankments as agricultural work, with payment distributed in the same year. Work points for projects that

yielded benefits later—silt dams, gully head defenses, ponds, and check dams—were mostly recorded as “capital construction work” and distributed amongst all laborers over a period of two to three years.³⁶ But county leaders soon opted to compensate all conservation work in the current year since waiting to distribute work points reduced labor effectiveness.³⁷

Finally, Li Chongshu urged local leaders to “strengthen ideological education of the masses” to affirm confidence in “the struggle to manage gullies and thoroughly eradicate natural disasters.” Tuqiaogou’s experience showed that conservation could transform the environment in the foreseeable future. Every locale in Baishui had to “carry out terracing and greening of the county’s gullies just like has been done in Tuqiaogou, diligently completing the water and soil conservation mission to support realization of Yellow River control projects and improve the people’s livelihood.”³⁸ Realizing this goal required detailed planning, the adjustment of economic incentives, and ideological instruction.

LEAPING FORWARD AND FOLLOWING RED FLAGS

The Great Leap Forward (1958–61) ramped up the intensity of water and soil conservation work in Shaanxi and across the Loess Plateau. But the campaign took a heavy toll on the rural populace. Newly formed People’s Communes organized their members into quasi-military units (platoons, battalions, regiments, squads, and so on) and mobilized them to manage small watersheds as their “theaters of operation.”³⁹ Since the early 1950s, local leaders and higher-level authorities in Shaanxi had been promoting Gounan’s experience digging water cellars as a model. But, during the Great Leap Forward, villagers all over Shaanxi had to follow Gounan’s example and meet targets for water cellars whether they needed them or not. Residents complained: “We’ve dug so many ‘black holes.’ They occupy land, donkeys fall into them, and they’re useless. It’s really a waste of manpower and resources.”⁴⁰ A former female activist from Baishui’s Fumeng village recalled getting injured when she fell into a water cellar that she was digging with her husband during this campaign.⁴¹

At the same time, the Great Leap Forward often involved communes appropriating labor and resources from subordinate units with little or no remuneration. Collective members in Beiqian, which formed a high-level cooperative with Gounan from 1956 to 1959, “disliked that the retained grain standard [left for consumption] was too low and that water and soil conservation was heavy work that [made them] eat a lot, and so were not willing to go to the fields.”⁴²

When drought struck in 1960 and the state's requisitioning of grain did not relent, the threat of a subsistence crisis brought conservation work to a standstill.⁴³ Although demographic data and oral histories indicate that Baishui did not witness the famine-related mortality seen elsewhere in China, it still suffered extreme dearth and hunger.⁴⁴ The famine's relatively moderate severity in Baishui mirrored much of Shaanxi, where party leaders did not adopt the Great Leap Forward's most radical policies.⁴⁵

Although residents got a respite from conservation work for several years following the Great Leap Forward, the PRC government issued a new series of directives on water and soil conservation in 1963. The campaign to "Learn from Dazhai in Agriculture"—inspired by a collective that gained nationwide fame for overcoming poverty by turning rocky hillsides into terraced fields and planting trees—got underway in 1964, lending further impetus to water and soil conservation efforts.⁴⁶ In addition to following all of China in studying Dazhai, Baishui also had to compete with Shaanxi's Chengcheng County (located directly to the east), which in 1963 and 1964 gained nationwide renown as a "red flag" in terrace construction.⁴⁷ But Baishui leaders still presented Tuqiaogou as an exemplar. Along with encouraging cadres and the populace to learn from Dazhai, Baishui organized fourteen thousand people to make three visits to Chengcheng and three study trips to Gouan.⁴⁸ Despite disruptions caused by the Great Leap Forward, conservation campaigns had regained momentum.

REMAKING A ROTTEN BRIGADE

While Gouan remained a model, conservation campaigns in the mid-1960s remade the reputation of nearby Beiqian (see [figure 2](#)). Waging what Baishui leaders called "a great decisive battle in water and soil conservation," Beiqian formed a capital development team in the summer of 1965, transferring 135 laborers to "wage war for fifty days" by building terraces and doing other conservation work. As a result, Beiqian purportedly "changed in a single leap from a late-developing brigade into a banner for high-quality, high-speed development."⁴⁹

A 1966 report gives an account of this transformation. Surrounded by gullies on three sides and plagued with infertile land, bare hills, and frequent droughts, productivity was low in Beiqian before 1949, so even in abundant years output per *mu* was only seventy to eighty kilograms.⁵⁰ Given the poor quality of Beiqian's farmland, other forms of employment held greater importance.⁵¹ Like other parts of Shaanxi's "black belt" (*hei yaodai*) north of the Wei River, Baishui had coal mines where Beiqian residents worked digging and hauling coal.

Starting in the Tongzhi period of the Qing dynasty (1856–75), people in Beiqian also earned a living by weaving willow branches into winnowing baskets, which found a ready market in central Shaanxi's Guanzhong region.⁵² Although livelihoods improved somewhat after 1949, the report admitted that Beiqian's impoverished condition had not fundamentally changed.⁵³

