

# ENVIRONMENTAL MANAGEMENT

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Paper 8291/11  
Paper 11

## Key messages

- It is important that instructions are followed carefully. An understanding of the differences between the command words state/explain/suggest/describe/discuss/evaluate will help candidates to address the question clearly.
- Candidates should note the number of number of marks available for each question and compose their answers accordingly. This will give them an indication of the amount of content and detail expected.

## General comments

There was a reasonably good response to all questions on this paper though in some cases performance was uneven across the two sections of the paper. Some candidates did not answer **Question 1** (plate tectonics) as well as they answered **Question 2** (weather). Topics which proved more challenging were paleomagnetism and the development of weather patterns.

Many answers showed a good understanding of terms and attention to detail, with effective use of exemplar material.

In this session, more successful answers were enhanced by effective use of appropriate examples to illustrate key points and the provision of supporting details using appropriate terminology.

## Comments on specific questions

### **Section A**

#### **Question 1**

- (a) (i) The naming of *Glossopteris* was generally understood.
- (ii) Candidates were familiar with Pangaea and were able to suggest that the shapes fitted together as though they were pieces of a puzzle. The more successful answers then provided an example from the figure to illustrate the answer, such as Africa and South America and gained full credit.
- (iii) Most candidates showed good use of technical terms in this answer. In less successful answers there was some confusion between describing ocean floor spreading and plate tectonics. Good answers correctly described the movement of plates as a result of convection currents in the magma or correctly described the processes which lead to ocean floor spreading.
- (iv) This question was only answered well by the strongest candidates. Successful answers suggested that if minerals were found in a particular (named) place and another (named) place was once joined to with it, then the same minerals may well be found there as well. Only a minority of answers provided named examples of minerals.
- (b) (i) The diagram labels were in the main correctly added. A common incorrect answer was with the placement of Y, with the most popular incorrect position being at the mid-ocean ridge.
- (ii) The most successful answers described the alternating reversals, the mirror image at either side of the ridge and the different thicknesses of the bands. The majority of candidates were able to describe the alternating reversals.

- (iii) Only stronger answers were able to demonstrate an understanding of the concepts behind paleomagnetism. Some answers were limited to a mention of age/dates and ocean floor spreading.

## Question 2

- (a) (i) The points were generally well plotted. The most common error was to use the temperature scale.
- (ii) This was generally well answered. A common error was to refer to Western India as the climatic region.
- (iii) This was very well answered with good use of the data from the figure.
- (iv) Only the strongest candidates were able to correctly state that clouds reduced the temperature by absorbing or reflecting the energy from the Sun. Weaker answers referred to the clouds blocking the Sun or the sunlight bouncing off the clouds.
- (b) (i) Strong answers showed an understanding of the concept of wind reversal over the Indian subcontinent. Less successful answers referred to January as well as July and simply described the two diagrams. Some candidates introduced concepts such as the Coriolis Effect, El Nino and the rotation of the Earth. A minority of candidates were able to suggest the temperature differences leading to the creation of the onshore winds.
- (ii) This question proved challenging for many candidates. Many answers did not correctly explain how the onshore winds develop over the Indian ocean. More successful answers were able to describe the formation of rain clouds with accuracy. Weaker answers referred to the Coriolis Effect and El Nino.
- (iii) Candidates were well versed in the likely problems and showed a good understanding of the effects. The most successful answers were detailed with developed points. Some answers were limited to lists. There was confusion between ozone depletion and the greenhouse effect and candidates who referred to heating without reference to the Indian climate were unable to gain full credit.

## Section B

**Question 3** and **Question 4** were almost equally popular while **Question 5** was chosen by fewer candidates. Both (a) and (b) were equally well tackled with only a small number of candidates not completing both parts.

### Question 3

- (a) There was good use of data by the majority of candidates. Less successful answers often did not give interpretations and just quoted the data. More successful answers referred to the differences in infrastructure and ability to respond to disasters between the different categories of country. Most candidates referred to the earthquakes and volcanoes whilst ignoring other examples of natural disasters such as the impact of severe weather.
- (b) For full credit, answers needed to show a good understanding of the methods of monitoring the two forms of natural disaster and to describe and evaluate their management. Many candidates used examples and comparisons to illustrate their answers. Less successful answers showed a lack of knowledge about the different monitoring methods and often only referred to observing smoke and ash from volcanoes.

