



GEO.PH8 Tropical Rainforests: Sustainable Management Strategies

AQA 8035 · Calculators not allowed · about 50 minutes

Total Marks

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Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** Define the term 'sustainable management' as it applies to a tropical rainforest ecosystem.

(Total for Question 1 is 1 mark)

- 2** Give ONE reason why conserving rainforest biodiversity is an objective of sustainable management.

(Total for Question 2 is 1 mark)

- 3** State ONE way that selective logging differs from clear-felling in rainforest management.

(Total for Question 3 is 1 mark)

- 4** Describe TWO environmental benefits of replanting native tree species after selective logging in a tropical rainforest.

(Total for Question 4 is 2 marks)

- 5** Explain how Forest Stewardship Council style certification (forest-product certification) can help reduce tropical deforestation.

(Total for Question 5 is 2 marks)

- 6** Give ONE example of how ecotourism can provide an economic incentive to protect a tropical rainforest. Name a country where ecotourism has been used in rainforest conservation.

(Total for Question 6 is 1 mark)

- 7** Describe TWO social benefits for local communities from well managed selective logging and replanting schemes in a tropical rainforest.

(Total for Question 7 is 2 marks)

- 8** Explain TWO ways that education and community involvement programmes can improve the sustainability of rainforest management.

(Total for Question 8 is 2 marks)

- 9** Give TWO features of a debt for nature swap that help protect tropical rainforest areas.

(Total for Question 9 is 2 marks)

- 10** Describe ONE limitation of using international hardwood agreements alone to stop illegal logging in a tropical rainforest.

(Total for Question 10 is 2 marks)

- 11** Explain HOW combining several management strategies, for example certification, ecotourism and education, can be more effective than using a single strategy to manage a tropical rainforest sustainably.

(Total for Question 11 is 2 marks)

- 12** Give ONE economic reason why some governments still allow clearance of rainforest despite sustainable management options existing.

(Total for Question 12 is 1 mark)

- 13** State TWO criteria that an FSC style certification scheme uses to judge whether a timber producer is managing a rainforest sustainably.

(Total for Question 13 is 2 marks)

- 14** Give ONE example of a measurable indicator that conservation programmes might use to show that a rainforest management scheme is succeeding.

(Total for Question 14 is 2 marks)

15 Use evidence and examples from tropical rainforest management strategies you have studied to answer this question.

'Evaluate the effectiveness of strategies used to manage a tropical rainforest sustainably.'

(Total for Question 15 is 9 marks)

Mark scheme · GEO.PH8 Tropical Rainforests: Sustainable Management Strategies

Question 1

- **B1** management that meets current needs while conserving the forest so it can provide resources and services for future generations, oe
- **Answer: Management that meets current needs while conserving the forest so it can continue to provide resources and ecosystem services for future generations.**

Question 2

- **B1** biodiversity provides many species that are important for medicines, food and ecosystem resilience, oe
- **Answer: Biodiversity provides species important for medicines, food and ecosystem resilience.**

Question 3

- **B1** selective logging removes only chosen trees while clear-felling removes most or all trees from an area, oe
- **Answer: Selective logging removes only chosen trees, whereas clear-felling removes most or all trees from an area.**

Question 4

- **B1** restores tree cover, reducing soil erosion and stabilising soils, oe
- **B1** helps rebuild habitat for wildlife, supporting biodiversity recovery, oe
- **Answer: Replanting restores tree cover which reduces soil erosion and stabilises soils, and it helps rebuild habitat for wildlife, supporting biodiversity recovery.**

Question 5

- **B1** certification sets standards for sustainable harvesting and chain of custody, so only timber from well-managed forests is labelled, oe
- **B1** consumers and companies pay premium prices for certified products, creating market incentives to avoid illegal logging and deforestation, oe
- **Answer: Certification sets standards for sustainable harvesting and traceability so timber from well managed forests is labelled; consumers and companies then pay premium prices for certified products, creating market incentives to avoid illegal logging and deforestation.**

Question 6

- **B1** example and country, e.g. ecotourism creates income and jobs for local people so they gain from keeping forest intact; Costa Rica is a well known example, oe
- **Answer: Ecotourism creates income and jobs for local people so they gain from keeping the forest intact; Costa Rica is a well known example.**