Beginning in 1964, under the slogan “study Dazhai and catch up to Chengcheng,” discussions between cadres and the masses in Beiqian centered on three questions: “Why is Beiqian ‘rotten’? Why is it ‘poor’? It was divided from the same brigade as Gounan, so why isn’t it as good as Gounan?” The brigade’s party branch organized a meeting at which party member Hao Gaiming reportedly declared: “We live next to the road. Every day we see trucks transporting lumber from Huanglong [a forested mountain region northeast of Baishui]. We have so many barren hills and cannot contribute lumber to construct socialism. I feel deeply ashamed.” Although one cannot know what really transpired, residents allegedly “recognized that to change the face of Beiqian they had to firmly grasp ideological revolutionization and land revolution (i.e. basic construction of farmland).” Regardless of the veracity of the details, this meeting signaled the beginning of conservation campaigns in Beiqian. For the first five days of 1965, the party branch held a meeting in which, “using criticism and self-criticism as a weapon,” the party branch chastised committee member and brigade leader Luo Qicheng for following “the capitalist road” and dismissed him from his post. Numerous collective members vowed to “change the face of Beiqian.”⁵⁴

During the period of post-crisis recovery and readjustment that followed the Great Leap Forward and famine, the PRC had permitted rural handicraft production for the market and cultivation of land outside the collective.⁵⁵ But with another shift in China’s development policies in 1964, which re-emphasized collective production, these sideline activities came under attack. According to the 1966 report from Beiqian, a “go it alone style” had spread unchecked in the brigade, with local cadres and other residents opening wasteland (*huang*)—a term that referred to all types of uncultivated lands—and making winnowing baskets on a large scale. Few people took part in collective production, oxen were thin, and land was infertile. Residents described the production situation as “treating family members badly, keeping thin oxen, abandoning crops, and no one hoeing.”⁵⁶

During the period of “rehabilitation” from 1961 to 1963, water and soil conservation work lagged, and individuals throughout Shaanxi responded to the central economic policies by reclaiming wasteland outside their collectives to recuperate losses incurred during the Great Leap Forward. This wasteland consisted of previously untilled slopes with steep gradients. Reclamation thus destroyed vegetation

cover on inclined land and accelerated erosion. Following the Great Leap Forward, short-term subsistence mattered far more to the rural populace than checking erosion. But the conservation campaign launched in 1964 targeted this practice.⁵⁷ Throughout Baishui, discussions attacked reclaiming wasteland as “capitalist go-it-alone behavior” that intensified water and soil loss. This politicized language pointed to the contradiction that emerged when households reclaimed inclined slopes for their immediate benefit, while damaging the long-term collective interest. To rectify this situation, authorities compelled residents in 1965 to hand over twenty thousand *mu* (1,333 hectares) of reclaimed land to their collectives.⁵⁸

Three of the five committee members from the Beiqian party branch and nine of the eleven work team committee members illicitly reclaimed wasteland. Most cultivated one to four *mu* (0.06–0.26 hectares), though one household cultivated a whopping thirteen *mu* (0.86 hectares). Some hired “illegal households” (*hei hu*) to open wasteland; some secretly made winnowing baskets at night and slept through farm work during the day. When it was time to farm, collective leaders rang the bell for work but no one showed up.⁵⁹ With people “walking the wrong road of recklessly opening wasteland and going it alone doing sidelines (*fuyue*),” as reports put it, some among the cadres and the masses thought “constructing the land is not as good as opening wasteland” and “doing water and soil conservation is not as good as doing sidelines.”⁶⁰ Rural residents across China favored these sideline activities because, unlike grain production, the state did not impose hidden taxes on them though compulsory procurements.⁶¹

People in Beiqian only engaged in conservation when pressed, the quality of their work was poor, and their repairs quickly collapsed. Efforts to crack down on illicit wasteland cultivation in 1963 and 1964 failed. But, in the spring of 1965, the brigade party branch compelled cadres to give back 450 *mu* (thirty hectares) and formed a collective sideline-production processing organization to regulate these activities.⁶² At this point, according to the 1966 report, cadres and the masses in Beiqian embraced “the ideology of planting fields for the revolution and planting trees for the revolution” and devoted their minds to the collective, “opening up a high tide in basic construction of farmland.” But the skepticism toward conservation persisted. Some residents, recalling earlier excesses, remarked that “the wind of ’58 [that is, the work style of the Great Leap Forward] has come again” and sarcastically called the tree nursery an “old folks’ home” and a “convalescent hospital.”⁶³

To improve the quality of maintenance work, Beiqian devoted 12 percent of its labor power (seventy-eight people) in the spring of 1965 to a “specialized farmland capital construction team” (*tudi jiben jianshe dui*) that worked year-round. During slack periods, the brigade mobilized all residents for conservation projects. Yet some feared that

the construction team would not be “mutually advantageous” for those drafted into it and would negatively influence agricultural production. In response, the party branch consolidated the team’s leadership and organized residents to study Mao Zedong’s writings and engage in military training. When the ground froze in the winter of 1965–66, many in Beiqian asked to stop work. But, as the report maintained, after studying Mao’s quintessential parable for remaking nature through arduous labor, “The Foolish Old Man Who Moved the Mountains,” they resolved “that even if the land froze to three *chi* [one meter] they would not cease work and would not rest until they grasped a red flag, and they persisted until the 24th day of the twelfth lunar month before stopping work.”⁶⁴ Mobilization to transform the environment once again demanded political instruction and pressure.