Management was often mentioned but not adequately covered and in general was limited to the differences in time to respond between the two. More successful answers addressed the differences and compared situations of different economic development in terms of preparation and recovery showing a strong understanding of the content.

### Question 4

- (a) The most successful candidates provided supporting information and developed an argument in their answers. However, many candidates commented on the three points from the article but

offered little supporting evidence for their statements. Some answers were one-sided rather than offering a balanced response.

- (b)** Candidates showed a strong understanding of renewable sources of energy and provided good examples with evaluative analysis of their respective merits. The most successful answers also referenced fossil fuels and discussed sustainability. Candidates were able to offer examples from different countries of the use of renewable energy sources, including the Three Gorges Dam.

#### Question 5

- (a)** The potential effects of rising sea levels were well understood and described using the information from the figure.
- (b)** This was often not as well answered as **(a)** and many candidates did not answer the question as it was set and chose to focus on describing the effects of global warming rather than suggest ways to adapt to living with these effects. Others took the view that we could still prevent or reverse it and proceeded to describe ways in which this could happen. More successful candidates were able to suggest ways of adapting within these parameters and were able to produce strong answers.

# ENVIRONMENTAL MANAGEMENT

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Paper 8291/12  
Paper 12

## Key messages

- It is important that instructions are followed carefully. An understanding of the differences between the command words state/explain/suggest/describe/discuss/evaluate will help candidates to address the question clearly.
- Candidates should note the number of number of marks available for each question and compose their answers accordingly. This will give them an indication of the amount of content and detail expected.

## General comments

There was a reasonably good response to all questions on this paper though in some cases performance was uneven across the two sections of the paper. Some candidates did not answer **Question 1** (solar radiation) as well as they answered **Question 2** (weathering). Topics which proved more challenging were seasonal variation in solar radiation and the causes of weathering, in particular mechanical weathering.

Many answers showed a good understanding of terms and attention to detail, with effective use of exemplar material.

In this session, more successful answers were enhanced by effective use of appropriate examples to illustrate key points and the provision of supporting details using appropriate terminology.

## Comments on specific questions

### **Section A**

#### **Question 1**

- (a) (i) The placing of the X was generally well performed.
- (ii) Candidates were familiar with the concept but many struggled to successfully describe it. Most understood the idea of the difference in the angles of incidence but tended to refer to the Sun being closer to one point than the other. Most candidates correctly observed the larger area and were able to suggest the resultant difference. Successful answers discussed the difference in the amount of atmosphere through which the Sun's rays have to pass. Less successful answers suggested it was due to it being hot and dry at the equator or that there were fewer clouds.
- (iii) Candidates showed a good use of the technical terms for this answer. Less successful answers referred to 'blocked' or 'trapped' rather than the more accurate 'reflected' and 'absorbed'. Candidates demonstrated a good understanding of the role of ozone, clouds and particles in the atmosphere.
- (b) (i) There was some confusion in many answers between the rotation of the Earth and the orbit of the Earth around the Sun. Most candidates successfully identified the effect of the tilt of the planet contributing to seasonal variations but some candidates found describing the effect challenging. Successful answers demonstrated an understanding of the tilt, orbit and relationship to the Sun and correctly linked them.

- (ii) Successful answers described the long periods of darkness and the albedo effects of ice and snow as well as the correct description of the reasons. Weaker answers were unable to correctly describe the reduction of solar radiation.
- (iii) The most popular responses referred to the effect of the climate on plants and agriculture and also to the problems of transport and maintaining infrastructure. Some candidates misread the question and answered about the effect of human activity on the extreme polar climate rather than the other way around.

## Question 2

- (a) (i) This was answered well by almost all candidates.
- (ii) In general candidates were able to pick an appropriate mass movement. However the description of the phases of the process proved more challenging. Some weaker answers contained references to the action of the waves and the presence of buildings.
- (b) (i) This was well answered by most candidates.
- (ii) There were many strong answers to this question. Weaker candidates often chose examples which were chemical weathering, such as acid rain.
- (iii) Two routes towards successful answers were popular with candidates. The first was observing the tourist activity shown in the figure and correctly suggesting possible effects to accelerate the natural weathering process. The second route was to describe more general pollution effects such as industrial, traffic and other relevant sources of pollution in the wider locality which were relevant to the state of the statue and so were credited.
- (c) (i) Almost all candidates successfully identified the link between the site of the statue and the high acidity of the region. Stronger candidates were able to address the development point that the acid reacted with the sandstone to cause it to weather. Less successful answers simply said that the high acidity caused the damage without giving further detail.
- (ii) This was generally well answered with candidates able to offer a wide range of strategies to either protect the statue or manage and reduce the production of pollution which leads to the acid rain and which, in turn, causes the damage.

