



**ECOSYSTEMS AND SOCIETIES
STANDARD LEVEL
PAPER 2**

Thursday 15 May 2008 (morning)

Candidate session number

2 hours

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INSTRUCTIONS TO CANDIDATES

- Write your session number in the boxes above.
- Do not open this examination paper until instructed to do so.
- Section A: answer all of Section A in the spaces provided. Refer to the resource booklet which accompanies this question paper.
- Section B: answer two questions from Section B. Write your answers on answer sheets. Write your session number on each answer sheet, and attach them to this examination paper and your cover sheet using the tag provided.
- At the end of the examination, indicate the numbers of the questions answered in the candidate box on your cover sheet and indicate the number of sheets used in the appropriate box on your cover sheet.



SECTION A

Answer all of Section A in the spaces provided.

The resource booklet provides information on Madagascar. Use the resource booklet and your own studies to answer the following.

1. (a) Suggest why Madagascar has such

(i) high biodiversity. [2]

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(ii) high rates of endemism (species only found in Madagascar). [2]

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(b) (i) Explain why Madagascan species have been vulnerable to hunting in the past. [1]

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(ii) With reference to **named** species from the resource booklet, predict **two** impacts that the introduction of non-native species might have on native species in Madagascar. [2]

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(This question continues on the following page)

(Question 1 continued)

- (c) Construct a model (diagram) that demonstrates why the soil of the central plateau in Madagascar has become degraded. [4]

- (d) With reference to **Figure 8**, explain why reduced-impact logging is likely to be more sustainable than conventional logging. [2]

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- (e) (i) With reference to **Figure 4**, calculate the proportion of Madagascar's total area which is protected. [1]

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- (ii) Suggest **two** reasons why the **economic** benefits of conservation are being promoted by the authorities in Madagascar. [2]

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(Question 1 continued)

(f) With reference to **Figure 10**,

(i) suggest **two** reasons for the variation in animal groups found at sites 1, 2 and 3. [3]

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(ii) evaluate the reserve shown according to principles of good reserve design. [3]

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(g) (i) With reference to **Figure 5**, state the expected total Madagascan population in 2025. [1]

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(ii) Justify whether or not you think the government should attempt to reduce the rate of population growth on the island. [2]

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SECTION B

Answer **two** questions. Write your answers on the answer sheets provided. Write your session number on each answer sheet, and attach them to this examination paper and your cover sheet using the tag provided.

Each essay is marked out of [20] of which [2] are for clarity of expression, structure and development of ideas:

- [0] Quality of expression, structure and development is poor.
- [1] Quality of expression, structure and development is limited.
- [2] Quality of expression is clear, structure is good and ideas are well developed.

2. (a) Outline the factors which can affect global climate other than those attributed to human activities. [6]
- (b) Describe the significant negative impacts of global warming with reference to specific examples. [7]
- (c) Discuss the possible positive benefits associated with the predicted changes in world climate over the next 100 years. [5]

Expression of ideas [2]

3.

The perspective of the late German green philosopher Rudolf Bahro is accepted that, for worldwide sustainability, industrialized countries need to reduce their impact upon the Earth to about one tenth of what it is at the present time.

[Source: W Rees, M Wackernagel and P Testemale, (2005), *Our Ecological Footprint*, New Society Publishers]

- (a) With reference to a **named** example, outline the concept of an ecological footprint. [5]
- (b) LEDCs tend to have smaller ecological footprints than MEDCs. With reference to case studies explain why this is so. [7]
- (c) Describe **three** national strategies that could be used to reduce an ecological footprint and suggest, giving reasons, which one is most likely to succeed. [6]

Expression of ideas [2]



4.

While much attention has been focused on the impending planet-wide oil shortage, a far greater problem awaits us. Arguably the next world war will be fought over water resources not oil reserves.

[Source: adapted from www.waterconserve.org]

- (a) Describe the Earth's water budget and explain why the distribution of water resources could be a source of conflict in the future. [7]
- (b) Discuss how eco-centric solutions to water resource needs can be applied on a local scale. [5]
- (c) Describe and evaluate the role of techno-centric solutions in meeting the demand for food. [6]

Expression of ideas [2]

- 5.
- (a) Discuss how gross productivity, net productivity and diversity will change over time as a habitat goes through succession. Illustrate your answer with a **named** case study. [5]
 - (b) Explain the present distribution of desert and tundra and discuss the factors controlling their relative productivity. [6]
 - (c) Outline the components of an Environmental Impact Assessment (EIA) and justify your personal viewpoint on the value of EIAs in the environmental decision making process. Refer to a specific EIA in your answer. [7]

Expression of ideas [2]