When evaluating and recording labor, Beiqian implemented a system in which production teams were paid with work points earned in the spring each summer and with work points earned in the summer each autumn, ensuring even distribution among production teams and timely compensation. In this manner, the brigade started to bring about the “embankment of plateaus, terracing of gully slopes, and greening of barren slopes and barren hills.” In 1965, grain production per *mu* reportedly averaged 195 *jin* (97.5 kilograms), which exceeded the highest recorded levels by 10 percent. The brigade had “fundamentally altered the backward conditions that led people to call it ‘rotten Beiqian’ and leapt forward to become a red flag in construction of basic farmland for the whole county.” For two years, Beiqian had “gone to war against nature” and resolved to “pledge their life to changing the face of ‘rotten Beiqian’ and to contribute more to the revolution.”⁶⁵

At an on-the-spot meeting convened in Baishui in October 1965, county head Sun Fangmin gave a speech mobilizing the populace for conservation work, and participants visited Beiqian and Gouan to observe and learn from their experience. Cheng Zengjie, an assistant engineer in Shaanxi Province’s Water and Soil Conservation Bureau, gave a speech that lauded Beiqian and Gouan and promised that if other brigades in Baishui followed their example they could vastly increase agricultural production by eliminating erosion.⁶⁶ By devising ways to resolve the contradiction between the immediate subsistence needs of rural households and the goals of the collective, the Beiqian brigade had attained a status coeval with Gouan.

RESOLVING CONSERVATION’S CONTRADICTIONS

Yet the conservation campaigns of the mid-1960s encountered opposition. County leaders pointed to what they termed “reactionary

sayings and behaviors,” such as a belief that conservation “exhausts people and harms finances; distant water cannot quench present thirst,” the “fear that it harms *fengshui* and is not safe,” and the “fear that it will disrupt borders of fields and buried rocks.”⁶⁷ One “counter-revolutionary element” went so far as to “fabricate rumors” that “doing water and soil conservation is like a snail plowing the land, suffering hardship for nothing.” Worse yet, he grumbled, “doing water and soil conservation is for idiots. Not doing anything, sitting down quietly, and saving two steamed buns would be better.”⁶⁸ In difficult times, people complained that “water and soil conservation is hardship; it expends grain and expends clothing.” When doing conservation work in better times, they sighed: “Whenever you see the bowl has a few grains of food in it the ‘wind’ of ’58 [the Great Leap Forward] comes again.”⁶⁹ Complaints that grain rations were too low for collective members to do conservation work reverberate through the sources.

Rather than unmediated voices from the grassroots, these grievances appeared in documents composed by cadres and officials in response to campaigns with specific mandates. Nevertheless, such sayings offer valuable insight into the sources of rural discontent. These complaints, along with many others like them, show that some among Baishui’s populace had little enthusiasm for water and soil conservation: it was hard, dangerous work that required huge investments of labor to move massive amounts of earth and brought few tangible short-term benefits.⁷⁰ To implement conservation measures, collectives had to employ political pressure, ideological education, and propaganda.

Starting in 1964, county leaders pushed rural residents to give up their practice of taking a well-deserved rest during the slack period to do conservation work during winter when it would not interfere with farming. But customary conceptions of agricultural time and frigid temperatures made working all winter far from appealing. Official reports attacked this “winter idleness ideology” (*dongxian sixiang*) and criticized it for hampering water and soil conservation.⁷¹ Describing the popular unwillingness to do conservation work in winter, one report noted:

Some say: “Since ancient times farmers have had half a year of hard work and half a year of idleness.” Some say: “After the autumn crops are harvested and wheat has been planted it’s a good time for farmers; they can take their food bowl (*mifan wan*) and stand by the northern wall to warm themselves in the sun.” Some say: “In the dead of winter insects all dig their holes; can’t people be idle for a few days too?!” Some say: “In deepest winter the ground is frozen like a brick and harrows can’t even dig. What can people do?”

As a result, production teams withdrew from work in the winter, while male laborers left to haul coal or gather firewood. Cooperative members went to market to get goods for the New Year, and women started “spinning yarn, making cloth, and sewing clothes to prepare for winter and celebrate the New Year.” In this way, “the evil practice of winter idleness” enveloped the countryside.⁷² To combat this situation, cadres organized mass meetings to drive home the message that “winter idleness is landlords’ and wealthy peasants’ idleness—poor people cannot be idle all four seasons of the year.”⁷³

As before, local leaders had to resolve “the contradiction of water and soil conservation and agricultural production competing for time, competing for land, and competing for labor.”⁷⁴ In addition to complaining about doing conservation work in the winter, people complained during spring that “the land isn’t empty, there’s no way to do it.” In summer, they grumbled that “farm work is busy, there’s no time.”⁷⁵ Given these limitations, cadres pressed production teams to exploit every available minute. In summer, according to a report from 1964, “time is tight, work is concentrated, and if any item is not done well it will lead to great losses in production.” The report recommended that collectives allocate 15 to 20 percent of their labor power to specialized work teams that would “persist in long-term management.” Furthermore, because most precipitation came in the summer, whenever rainfall made farm work impossible, production teams undertook “comprehensive mobilization for assaults in water and soil conservation” to build and maintain terraces. Once August arrived and the amount of farm work decreased, collectives allocated 30 percent of their labor to form specialized work teams and to “fight a great war” to complete conservation projects, with local leaders monitoring the work.⁷⁶

Baishui’s 1965 report on conservation work explained the seasonality of these campaigns: “After the fall harvest there is labor and there is land, but the freeze comes early and time for management is short.” The solution was to start conservation work as early as possible, while carefully prioritizing the components of each project. In the past, many people believed that the period in August after the summer harvest and before the autumn harvest was “the ‘golden’ season for doing water and soil conservation.” But even if the land lay fallow during this time of year, labor was in short supply. As the report stated, “the timeliness of deep plowing and tending autumn crops is extremely strong, and one season affects two years.” Hence, county leaders followed Beiqian in advocating a “first specialize; then assault” method: “After the summer harvest, mainly specialized teams do the work, and after summer plowing and tending of autumn crops have basically ended we mobilize the masses for assault-style management.”⁷⁷ Rather than demanding absolute adherence to these guidelines, however, county leaders advised collectives to adjust their