## Section B

**Question 3** and **Question 4** were almost equally popular, while **Question 5** was chosen by fewer candidates. Both (a) and (b) were equally well tackled with only a minority not completing both parts.

### Question 3

- (a) There was good use of data by the majority of candidates. Less successful answers tended not to offer interpretations beyond quoting the data. More successful answers referred to the problems of overdependence on H.E.P. in this area of East Africa and some suggested possible alternatives. Such answers often referred to economic issues as well as providing a sound argument for reducing dependence.
- (b) There were many strong answers to this question, showing a good understanding of renewable sources of energy which included good examples with evaluative analysis of their respective merits. The most successful answers also referenced fossil fuels and discussed sustainability. Candidates were able to offer examples from different countries of the use of renewable energy sources including, for example, the Three Gorges Dam.

Management was often only referred to briefly rather than addressing it as part of the question and in general was limited to the differences in economic development between countries.

**Question 4**

- (a) The strongest answers referred to the linear and cross-shaped patterns shown on the map when describing the pattern of noise pollution. Most candidates referred to the trends prompted by the labels on the diagram of satellite towns. The effects of noise were not well understood and often less successful answers did not address this part of the question well. In some answers the effects of noise were listed rather than developed or explained.
- (b) There were some excellent answers to this question which highlighted strategies for managing the reduction of noise. Less successful answers focussed on the airport from the figure and did not reference traffic or industrial examples.

**Question 5**

- (a) This was generally well answered.
- (b) This part proved more challenging and candidates often did not keep to the focus of the question and looked at protecting species and other examples from the Biosphere, rather than the areas of outstanding natural beauty. Strategies such as conservation areas and National Parks were described but again the Biosphere was referenced often to the exclusion of the area of outstanding natural beauty and the aspects more pertinent to the Lithosphere. Some candidates need to develop an understanding of the differences between the Biosphere and the Lithosphere as well as their interconnections.

# ENVIRONMENTAL MANAGEMENT

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Paper 8291/21  
Paper 21

## Key messages

- In **Section A**, when considering source material candidates should use the information and data to support statements made and to make comparisons when appropriate.
- In **Section B**, candidates should use examples from specific locations including the local area, regions or countries as appropriate, to illustrate ideas.
- Candidates should ensure that all elements of questions are covered in their answers and include evaluative statements considering both positive and negative perspectives wherever possible.

## General comments

In **Section A**, most candidates performed equally in **Question 1** and **Question 2**. **Section B** answers were in general detailed and developed, demonstrating an ability to draw upon knowledge from different areas of the syllabus and to make connections between different aspects.

## Comments on specific questions

### **Section A**

#### **Question 1**

- (a) (i) This was well answered with ecosystem defined clearly. A common error was to refer to abiotic organisms or non-living organisms.
- (ii) This was generally not well answered. Answers included a basic description of the recycling of nutrients from the figure but rarely elaborated on the basic description of the model. Often no nutrients and minerals were named and there was little consideration of what the arrows represented. There was some confusion between energy transfer and nutrient recycling. The most successful answers referred to some of the intrinsic processes such as nutrient uptake, growth and the feeding relationship between producer and consumer or to decomposition.
- (iii) This question proved challenging for some candidates. Answers included comments on the relevance of the model but in general application of the model was weak. Weaker responses mainly included a description of the figure, this demonstrated understanding of the interdependence of the components of an ecosystem but this did not emphasise how human activity can disrupt ecosystems. The most successful answers included specific examples of how humans were disrupting ecosystems and examples of knowledge helpful in environmental management.
- (b) (i) The most common problem here was to identify areas for conservation as opposed to suggesting resources, e.g. fish or lumber.
- (ii) This was often very well answered. The figures provided information which was used well to produce some good answers. The management plan was usually described, different zones identified and linked to reduced pressures, demonstrating good knowledge of the role of the conservation areas. The buffer zone was discussed very clearly. In less effective answers there was no reference to the pressures in Fig. 1.2 threatening the wetland, or how they were being addressed in Fig. 1.3. These answers were limited to a description of the conservation plan without exemplification of the benefit in achieving a sustainable use of the resources.

