



PART 2

Read the text below and answer questions 14–26.

THE RESTORATION OF THE LOESS PLATEAU: A CASE STUDY

A

The Loess Plateau of northern China is widely discussed in environmental policy circles because it combines an unusually erodible geology with a long history of intensive land use. The region is mantled with deep deposits of aeolian soil—fine, windblown loess that is fertile when stable but highly vulnerable when exposed. Over decades, cultivation expanded onto steep slopes, grazing pressure increased, and vegetation was removed for fuel and fodder. This anthropogenic degradation altered the protective cover that normally buffers soil from raindrop impact and slows overland flow. Once the surface was denuded, storms could detach particles and carve gullies, transporting sediment into streams and rivers. The immediate consequence was declining soil depth and fertility on farms; the wider consequence was an increased sediment burden downstream. In this context, erosion was not an abstract geomorphic process but a predictable outcome of land use that stripped vegetation from steep terrain, leaving loess directly exposed to rainfall and runoff.

B

Early attempts to “green” degraded areas often relied on planting alone, but the Loess Plateau programme that gained international attention is better characterised as an effort to change the drivers of decline. A central pillar was to reduce pressure on fragile slopes by restricting grazing and addressing intensive cultivation on gradients that could not be farmed sustainably. In practical terms, this meant curbing overgrazing and converting selected steep croplands back to grassland or forest. The logic was process-based: if the stressor continued—animals removing seedlings, hooves compacting soil, and farmers repeatedly disturbing the surface—then any replanting would be short-lived. By shifting land use on the most vulnerable hillsides, managers aimed to restore ground cover and root networks that stabilise soil. The strategy also signalled an important conceptual move in restoration thinking: the objective was not merely to add vegetation, but to alter the incentives and constraints that had made vegetation loss rational for households facing poverty and land scarcity.

C

Engineering and agricultural redesign were equally important, particularly through the expansion of terraced agriculture. Terracing is often described as a traditional technique, but on the plateau it was implemented at scale as a soil-and-water conservation



intervention. By reshaping slopes into step-like benches, terraces reduce the velocity of runoff, increase infiltration, and retain soil that would otherwise be washed away. Crucially, terracing was linked to a broader land-use bargain: steep, erosion-prone fields were withdrawn from cropping, while productivity was intensified on gentler, more stable areas. The programme therefore sought to protect livelihoods by improving yields and reliability on remaining farmland, rather than simply reducing cultivated area and expecting households to absorb the loss. In effect, the project combined integrated watershed management with agronomic upgrading: stabilise terrain, concentrate cultivation where it is sustainable, and reduce the need to farm marginal slopes that generate disproportionate erosion.

D

A less visible but strategically important component concerned household energy. Vegetation removal on the plateau was not driven only by farming; it was also reinforced by daily fuel needs. In regions where coal, gas, or electricity were limited or expensive, households often relied on shrubs and trees for cooking and heating, a practice that steadily depleted regrowth and exposed soils. The restoration programme therefore promoted alternative energy sources and improved stoves to reduce dependence on cutting woody vegetation for fuel. More efficient stoves lowered the volume of biomass required per meal, and access to alternative fuels reduced the incentive to harvest remaining shrubs. The relevance to erosion control is direct: when fuelwood collection declines, vegetation cover can recover and remain intact, allowing roots to bind loess and surface litter to absorb rainfall energy. In this sense, energy transition was not peripheral social policy; it was a biophysical intervention aimed at reducing a continuing driver of landscape degradation.

E

The Loess Plateau case also illustrates that restoration is rarely a simple “more vegetation equals more sustainability” equation. Vegetation recovery can be visible within a relatively short period, particularly when grazing is restricted and slopes are stabilised. However, long-term outcomes depend on species choice, hydrology, and water balance. In semi-arid environments, fast-growing tree plantations may increase evapotranspiration and draw down soil moisture, potentially reducing water availability for other vegetation or downstream flows. This “green versus water” debate does not imply that revegetation is misguided, but it warns that ecological success must be judged in relation to local water constraints. A hillside that appears greener may still become less sustainable if plantings raise water demand in already dry areas. The programme therefore highlights the importance of matching plant types and densities to hydrological reality, and of treating



the landscape as a coupled soil–water–vegetation system rather than a canvas for uniform greening.

F

Governance and social acceptance were central to implementation because the programme altered everyday routines. Restricting slope farming and changing grazing patterns affected labour schedules, livestock management, and household income strategies. The passage emphasises that enforcement without community acceptance could have produced resistance, undermining compliance and threatening the durability of early gains. For this reason, policy measures were often paired with incentives, technical support, and, in some cases, compensation. Training helped households adopt new practices and maintain infrastructure such as terraces, whose effectiveness depends on continual upkeep. The concept of stewardship is relevant here: long-term success required local actors to see sustainable land use not merely as an external rule, but as a practical pathway that protected livelihoods. In short, the project treated behaviour change as a necessary condition for ecological change, acknowledging that governance failures can reverse biophysical progress.