Question 7

- **B1** provides local employment and income from regulated timber work, oe
- **B1** second social benefit, e.g. skills training and improved community infrastructure or services funded by the scheme, oe
- **Answer: It provides local employment and income from regulated timber work, and it can fund skills training and improved community infrastructure or services.**

Question 8

- **B1** education raises awareness of the value of the forest, reducing destructive activities, oe
- **B1** second way, e.g. community involvement gives local people a stake in decision making, increasing compliance with sustainable rules, oe
- **Answer: Education raises awareness of the value of the forest, reducing destructive activities; and involving the community in decision making gives local people a stake in outcomes, increasing compliance with sustainable rules.**

Question 9

- **B1** cancels or reduces a country's external debt in return for commitments to protect specified areas of forest, oe
- **B1** provides funding or long term finance for conservation projects that would otherwise lack money, oe
- **Answer: They cancel or reduce a country's external debt in return for commitments to protect specified forest areas, and they provide funding or long term finance for conservation projects that would otherwise lack money.**

Question 10

- **B1** enforcement can be weak in producer countries, so illegal timber may still reach markets despite agreements, oe
- **B1** linked detail, e.g. corruption, lack of resources for customs checks or complex trade routes reduce effectiveness, oe
- **Answer: Enforcement can be weak in producer countries so illegal timber may still reach markets despite agreements; corruption, lack of customs resources and complex trade routes reduce effectiveness.**

Question 11

- **B1** combination tackles different drivers of deforestation, e.g. certification targets market demand while ecotourism provides local income and education builds local support, oe
- **B1** linked detail, e.g. combined approaches reduce economic need for destructive activities and improve local capacity to manage forests, oe
- **Answer: Combining strategies tackles different drivers of deforestation: certification targets market demand, ecotourism provides local income, and education builds local support. Together they reduce economic need for destructive activities and improve local capacity to manage forests.**

Question 12

- **B1** short term financial gain from activities such as agriculture, cattle ranching or commercial plantations, oe
- **Answer: Short term financial gain from activities such as agriculture, cattle ranching or commercial plantations.**

Question 13

- **B1** criterion 1, e.g. maintaining biodiversity, oe
- **B1** criterion 2, e.g. ensuring legal and traceable supply chains, oe
- **Answer: For example, maintaining biodiversity and ensuring legal, traceable supply chains.**

Question 14

- **B1** measurable indicator, e.g. area of forest under protection increased (hectares), population trend of a key species, or number of local people employed in sustainable jobs, oe
- **B1** linked detail showing why it is measurable and relevant, oe
- **Answer: For example, an increase in area of forest under protection measured in hectares, or a rising population trend for a key species; these are measurable indicators of success and can be monitored over time.**

Question 15

- **Level 1** (1-3): Simple statements about one or two management strategies with limited development or example. Judgement, if any, is unsupported or brief.
- **Level 2** (4-6): Clear evaluation that considers advantages and limitations of several strategies, with some reference to specific examples or case material. A balanced judgement is attempted.
- **Level 3** (7-9): A thorough, well balanced evaluation that analyses a range of strategies, uses accurate, named examples and evidence, compares effectiveness across ecological, economic and social criteria, and reaches a clear, justified conclusion.
- **Indicative content:**
 - Knowledge of strategies: selective logging with replanting, forest-product certification, ecotourism, education and community involvement, international hardwood agreements, debt for nature swaps and protected areas.
 - For each strategy, consider how it works: selective logging limits removal and allows recovery while providing timber; certification creates market incentives; ecotourism creates alternative income; education builds local support; debt for nature swaps free funds for conservation.
 - Advantages to assess: protection of biodiversity, maintenance of carbon stores, provision of sustainable livelihoods, legal and market mechanisms to reduce illegal logging, and long term funding for conservation.
 - Limitations to assess: enforcement difficulties, corruption, limited geographic reach of small scale schemes, reliance on volatile tourist markets, initial cost of establishing certification and monitoring, displacement of local people if protected areas are imposed without consent, and governments prioritising short term economic gain.
 - Use of examples: Costa Rica shows success with ecotourism and reforestation; parts of the Amazon and Borneo show mixed results where illegal logging persists despite agreements; debt for nature swaps have been used to protect areas but can be limited in scale.
 - Comparison across criteria: ecological effectiveness, economic viability for local people and national governments, and social justice including indigenous rights.
 - A strong conclusion weighs evidence and judges which strategies are most effective alone or in combination, and under what conditions they succeed or fail.