## Question 2

- (a) (i) This was often well answered and responses showed an understanding of eutrophication and the relationship between enhanced nutrient input and the overgrowth of algae.
- (ii) Generally, this part of the question was not well answered. There were common misconceptions regarding the nature of the oxygen depletion, with many answers stating that either nitrogen and phosphorus or the algae removed the oxygen from the water. In better answers it was inferred that the algae blocked the light from reaching the underwater plants, in the best responses this was this linked to the resulting death and decay of the plants.
- (iii) This was often well answered with sources of pollutants and the nature of pollutant specifically identified. A common error was to repeat eutrophication again and discuss how the pollution killed fish or other organisms. Some answers referring generally to pollution were less effective.
- (b) The most effective answers applied the figure to solve the problem of eutrophication. In successful answers each stage of the figure was developed, for example the different types of monitoring that could take place by taking measurements of turbidity, BOD or diversity. They also included examples for science-based advice and integrated management. In other answers there was focus solely on the integrated management aspect either by managing waste or suggesting possible ways of cleaning up the river. Weaker answers sometimes simply reiterated the content of the figure with no further elaboration.

## Section B

### Question 3

- (a) This was very well answered. There were very few problems in recognising the pyramids. Both pyramid shapes were effectively described and explained with valid reasons for the shape. The only aspect that was sometimes not well addressed was using actual data from the pyramid in an answer.
- (b) This part was also well answered. Most candidates provided very clear answers and developed negative aspects of population growth and the effects, for example habitat destruction, the effect on food chains, and impact on biodiversity. The implications of an increase in population were discussed in detail and scientific terminology was used well. In better answers effects were evaluated while in weaker answers these were listed. Few answers incorporated a positive perspective. These included such aspects as sustainable development and scientific technological advances, for example renewable energy, recycling, or changes in agricultural techniques. Aspects which were less frequently covered in responses included the differing effects of the implications on different types of countries, or examples from LEDCs and MEDCs, to consider how different types of countries would deal with the increased populations in different ways.

### Question 4

- (a) In many answers there was good description of the curves in the graph and readings from the graph were incorporated as supporting data. Patterns were explained by linking the graphs of surface run-off to aspects of infiltration rates, soil exposure vegetation cover and the extent of impermeable surfaces after development. Weaker responses typically gave a general overview of the difference in rates of run-off without using any data or explanation of the differences.
- (b) Many responses included a balance between natural and human causes of flooding, and there was good use of technical terms to describe each of the factors. Two methods were often described and a discussion of preventative flooding measures was often the most detailed aspect of answers. Examples included the use of buffer strips, the restoration of wetland areas or reducing impermeable surfaces to alleviate flooding. The evaluative aspect of answers was often less strong. Candidates needed to assess the relative contribution of natural and human factors. Very few answers considered which would have a greater effect and why. Only the strongest answers used examples of river flooding and very few responses included named examples or included details of a case study. Weaker responses were also limited in the causes of flooding, particularly natural causes and often only mentioned rainfall without any more detail. In some answers part (a)

of the question relating to urban development causing flooding was simply extended together with a limited description of measures to alleviate flooding.

#### Question 5

- (a) This was well answered. Trends, including the exponential effect in the later years, were described and in good answers were illustrated with data and the reasons stated developed. These linked the shape of the graph to increasing pressures that species are subjected to through human impact. In less successful answers the general trend was identified but the different rates of extinction over the timescale were not emphasised. These answers lacked reference to data and reasons were listed and generally undeveloped.
- (b) In good answers there was reference to an ecosystem and it was demonstrated how in the chosen ecosystem research and education had been used effectively in conservation. The argument was balanced by incorporating details of other methods of conservation and evaluated in terms of the contribution from research and education to the success of the conservation. Less effective answers often included a reasonable description of research and education in conservation, sometimes with more emphasis on the research side, but were very general with few specific examples of conservation. Description and evaluation of the contribution from other strategies that were important besides education and research to balance an answer were relevant and could have been considered. These included designating land as a national park, ecotourism or the sustainable use of land in conservation areas.

# ENVIRONMENTAL MANAGEMENT

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Paper 8291/22  
Paper 22

## Key messages

- In **Section A**, when considering source material candidates should use the information and data to support statements made and to make comparisons when appropriate.
- Candidates should always show their working out in questions which require calculations as marks can be awarded for the stages in a calculation as well as for the final answer in some cases.
- In **Section B**, candidates should use examples from specific locations including the local area, regions or countries as appropriate, to illustrate ideas.
- Candidates should ensure that all elements of questions are covered in their answers and include evaluative statements considering both positive and negative perspectives wherever possible.