G

Downstream impacts help explain why the Loess Plateau project drew sustained attention. When hillslopes are stabilised and gullies are controlled, less sediment is delivered to rivers. In the Yellow River basin, reduced sediment loads can improve water management by lowering the frequency of channel siltation and reducing the operational burdens on reservoirs. The passage notes that these benefits include lower dredging costs and reduced expenditure on reservoir maintenance, since sediment accumulation shortens reservoir life and diminishes storage capacity. Such downstream effects are important because they link local land management to regional infrastructure outcomes: erosion control on uplands can yield economic benefits far beyond the farms where interventions occur. This broader framing also strengthens political justification for investment, since downstream cities and industries often bear the costs of sediment in the form of damaged infrastructure and higher management expenses.

H

Overall, the Loess Plateau is best understood as a systems intervention rather than a single-technology success story. Restoration measures included altering land use on steep slopes, stabilising terrain through terracing, reducing fuel-driven vegetation loss, and building governance arrangements that supported compliance. Reported outcomes in several project areas included more stable yields and improved livelihoods, and these were associated with reductions in poverty—yet the passage does not offer an exact



percentage change across the entire plateau, underscoring the limits of aggregate claims. The project's continuing relevance lies in what it suggests about scaling restoration: early greening is insufficient without long-term oversight, realistic ecological choices that respect water constraints, and policies that make sustainable behaviour feasible for the people who live on the land. In this sense, the programme's reputation rests on integrating erosion control with livelihood protection, while recognising that durable success depends on maintenance and continued adherence to the new land-use regime.

Questions 14–18

Select the correct answer.

14 According to the passage, why did erosion become particularly severe on parts of the Loess Plateau?

- A** The natural properties of loess and rainfall were sufficient to cause severe erosion even where vegetation remained intact.
- B** Sediment accumulating in rivers increased the amount of runoff flowing across cultivated hillsides.
- C** Intensive land use removed protective vegetation from steep slopes, exposing vulnerable soil to rainfall and runoff.
- D** Declining soil fertility caused farmers to abandon steep land, after which vegetation loss accelerated.

15 What is presented as the central principle behind the restoration efforts that gained international attention?

- A** Replanting damaged hillsides before changing the farming practices responsible for degradation.
- B** Removing or reducing the pressures that caused degradation instead of depending on planting by itself.
- C** Concentrating cultivation on steeper land while protecting gentler slopes from disturbance.
- D** Treating large-scale terracing as the main solution regardless of other land-use pressures.

16 Why were alternative energy sources and improved stoves included in the programme?

- A** They reduced a household demand that was continually contributing to the loss of woody vegetation.
- B** They allowed households to earn additional income from selling locally collected fuelwood.



C They provided extra energy for machinery used to construct and maintain agricultural terraces.

D They encouraged households to replace naturally regenerating shrubs with commercial tree plantations.

17 What warning does the passage give about judging success by vegetation recovery alone?

A Greater vegetation cover can reduce agricultural productivity if too much land is removed from cultivation.

B Water problems mainly occur when grazing restrictions are relaxed after vegetation has become established.

C A greener landscape is sustainable only when vegetation has regenerated without active planting.

D A visibly greener slope may still face water-balance problems if the vegetation places excessive demand on limited moisture.

18 What does the passage imply is most important for preserving the benefits of restoration over time?

A Continuing to plant vegetation at the same density used during the initial restoration period.

B Keeping the new land-use restrictions unchanged without further technical or ecological adjustment.

C Maintaining restored systems and continued adherence to land-use changes while making ecologically realistic choices.

D Allowing marginal slopes to return gradually to cultivation once sufficient vegetation cover has developed.

Questions 19–22

Complete the summary below. Choose **ONE WORD ONLY** from the text for each answer.

Measures and outcomes of the restoration programme

The programme reduced pressure on fragile slopes by converting selected steep croplands back to grassland or **19** Terraces were also used because they slow runoff and increase **20** In several project areas, reported results included more stable yields and improved **21**, and these changes were associated with reductions in **22**

Questions 23–26



Choose **TRUE** if the statement agrees with the information given in the text, choose **FALSE** if the statement contradicts the information, or choose **NOT GIVEN** if there is no information on this.

23 The passage indicates that restoration measures included changing how land on steep slopes was used.

24 The passage gives the exact cost of the alternative energy stoves provided to households.

25 The passage suggests that vegetation can recover quickly, but that long-term outcomes depend on factors such as water availability.

26 The passage states that enforcement without community acceptance could have increased resistance to the programme.

Answer Key

14. C

15. B

16. A

17. D

18. C

19. Forest

20. Infiltration

21. Livelihoods

22. poverty

23. TRUE

24. NOT GIVEN

25. TRUE

26. TRUE