methods according to local climatic conditions and cropping schedules.⁷⁸

Proper compensation for conservation work was similarly complex and could only be determined through trial and error. As a report on conservation work related in the summer of 1964, “the problem of compensation is a big matter of deep concern to the mass of cooperative members, and it is an important problem in relation to project quality.” Given conservation’s “great intensity and strong technical character,” collectives in most of Baishui devised “quota management systems and engineering quotas,” through “experiment and democratic consultation,” which were somewhat lower than quotas for farm work.⁷⁹ Yet collectives frequently had to adjust their incentive systems to motivate their members for conservation work. Rather than a set number of work points for each shift, county officials strongly favored piece-rate systems to stimulate greater activism.⁸⁰ Gouнан, for example, originally stipulated that its members could earn 3.3 work points for building one *zhang* (3.33 meters) of terraces, but the amount proved inadequate, “which influenced quality and progress, making some people unwilling to take part in water and soil conservation work because the work points were too low.” When the quota was changed to four points per *zhang*, results improved.⁸¹

For a time, “emphasizing gullies and overlooking plateaus, overlooking maintenance, and laxness in re-vegetation measures” also had a negative influence. In certain areas, “because too many trenches were dug, level land was turned into low-lying land; high places lacked soil moisture and in low places seedlings were flooded, creating human-made decreases in production.” In every instance, county leaders had to avoid poor planning and implementation and grapple with “the contradiction between current benefits and long-term benefits in water and soil conservation work.”⁸²

FROM DROUGHT TO DISSENSION

Nevertheless, frictions rooted in competing land use priorities were unavoidable. These contradictions grew especially acute in 1966 when drought struck central Shaanxi.⁸³ A report from Shaanxi’s Baishui County Water and Soil Conservation Work Station from the fall of 1966—right at the start of the Cultural Revolution—gives a vivid account of the tensions that emerged due to an intersection between conservation campaigns and climatic fluctuations.

In 1966, leveling fields, deep plowing, and the construction of the “four fields” (level bench terraces on slopes, level terraces on plateaus, dam land, and flood siltation land) commenced in mid- and late June. But summer grain output had declined by 50–70 percent after eight months of drought. Farmers tried to make up for the shortfalls

by expanding the land area sown with autumn crops. Yet drought also threatened early autumn crops and interfered with the planting of late autumn crops.⁸⁴ Faced with these challenges, many rural residents chafed at conservation projects that required substantial labor inputs and had adverse short-term consequences for agriculture and other forms of production.

By late summer, the “cadres and the masses” assumed “a pessimistic and hopeless mood, fearing difficulties and slacking off.” The Baishui County Water and Soil Conservation Work Station’s report enumerated their grievances. Some said: “We’ve got bad luck. When others were serving as team leader there was an abundant harvest. When we’re serving as team leader, production decreases. Let’s get through doing it for the next six months and then forget it.” Others said: “This year only this little bit of grain has been allocated. If we don’t find a way out before it’s too late, soon we’ll be drinking the northwest wind [and have nothing to eat]. Working on building embankments and constructing the land can wait until there’s an abundant harvest.”⁸⁵ As harvests declined and scarcity increased, people wanted to ensure they had food. With the deprivations of the Great Leap Forward in recent memory, suspicion toward conservation projects ran deep.

The discontent focused especially on the year-round capital construction teams formed to construct and maintain terraces, silt dams, and other infrastructure. As the report explained,

there were also some people who complained that water and soil conservation is heavy work that wastes grain and clothing, disliked that the capital construction team managed them strictly so there wasn’t any freedom, and disliked that other people ridiculed them by calling them “three goods” labor power: (The three goods are broken goods [*daodan huo*], export goods [*chukou huo*], and substandard goods [*dengwai huo*]). Cadres’ work lacked confidence and the masses shirked from going forward.⁸⁶

Unsurprisingly, conservation campaigns that forced people to engage in backbreaking labor and limited their range of activities met with resistance. Production teams often sent weak laborers and troublemakers—the “substandard goods”—to do conservation work, holding back more capable members to farm.⁸⁷ Judging from their insults, people perceived conservation as labor that had no utility in terms of meeting their most pressing needs. With drought threatening and crops failing, villagers wanted to grow food or engage in sideline production, not level fields or build dams and terraces.

Faced with this discontent, local leaders turned to political mobilization to meet their objectives. Party cadres in Baishui organized 155

small groups to study Mao's canonical works and rectify incorrect attitudes. To address the issue of "disliking hardship and fearing tiredness"—to cite but one example—they studied "Serve the People," "In Memory of Norman Bethune," and "The Foolish Old Man Who Moved the Mountains."⁸⁸ The Beiqian brigade was "not afraid that the weather and the earth were dry" (thus making it harder to dig) and adopted a "cutting open the belly and digging out the heart" method to keep "building embankments and constructing the land."⁸⁹ Specifically, since the start of spring, the brigade devised four "drought work methods":

1. Take moist soil from a deep pit.
2. Increase the incline of the slope.
3. Build high and dig low.
4. Splash water on the surface of the terrace.