## General comments

In **Section A**, most candidates performed equally in both **Question 1** and **Question 2**. There were some well written responses to the longer questions in **Section B** and these demonstrated an ability to draw upon knowledge from different areas of the syllabus and to make connections between the different aspects.

## Comments on specific questions

### **Section A**

#### **Question 1**

- (a) (i) The descriptions of changes in the water level were mostly correct and included details of increase, decrease, and highest and lowest points and timescale in good responses. In less effective answers, there was no indication of timescale over which these changes occurred.
- (ii) This answer was often calculated within an acceptable range. A common error was to record the water depth for each month and calculate a mean, rather than the range.
- (iii) This was well answered with relevant aspects of the water cycle, particularly precipitation and evaporation, linked to water level changes in the lake. Good responses were supported with appropriate data on changing temperature and precipitation extracted from the figure. Weaker responses did not emphasise how the inputs and outputs of the water cycle related to the water level changes in the lake.
- (iv) This question proved challenging for many candidates and only the strongest answers considered other inputs or outputs to the area.
- (b) In good responses, threats to the freshwater store were considered through careful examination of the figures. Good answers included detail relating to how the threat of human activity could impact on the quality and quantity of water in the freshwater store. The disadvantages of dams and sources and nature of pollutants were incorporated into these answers and specific locations were identified. In weaker answers, threats were simply listed without further explanation.

## Question 2

- (a) In very good responses information on photosynthesis was included and the relationship between the rate of photosynthesis and light intensity was identified, supported with use of data from the figure. In weaker answers there was no reference to data and the graphs were dealt with separately.
- (b) (i) The different ways of representing information about trophic levels in an ecosystem were not clearly defined in weaker answers.
- (ii) In good responses the differences between the pyramids of numbers and biomass were highlighted and effectively explained. In less successful answers, although a description of differences was present, the explanation was less effective with no comparison between the two pyramids.
- (c) (i) This was almost always well answered.
- (ii) This was a well-answered question as a result of effective use of the figure to analyse the management strategies applied in this example. The most successful answers were those which referred to the different types of conservation strategies and commented on extent, number and locations. In these answers the different conservation strategies were differentiated and the nature of the different approaches to reducing human impact were emphasised. Less effective answers considered all the conservation strategies collectively without considering the different levels of human activity, exclusion and protection within the different strategies.

## Section B

### Question 3

- (a) Strong answers made good use of the map in the figure to describe the distribution of areas of insufficient freshwater. In these answers the varying degrees of insufficient water, were differentiated and there was clear analysis of the information across the three categories, together with valid reasons for the differences in distribution. Weaker answers did not differentiate the areas of insufficient freshwater into separate categories and all areas of insufficient water were treated as having the same extent of water shortage. Specific reference to the map was omitted and these answers were generalised. A common error was to describe in detail the areas of sufficient freshwater availability.
- (b) There were some excellent answers to this question. A range of ways of managing the issue exemplified good answers and there was good use of examples where the methods are applied. Most candidates expressed understanding of the difficulties associated with water supply relating to population growth and increasing demand and the pollution of water stores exacerbating the difficulties. A range of ways of managing supply through the process of desalination, the use of groundwater stores, water conservation and preventing pollution were well documented through the appropriate use of case studies and LEDCs and MEDCs were often compared. Effective evaluation of the difficulties also characterised good answers. The weakest answers considered a narrow range of methods and examples.

### Question 4

- (a) This was often well answered. The population graph was interpreted, with trends described in all three categories, using data extracted from the graph and explained. In less effective answers, the less and least economically developed countries were considered together, so that differences in the trends in LEDCs now in differing stages of economic development were neither recognised nor explained.
- (b) In successful answers population models were incorporated effectively into answers with some candidates referring to the Demographic Transition Model or theories of Malthus or Boserup. Good answers balanced positive assessment of sustainable population growth linked to economic and social development with a more negative perspective. Better answers included well-chosen examples to illustrate a range of economic and social policies to compare countries at different levels of economic development to illustrate both the positive and negative perspectives. In weaker answers, there were no references to population models and the argument lacked balanced often focusing solely on unsustainable economic and social development.

