Greening Mines and Revitalizing Cultural Tourism

——Ecological Restoration and Economic Transition at Abandoned Mines in Shizuishan, Ningxia

Abstract: The Shitanjing mining area in Shizuishan, Ningxia Autonomous Region, China, exemplifies the transition of resource-depleted mining areas in arid and semi-arid northwestern China. Ecological rehabilitation, including slope regrading, backfilling with mining waste, soil improvement, and revegetation, has improved local ecological conditions. Hongmei apricot cultivation and the development of cultural tourism and film production using industrial and mining heritage have created new development opportunities. The town has hosted over 40 film and television productions and received China's AAA-rated tourist attraction designation in 2025. Its shift from a coal-mining town to a green ecological area and then to a green cultural tourism destination offers practical lessons for integrating ecological restoration with successor industries in resource-depleted mining areas.

Keywords: ecological restoration of mines; industrial transition; tourism and film town; resource-depleted mining areas

I Background

Decades of intensive mineral extraction in the Helan Mountains left many abandoned mines with exposed hillsides, degraded soil, pollution, and damaged vegetation. The Shitanjing mining area lies in the core ecological protection zone of the northern Helan Mountains and covers 356 square kilometers. It was once a major producer of high-quality Taixi coal, with an annual output of 7.3 million metric tons.

More than 50 years of mining caused coal-dust dispersal, wastewater accumulation, severe soil erosion, and slope instability. These impacts were intensified by low rainfall, thin soils, loose rock and soil, and infertile saline-alkaline conditions. As a result, the area's ability to reduce wind erosion, stabilize sand, and retain water declined sharply, making Shitanjing both a priority restoration area and one of the most challenging ecological rehabilitation sites in the Helan Mountains.

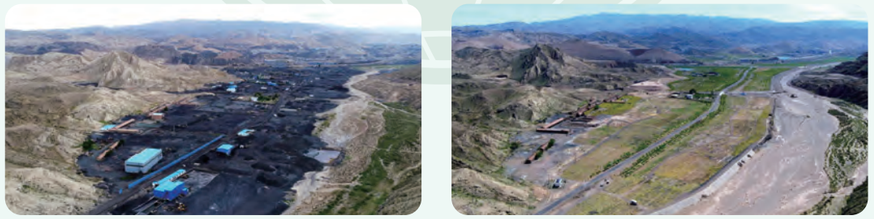


Figure 1. Aerial view of the Shitanjing mining area after restoration in 2025
(Image source: Ningxia Hui Autonomous Region Bulletin on Territorial Spatial Ecological Conservation and Restoration 2025)

II Key Measures

(1) Restoring mined land through systematic rehabilitation

- Restoration has covered 227.62 hectares of mined land through slope regrading, bench lowering, waste backfilling, soil improvement, soil capping, and revegetation, including 50,000 m^3 of slope stabilization, 170,000 m^3 of soil improvement, and over 20,000 saplings planted.
- Plant selection focused on drought-tolerant native species, including tamarisk, peashrub, and Mongolian wheatgrass. Pit planting, broadcast grass seeding, and drip irrigation were combined to support vegetation recovery and maintenance.



Figure 2. Panoramic view of the Shitanjing film town
(Image source: People's Daily Online)

(2) Integrating ecological restoration with economic fruit cultivation

- Contiguous Hongmei apricot orchards were established in restored areas, combining soil stabilization and revegetation with productive land use, linking ecological restoration with fruit cultivation and local income generation.



Figure 3. Hongmei apricot orchards in the Dadenggou-Gannigou area of Shitanjing (Image source: Focus on Forests)

(3) Reusing industrial heritage for cultural tourism and film production

- Well-preserved industrial and mining buildings form the basis of a town focused on industrial heritage tourism and film production. Accommodation, dining facilities, props storage, and support services have attracted more than 40 film and television productions, generating 13,000 cumulative engagements for extras.
- The town sought central budget funding under national programs for independent industrial and mining areas and partnered with the Beijing Film Academy to establish a film and television production practice base.
- It also links tourist trains, industrial heritage sites, ecological restoration landscapes, and film shooting locations, and develops businesses such as music festivals, off-road events, specialty dining, and stargazing camps. In addition, in 2025, the town received China's AAA-rated tourist attraction designation and welcomed 170,000 visitors.



Figure 4. Street view of the Shitanjing Industrial Cultural Tourism and Film Town (Image source: Sohu.com and Feeker Travel)

(4) Combining cost and carbon reductions with ecological improvements and employment transitions

- Mining waste is reused as backfill, and surplus soil from municipal works improves local soil. Paired with drought-tolerant native plants, these measures cut transport, soil-purchase, and maintenance costs while boosting carbon sequestration, jointly addressing coal dust, mine-pit wastewater, soil erosion, and wind-blown dust, and restoring the area's capacity to reduce wind erosion, stabilize sand, and retain water.
- Fruit cultivation, ecological maintenance, tourism, film production support, and event services provide local employment, helping laid-off miners and nearby residents transition into new jobs.

III Lessons Learned

Shitanjing's experience shows that systematic ecological restoration should underpin the transition of resource-depleted mining areas. Government coordination, corporate responsibility, dedicated funding, and private investment should support coordinated arrangements linking project implementation, operation, and maintenance. Revegetation should suit local conditions, integrating native vegetation recovery, commercial tree and fruit cultivation, and industrial heritage conservation. This approach turns damaged land, idle assets, and local labor into resources for developing successor industries like cultural tourism, film production, and sports events, offering a practical pathway for a green and just transition in traditional energy regions.

Case provided by CCICED Special Policy Study on Green and Just Transitions Pathways for Traditional Energy Regions