But to follow these steps, people had to haul water fourteen to fifteen *li* (7–7.5 kilometers) to apply it to the terraces, an arduous task in a landscape full of steep hills and gullies.⁹⁰ The Wujiuhe brigade likewise resolved that conservation would transform their poor "black cauldron bottom" land and "change the features [of the landscape]."⁹¹

Baishui's female residents actively participated in this work. In the Xifangcheng brigade during the 1966 conservation campaign, "women's monthly work turnout increased from seventeen to eighteen days per month to an average of twenty-six days per month," a staggering amount given all of the other work that women had to do. Though it did not make the work less burdensome, labor models presented a heroic example for other women to follow. Communist Youth League member Zhu Junying "studied well and worked hard," so five times in a row that summer she was "appraised as a 'five good' crack troop." The women's work team that she led "was also evaluated as a water and soil conservation highest-level advanced collective."⁹² When youths sent pledges to party organs and swore oaths to work diligently, Zhu resolved that, "if the land isn't all managed, I won't get married."⁹³ She would stay in her native village until they had remade the land.

Yet popular suspicions did not abate. An old upper-middle peasant in Beiqian named Luo Sanwa complained that "earning is not as good as saving. This year's been so tiring. Doing a few sidelines as early [as possible] and grasping a little ready-made [income] is the best policy."⁹⁴ When crops failed that summer, some people said: "This year the mission to be managed is too great. There isn't labor power to attend to it." Others protested that "grain ration standards are so low. Water and soil conservation is heavy work. We can't do

it.”⁹⁵ Instead of conservation, Luo Sanwa and other residents favored non-farm work to overcome shortfalls caused by drought-induced reductions in grain yields.

Labor mobilization also fostered discontent. When a capital construction team drafted “backward youth” to do repair work, a water and soil conservation technician in the Xiaowadi brigade criticized the brigade party branch’s leadership, saying things like: “Giving prominence to politics must also make it prominent in operations.” In the Wujiahe brigade, “some people with ulterior motives openly attacked water and soil conservation team personnel, saying: ‘The people who do water and soil conservation are all broken goods, export goods, and sub-standard goods,’ scheming to disintegrate the capital construction team’s organization and damage the water and soil conservation movement.” In the Daleigong brigade, two “counter-revolutionary elements” named Gao Jinmin and Liu Shutang “brazenly enticed the masses” to damage production, and that summer “farmland capital construction went quiet for a long period and strength exerted was not great.” Again, mass mobilization and political pressure were the chosen remedies. In the autumn of 1966, the Xifangcheng brigade held six mass meetings to promote conservation work, which more than 910 people attended. The Daleigong brigade had a mass meeting to struggle against “counter-revolutionary elements” named Gao Jinmin and Liu Shutang and detained them. Xiaowadi’s local party branch likewise held a meeting in the fall of 1966 to “thoroughly settle accounts” with the water and soil conservation technician’s “anti-party behavior” and dismissed him from his post. This former technician, whom I interviewed during a visit to Xiaowadi, remembered his conflict with the local party branch leadership and this struggle meeting as the opening salvo of the Cultural Revolution.⁹⁶

Ultimately, as the work station’s report put it, under circumstances “in which agricultural work was varied and toilsome, and labor power was in short supply,” technical personnel, together with local cadres and the masses, “rationally allocated labor power to simultaneously attend to water and soil conservation and agricultural production” so that neither of them was overlooked.⁹⁷ However, the documents do not describe the specific methods used in the autumn of 1966 to reconcile these contradictions.

Throughout the Cultural Revolution, conservation continued each winter and early spring. A retired professor who once worked in Shaanxi’s Water and Soil Conservation Bureau, with a stint in Baishui in 1967 and 1968, insisted that the Cultural Revolution had positive effects on water and soil conservation because work teams employed militarized methods, with people’s militia detachments (*minbing lian*) overseeing laborers. During the Cultural Revolution, he explained, “paramilitary organization, personnel stationed at work sites, long

work periods, and great labor intensity promoted the progress of water and soil conservation work.”⁹⁸ Yet tensions over the allocation of labor did not disappear. In the winter of 1973, for example, brick kilns opened by several households in Gounan diverted labor away from efforts to level farmland, which hampered work turnout and effectiveness. In response, brigade leaders stopped recording work points by shift in favor of distributing them on a piecework basis, held criticism meetings, and engaged in “face-to-face struggle” against kiln operators.⁹⁹ The contradiction between the state’s developmentalist goals and the interests of rural communities remained unresolved.

CONCLUSION

Beginning in the 1950s, agents of the PRC state identified, appropriated, and extended lay knowledge about water and soil conservation techniques to support large-scale developmental agendas. Local party leaders actively publicized this “peasant experience” in their efforts to gain higher-level state recognition and support. But even if conservation measures drew upon local knowledge and expertise, state agents in the countryside had a hard time getting other rural residents to accept it. From the first decade of the PRC, a contradiction existed between water and soil conservation and agricultural production. This contradiction became especially acute during the Great Leap Forward, when militarized conservation campaigns jeopardized rural livelihoods. In addition to their lingering memories of the hardships of the Great Leap Forward, more than a few Baishui residents opposed the renewed conservation campaigns launched after 1963 for a simple reason: these programs had little to do with promoting the welfare of rural communities and did not take their needs and aspirations into account.

The obstacles that conservation encountered must be understood with reference to the contradictions within China’s wider political economy. The PRC’s call to “take grain as the key link” compelled rural communities to farm sloping fields in the Loess Plateau and do the backbreaking water and soil conservation work necessary to check the erosion that inevitably resulted. But since state grain procurements extracted surpluses from the agricultural sector to support industrial development, conservation programs meant more labor for rural residents with no real returns. Despite working unceasingly to control water and soil loss from the 1960s through the 1970s, per capita grain rations in Baishui were basically stagnant.¹⁰⁰ To connect conservation, sustainability, and social justice, political conditions must give vulnerable populations a voice and ensure that costs and benefits are equitably distributed. Mao-era water and soil

conservation did not measure up to this standard. Instead, conservation programs undertaken to increase agricultural surpluses for state extraction and to control the Yellow River aggravated inequalities by exacerbating the burdens placed upon poor and marginalized rural communities.