**Question 5**

- (a)** This was generally well answered, particularly in **(a)**. There was good interpretation of the figure which was effectively scrutinised to identify potential benefits and problems and these were usually detailed with developed points in good responses.
- (b)** Examples of rivers were chosen in successful answers. Sources of pollution were stated and the specific pollutants which needed to be resolved in the management policy were considered. A variety of pertinent measures specifically linked to the examples and the specific pollution problem and evaluation of the river management policies were evident in very good answers. Weaker answers were sometimes overgeneralised with some management described but without reference to specific rivers or specific pollutants. Other weaker answers did not include examples, or in some cases the evaluation of the effectiveness of management the environmental policies was less effective.

# ENVIRONMENTAL MANAGEMENT

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**Paper 8291/03**  
**School Based Assessment**

## General comments

The trend towards large entries from individual Centres continues. As last year, the number of administrative and assessment issues was small.

- Some Centres are stating their assessments as percentages rather than a mark out of 40.
- A tendency to mark leniently was noticed for some Centres, particularly in assessment criteria: C2 a, b and e; C3 a and b; in some cases 2 marks were awarded when 1 mark was more suitable.
- For a few Centres, credit is being given for criteria not actually present in project reports, e.g. no credit can be given for use of a statistical tool when one has not been used, nor can 2 marks be given for conclusions that do not relate back to the data.

The majority of candidates structured their reports in the logical order of: introduction, methods (justified), results and analysis, conclusion and evaluation. Many used these stages as section or chapter headings. It is important that candidates recognise the difference between a research report and an extended essay.

Candidates should be reminded to check the following:

- Will my hypothesis or question actually yield viable results?
- Are my methods realistic, practical and relevant? Do they include data recording, collation and presentational techniques?
- Are the results and analyses fully representative of the methods referred to the previous section?
- Does my conclusion sum up and relate my results to the original hypothesis or question?
- Have I evaluated my work in terms of both its successful features and its limitations and considered what can be done to improve my work?

## Comments on assessment criteria

### **Skill C1**

Most candidates performed well in this skill area.

Either as the project title or as part of an introduction, hypotheses or questions were stated by most candidates and were frequently, but not always, accompanied by a clear explanation of its underpinning principles. The hypothesis should be clearly written and not implicit to the introduction. This is important as some candidates concluded that their hypothesis was correct, yet there was no evidence to support this anywhere in their project.

Stating and justifying a methodology was in the main adequate. Good quality research requires the formulation of a plan, detailing research sites, equipment, expected data and how it will be collated and presented. Weaker reports had a methodology, which was sometimes a brief list without any explanation or justification. As a consequence it was often difficult to judge whether or not their methodology would be effective in testing their hypothesis or answering their question.

The better projects achieved these goals, whilst weaker reports did not specify the details of their topic and were unclear about how it should be investigated.

## Skill C2

A significant number of high quality research reports did very well in this section. They made excellent use of relevant collected data, which were presented in a variety of ways including graphs, tables, diagrams and photographs; sometimes integrated into an analysis through the use of figure references.

However, many candidates presented graphs and tables poorly. Graphs were sometimes inappropriate for the type of data being represented. Graphs should have axes containing labelled units and both lines and bars should be easily interpreted. Some reports, better described as extended essays, had very little data presented in the form of graphs and/or tables. As a consequence it was difficult to award credit in any criteria that required reference to data. This also negated the use of a statistical tool.

Some reports were heavily reliant upon photographic evidence with a limited amount of quantitative data. It is better that photographic evidence supplements other forms of information.

The use of a statistical tool is still a weakness. There is a difference between statistical methods that are used to describe data and statistical tools that are used to analyse data. The former might include bar charts or line graphs whilst the latter would include correlation, chi squared, t test etc. Some Centres award credit for this when there is no evidence of statistics.

The majority of candidates organised their work well and the quality of written communication was high.

## Skill C3

This important skill frequently formed the weakest part of a candidate's project. The main weakness in C3(a), the conclusion, was a lack of reference to the data presented in the report. C3(b) was relatively weak this series as only a small number of candidates referred to related environmental management principles. This element also needed reference to data within the report.

Some Centres need to stress to their candidates that the evaluation needs to be a brief summary of those things that went well and not so well, i.e. success and limitations. There is still confusion between an evaluation and a conclusion. Some candidates appear to evaluate secondary data, instead of giving an appraisal of their methodology. A small number of project reports did not include an evaluation.

## Concluding comments

It was clear that most candidates engaged enthusiastically with this element of the Environmental Management syllabus. In addition to the topic, there is the opportunity to learn some research techniques and put them into practice. As in previous sessions the better topics and final reports were derived from locally based research and utilised primary data.