



PART 1

Read the text below and answer questions 1–13.

FORESTS: THE LUNGS OF THE EARTH

Forests are often called the “lungs of the Earth”, a metaphor that captures their role in exchanging gases with the atmosphere and supporting life. Through photosynthesis, trees absorb carbon dioxide and release oxygen, while soils and vegetation store vast amounts of carbon. In many regions, intact forests function as carbon sinks: they remove more carbon from the atmosphere than they emit, storing it in trunks, roots, deadwood, and soil organic matter. Yet this balance is not guaranteed. When forests are disturbed by logging, fire, or drought, the same ecosystems can shift from carbon sinks to carbon sources, releasing carbon through combustion, decay, and reduced growth.

The climate role of forests is therefore not only about carbon sequestration. Tree canopies cool the air by transpiration, a process in which water drawn up from the soil evaporates from leaves, carrying heat away. This evaporative cooling can lower surface temperatures and reduce heat stress in nearby communities. Large forested areas can also generate their own weather effects: moisture recycled from forests contributes to humidity and can feed regional rainfall. In some basins, repeated cycles of evaporation and precipitation help sustain wet-season patterns. By contrast, deforestation can reduce humidity, raise temperatures, and disrupt rainfall timing, amplifying heat extremes beyond the immediate area cleared.

Biodiversity is another essential service provided by forests. They supply habitat for a majority of terrestrial species, from insects and fungi to birds and mammals, many of which contribute to ecosystem stability through pollination, seed dispersal, and nutrient cycling. Complex forest structures—canopy layers, understory plants, fallen logs, and soil microhabitats—create niches that support specialised organisms. When forests are fragmented into smaller patches, edges become hotter, drier, and windier, changing local conditions. Species that require large territories or specific microclimates can decline quickly, and isolated populations may suffer reduced genetic diversity over time.

Human communities depend on forests in varied ways. Indigenous groups often manage forests through long-standing knowledge systems, including rotational harvesting, controlled burning, and rules about sacred or protected areas. Rural households may rely on fuelwood, medicinal plants, wild foods, and small-scale timber, while forests also support national economies through construction materials and exports. However, these benefits are unevenly distributed. Conflict can arise when commercial extraction undermines local rights or when protected areas restrict traditional access without



providing viable alternatives. In practice, forest governance involves balancing conservation goals with livelihoods, cultural continuity, and fair decision-making.

Deforestation and degradation have multiple drivers. Agricultural expansion is frequently the largest, but infrastructure projects, mining, and illegal logging can also be major contributors. In some regions, forests are cleared for cattle or plantation crops; elsewhere, forests are thinned gradually through repeated small removals, such as selective logging or fuelwood extraction. This degradation can be harder to detect than clear-cutting because canopy cover may remain partially intact, yet it can significantly reduce carbon storage, simplify habitat structure, and increase vulnerability to fire. Over time, degraded forests often become more accessible to further exploitation, creating a cycle of incremental loss.

Policy responses range from protected areas to market incentives. Payments for ecosystem services aim to reward landowners for keeping forests standing by compensating them for the climate and water benefits forests provide. Certification schemes attempt to shift timber markets toward sustainable practices by requiring traceability and management standards, though their effectiveness depends on auditing quality and enforcement. More recently, carbon finance mechanisms have sought to value forests as climate assets, encouraging conservation through carbon credits. Critics, however, raise concerns about measurement, permanence, and leakage: carbon stored today may be released later through fire, and protecting one area may shift deforestation pressure elsewhere unless wider drivers are addressed.

Restoration has become a prominent strategy, but it is not a simple matter of planting trees. Restoring a forest requires choosing appropriate species, maintaining soils, and allowing ecological processes—such as seed dispersal, mycorrhizal relationships, and natural succession—to recover. Planting monocultures can provide short-term carbon gains, yet such systems may fail to support biodiversity or resilience, especially under drought or pest outbreaks. Successful restoration often involves protecting natural regeneration and rebuilding landscape connectivity so that plants and animals can recolonise. In many cases, preventing repeated disturbance and supporting recovery over time is as important as planting itself.

Future forest outcomes will depend on managing trade-offs. Expanding protected areas can safeguard biodiversity and carbon, but it must be balanced with the rights and livelihoods of people who live in forest regions. Climate change is altering fire regimes and pest outbreaks, creating new pressures even where logging is controlled. At the same time, demand for deforestation-driven commodities can undermine local conservation unless supply chains and policies shift. Long-term solutions will likely combine stronger



governance, indigenous leadership, more transparent land rights, and economic pathways that reduce incentives to clear forests while supporting communities that depend on them.

Questions 1–5

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.

- 1** The passage states that undisturbed forests can function as carbon sinks but may become carbon sources after events such as fire or drought.
- 2** The passage claims that forests influence climate only through storing carbon and have no effect on rainfall patterns.
- 3** The passage gives a specific percentage showing how much global rainfall depends on moisture recycled from forests.
- 4** The passage states that fragmented forests always maintain the same microclimates as unbroken forests.
- 5** The passage suggests that conflicts may occur when commercial extraction undermines local rights or when protection limits traditional access.

Questions 6–9

Select the correct answer.

- 6** What does the passage suggest about the climate effects of large forested areas?
A They mainly depend on animal biodiversity rather than vegetation
B They can help shape regional conditions by recycling moisture and affecting rainfall
C They disappear once a forest is protected from logging
D They occur only in tropical regions and not elsewhere
- 7** According to the passage, which factor is most frequently the largest driver of deforestation?
A Agricultural expansion
B Pollination loss
C Seed dispersal decline
D Moisture recycling
- 8** What concern is mentioned about carbon-finance approaches to protecting forests?
A They reduce rainfall by increasing humidity
B They make illegal logging impossible to monitor



- C** They remove the need for certification schemes
- D** They raise questions about measurement and permanence

9 Which statement best describes a limitation of relying on tree planting as a restoration strategy?

- A** It is always slower than natural regeneration in every ecosystem
- B** It guarantees biodiversity recovery even if only one species is planted
- C** Planting monocultures may store carbon but fail to build resilience or biodiversity
- D** Restoration succeeds only when forests are converted into plantations

Questions 10–13

Complete the sentences below. Choose **NO MORE THAN TWO WORDS** from the text for each answer.

10 Tree canopies cool the air by, which involves water evaporating from leaves.

11 When forests are broken into smaller patches, species needing specific can decline quickly.

12 Payments for ecosystem services aim to keep forests by compensating landowners.

13 Successful restoration often involves protecting rather than relying only on planting.

Answer Key

1. TRUE
2. FALSE
3. NOT GIVEN
4. FALSE
5. TRUE
6. B
7. A
8. D
9. C
10. transpiration



11. microclimates

12. standing

13. natural regeneration