To overcome popular suspicions, Baishui's county officials and local cadres adjusted compensation via work points and applied ideological pressure to keep water and soil conservation moving forward. The forms of mobilization employed during the first two decades of the PRC came to grips with the complexities of seasonal weather patterns and agro-ecological cycles. But unforeseen climatic fluctuations—like the drought that struck in 1966—upset finely tuned plans and led to the politicization of competing claims. Efforts to bring complex societies and ecologies into line with state-defined goals and collective production entailed myriad negotiations and conflicts, in which nature played an active role. According to Mao, the method for resolving “the contradiction between society and nature” was “developing the productive forces.” That was far easier said than done.¹⁰¹

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Notes

- 1 For background information, see Shaanxi sheng difang zhi bianzuan weiyuanhui, *Shaanxi sheng zhi: Shuitu baochi zhi* [Shaanxi Provincial Gazetteer: Water and Soil Conservation Gazetteer] (Xi'an: Shaanxi renmin chubanshe, 1997) (*Shaanxi Provincial Gazetteer*).
- 2 On Yellow River management, see David A. Pietz, *The Yellow River: The Problem of Water in Modern China* (Cambridge: Harvard University Press, 2015).
- 3 William Beinart, *The Rise of Conservation in South Africa: Settlers, Livestock, and the Environment 1770–1950* (Oxford: Oxford University Press, 2008), 346–53; William Beinart and Lotte Hughes, *Environment and Empire* (Oxford: Oxford University Press, 2007), 284–88; Kate B. Showers, *Imperial Gullies: Soil Erosion and Conservation in Lesotho* (Athens: Ohio University Press, 2005). For a counter-example, see Grace Carswell, “Soil Conservation Policies in Colonial Kigezi, Uganda: Successful Implementation and an Absence of Resistance,” in *Social History and African Environments*, ed. William Beinart and JoAnn McGregor (Oxford: James Currey, 2003), 131–54.
- 4 Marsha L. Weisiger, *Dreaming of Sheep in Navajo Country* (Seattle: University of Washington Press, 2009).
- 5 Sigrid Schmalzer, “Layer upon Layer: Mao-era History and the Construction of China's Agricultural Heritage,” *East Asian Science, Technology and Society: An International Journal* 13 (2019): 418. For an extended discussion of “peasant experience,” see Sigrid Schmalzer, *Red Revolution, Green Revolution: Scientific Farming in Socialist China* (Chicago: University of Chicago Press, 2016).

- 6 Jeremy Brown, *City versus Countryside in Mao's China: Negotiating the Divide* (Cambridge: Cambridge University Press, 2012).
- 7 Baishui xian xian zhi bianzuan weiyuanhui, *Baishui xian zhi* [Baishui County Gazetteer] (Xi'an: Xi'an ditu chubanshe, 1989), 213 (*Baishui County Gazetteer*).
- 8 Huanghe shuili weiyuanhui shuitu baochi chakan di ba dui, *Beiluohe liuyu shuitu baochi chakan baogao* [Beiluo River Watershed Water and Soil Conservation Survey Report] (December 1953), 37 (*Beiluo River Report*).
- 9 *Ibid.*, 205.
- 10 *Ibid.*, 230.
- 11 *Ibid.*, 227.
- 12 *Ibid.*, 227–28; see also “Gounan cun qunzhong da jiao fangfa jieshao” [“Introduction of the Water Cellar Digging Methods of the Masses in Gounan Village”], 1955, file 155, 159, Shaanxi Provincial Archives (SPA) (all documents cited are classified as *changqi*).
- 13 *Beiluo River Report*, 230.
- 14 Yang Xuxiang, *Gounan cun wangshi* [Past Events in Gounan Village] (Baishui: self-published booklet, 2015), 14; see also “Baishui xian Leiya xiang Gounan cun shuitu baochi mofan Yang Lingjun danxing cailiao” [“Materials on Baishui County Leiya Township Water and Soil Conservation Model Yang Lingjun”], April 1, 1958, file 155, 88, SPA.
- 15 Shuitu baochi ju, “Baishui xian Tuqiaogou de shuitu baochi gongzuo shi zenyang jinxing jizhong zhili de” [“How Water and Soil Conservation Work in Baishui County's Tuqiaogou Carried Out Collective Management”], in Shaanxi sheng shuilingting, *Quanguo di er ci shuitu baochi huiyi dianxing jingyan xuanji, di er ce* [Second Nationwide Water and Soil Conservation Conference Model Experience Collection], vol. 2 (January 1958), 108.
- 16 Li Chongshu, “Guanyu baosong Tuqiaogou liuyu zhili de ji dian tihui” [“Reporting a Few Experiences with Management of Tuqiaogou”], November 15, 1957, file 155, 117, SPA; see also “Baishui xian Gounan cun xiu titian jingyan” [“The Experience of Building Terraces in Baishui County's Gounan Village”], in Shaanxi sheng shuitu baochi ju, *Shuitu baochi ziliao huiji* [Collection of Water and Soil Conservation Materials] (December 1957), 87–89.
- 17 Li Chongshu, “Guanyu baosong Tuqiaogou”; see also Shuitu baochi ju, “Baishui xian Tuqiaogou,” 108; *Baishui County Gazetteer*, 216.
- 18 Interview with Yang Xuxiang, January 4, 2016; Yang Xuxiang, *Gounan cun wangshi*, 14; see also *Baishui County Gazetteer*, 217.
- 19 Li Chongshu, “Guanyu baosong Tuqiaogou.”
- 20 *Ibid.*; see also Yang Xuxiang, *Gounan cun wangshi*, 14; *Baishui County Gazetteer*, 217; Interviews with Yang Xuxiang, January 4, 2016 and May 2, 2018.
- 21 Schmalzer, “Layer upon Layer,” 419.
- 22 Li Chongshu, “Guanyu baosong Tuqiaogou.”
- 23 “Baishui xian Leiya xiang Gounan.”
- 24 Jean C. Oi, *State and Peasant in Contemporary China: The Political Economy of Village Government* (Berkeley: University of California Press, 1989), ch. 2–3; Barry Naughton, *The Chinese Economy: Transitions and Growth* (Cambridge: MIT Press, 2007), 233, 239; Huaiyin Li, *Village China under Socialism and Reform: A Micro-History, 1948–2008* (Stanford: Stanford University Press, 2009), ch. 3; Felix Wemheuer, *Famine Politics in Maoist China and the Soviet Union* (New Haven: Yale University Press, 2014), 87–93.
- 25 “Baishui xian Leiya xiang Gounan.”
- 26 *Shaanxi Provincial Gazetteer*, 559

- 27 Eduard B. Vermeer, *Economic Development in Provincial China: The Central Shaanxi [sic] since 1930* (Cambridge: Cambridge University Press, 1988), 147–50. On water and soil conservation for the Sanmenxia project, see Xiangli Ding, “The Yellow River Comes from Our Hands’: Silt, Hydroelectricity, and the Sanmenxia Dam, 1929–1973,” *Environment and History* (forthcoming).
- 28 Li Chongshu, “Guanyu baosong Tuqiaogou.”
- 29 Ibid.; see also Yang Xuxiang, *Gouan cun wangshi*, 15; Zhao Qindan, “Shaanxi sheng de shuitu baochi gongzuo” [“Shaanxi Province’s Water and Soil Conservation Work”], *Renmin ribao [People’s Daily]*, October 24, 1956, 3.
- 30 Li Chongshu, “Guanyu baosong Tuqiaogou.”
- 31 Yang Xuxiang, *Gouan cun wangshi*, 14–15; *Baishui County Gazetteer*, 217.
- 32 Vermeer, *Economic Development in Provincial China*, 158.
- 33 Li Chongshu, “Guanyu baosong Tuqiaogou.”
- 34 Ibid.
- 35 Ibid.
- 36 Ibid.
- 37 Shuitu baochi ju, “Baishui xian Tuqiaogou,” 110.
- 38 Li Chongshu, “Guanyu baosong Tuqiaogou.”
- 39 On the Great Leap Forward in Shaanxi, see Gail Hershtatter, *The Gender of Memory: Rural Women and China’s Collective Past* (Berkeley: University of California, 2011), ch. 9.
- 40 *Shaanxi Provincial Gazetteer*, 90.
- 41 Interview with Yang Shiye, May 2, 2018.
- 42 Shuitu baochiju, “Baishui xian Tuqiaogou,” 110.
- 43 Yang Xuxiang, *Gouan cun wangshi*, 13.
- 44 Interview with Yang Xuxiang, January 4, 2016; see also the figures in *Baishui County Gazetteer*, 122–23, 137–39.
- 45 Anthony Garnaut, “The Geography of the Great Leap Famine,” *Modern China* 40 (2014): 315–48.
- 46 On Dazhai, see Judith Shapiro, *Mao’s War against Nature: Politics and the Environment in Revolutionary China* (Cambridge: Cambridge University Press, 2001), ch. 3; Peter Ho, “Mao’s War against Nature? The Environmental Impact of the Grain-First Campaign in China,” *The China Journal* 50 (2003): 55–56; Schmalzer, “Layer upon Layer,” 418.
- 47 *Shaanxi Provincial Gazetteer*, 91–93; “Baishui xian 1965 nian shuitu baochi gongzuo zongjie” [“Baishui County 1965 Water and Soil Conservation Work Summary”], September 14, 1965, file 50, 10, Baishui County Archives (BCA) (also found in file 155, 218, SPA); Sun Fangmin, “Women shi zenyang xiang Chengcheng xuexi de: Yong geming jingshen xuexi xianjin jingyan” [“How We Studied Chengcheng: Using Revolutionary Spirit to Study Advanced Experience”], October 1965, file 50, 7, BCA.
- 48 “Baishui xian 1965 nian shuitu”; see also Sun Fangmin, “Women shi zenyang xiang Chengcheng xuexi de.”
- 49 “Baishui xian 1965 nian shuitu.”
- 50 “Beiqian dadui zhishan zhishui gao nongtian jiben jianshe de chubu jingyan” [“Beiqian Brigade’s Preliminary Experience Managing Mountains, Managing Water, and Doing Basic Construction of Farmland”], August 29, 1966, file 155, 234, SPA.
- 51 Interviews in Beiqian, September 17, 2016.
- 52 *Baishui County Gazetteer*, 210–11, 238.
- 53 “Beiqian dadui zhishan zhishui.”
- 54 Ibid.

- 55 Jacob Eyferth, *Eating Rice from Bamboo Roots: The Social History of a Community of Handicraft Papermakers in Southwest China, 1920–2000* (Cambridge: Harvard University Asia Center, 2009), 143–47.
- 56 Ibid. On the meanings of *huang*, see Micah S. Muscolino, “Refugees, Land Reclamation, and Militarized Landscapes in Wartime China: Huanglongshan, Shaanxi, 1937–45,” *Journal of Asian Studies* 69, no. 2 (2010): 454.
- 57 *Shaanxi Provincial Gazetteer*, 91.
- 58 “Baishui xian 1965 nian shuitu.”
- 59 “Beiqian dadui zhishan zhishui”; see also “Baishui Fenghuanggou liuyu yangban jianshe qingkuang he jingyan” [“Model Construction Situation and Experience of Baishui’s Fenghuanggou Watershed”], August 29, 1966, file 155, 234, SPA.
- 60 “Beiqian dadui zhishan zhishui.”
- 61 Naughton, *Chinese Economy*, 239.
- 62 “Beiqian dadui zhishan zhishui.”
- 63 Ibid.
- 64 Ibid.
- 65 Ibid.
- 66 Cheng Zengjie, “Zai Baishui xian shuitu baochi xianchang huiyi shang de fayan” [“Speech at Water and Soil Conservation On-the-Spot Meeting in Baishui County”], October 15, 1965, file 50, 10, BCA.
- 67 “Baishui xian 1965 nian shuitu.”
- 68 Baishui xian renmin weiyuanhui shuili dianli ju, “Guanyu 1964 nian dong shuitu baochi gongzuo zongjie baogao” [“Winter 1964 Water and Soil Conservation Summary Work Report”], January 28, 1965, file 50, 2, BCA.
- 69 “Baishui Fenghuanggou liuyu yangban.”
- 70 The physical toil required to construct terraces is also stressed in Schmalzer, “Layer upon Layer,” 422, 433.
- 71 Baishui xian renmin weiyuanhui shuili dianli ju, “Guanyu 1964 nian dong shuitu.”
- 72 “Yi jieji douzheng wei gang xianqi dongji shuitu baochi gaochao” [“Use Class Struggle as the Key Link to Open a High Tide of Water and Soil Conservation during Winter”], January 22, 1965, file 50, 2, BCA.
- 73 “Baishui xian 1965 nian shuitu”; see also Baishui xian renmin weiyuanhui shuili dianli ju, “Guanyu 1964 nian dong shuitu”; “Yi jieji douzheng wei gang xianqi”; “Baishui Fenghuanggou liuyu yangban.”
- 74 “Baishui xian 1965 nian shuitu.”
- 75 “Baishui Fenghuanggou liuyu yangban.”
- 76 “Guanyu xiaji shuitu baochi gongzuo jinzhan qingkuang de baogao” [“Report on the Summer Water and Soil Conservation Work Progress Situation”], August 14, 1964, file 50, 2, BCA.
- 77 “Baishui xian 1965 nian shuitu.”
- 78 “Guanyu yijuliusi nian xiaji shuitu baochi gongzuo jiancha qingkuang de jianbao” [“Brief Report on Water and Soil Conservation Inspection Situation in Summer 1964”], October 7, 1964, file 50, 2, BCA.
- 79 “Guanyu shuitu baochi gongzuo.”
- 80 “Guanyu yijuliusi nian xiaji shuitu.”
- 81 “Guanyu shuitu baochi gongzuo.” Gouan and other brigades also earned praise for adding “quality work points.” See “Guanyu yijuliusi nian xiaji shuitu.”
- 82 “Baishui xian 1965 nian shuitu.”
- 83 “Beiqian dadui zhishan zhishui.”

- 84 “Shaanxi sheng Baishui xian shuitu baochi gongzuozhan guanyu yijiuliuliu nian xiaji yangban gongzuo zongjie baogao” [“Shaanxi Province Baishui County Water and Soil Conservation Work Station Summary Report on Model Work in Summer 1966”], October 23, 1966, file B 10196, 2, Chinese Academy of Sciences and Ministry of Water Resources Institute of Water and Soil Conservation Materials Center, Yangling, Shaanxi. Similar reports also found in “Guanyu Baishui Pucheng diqu xiaji shuitu baochi jianshe gongzuo baogao” [“Work Report on Summer Water and Soil Conservation Construction Work in the Baishui and Pucheng Area”], October 23, 1966, file B 10195, Chinese Academy of Sciences and Ministry of Water Resources Institute of Water and Soil Conservation Materials Center.
- 85 “Shaanxi sheng Baishui xian shuitu baochi,” 2.
- 86 Ibid.
- 87 “Baishui Fenghuanggou liuyu yangban.”
- 88 “Shaanxi sheng Baishui xian shuitu baochi,” 3.
- 89 Ibid.
- 90 “Beiqian dadui zhishan zhishui.”
- 91 “Shaanxi sheng Baishui xian shuitu baochi,” 2.
- 92 Ibid., 3.
- 93 “Guanyu Baishui Pucheng diqu,” 5.
- 94 “Shaanxi sheng Baishui xian shuitu baochi,” 4.
- 95 “Beiqian dadui zhishan zhishui.”
- 96 “Shaanxi sheng Baishui xian shuitu baochi,” 4; Interview in Xiaowadi, May 29, 2019.
- 97 “Shaanxi sheng Baishui xian shuitu baochi,” 8–9.
- 98 Interview with Zhu Shiguang, October 29, 2017.
- 99 Baishui xian shuibaozhan, “Gongzuo huibao” (Work report), January 12, 1974, file 6, 1, BCA.
- 100 *Baishui County Gazetteer*, 168–69. This distribution pattern reflected nationwide trends. See Robert Ash, “Squeezing the Peasants: Grain Extraction, Food Consumption, and Rural Living Standards in Mao’s China,” *China Quarterly* 188 (2006): 959–98.
- 101 Mao Zedong, “On Contradiction,” August 1937, https://www.marxists.org/reference/archive/mao/selected-works/volume-1/mswv1_17.htm.