ENVIRONMENTAL MANAGEMENT

Paper 0680/03
Coursework

General comments

Appropriate environmental topics were generally investigated this year. It is encouraging to see how concerned students are about their own local environment. Most investigations were carried out thoroughly and demonstrated the students' enthusiasm for coursework.

Comments on specific questions

Domain A

This section demonstrates the excellent teaching of the basic processes in the environmental management syllabus. However there needs to be an emphasis on sustainable development involved in the investigation and so the opening discussion must address this issue in particular.

Domain B

Students implemented a wide range of techniques and displayed some very competent investigative skills, working hard at implementing some excellent presentations of the data.

Domain C

Domain C continues to be the most challenging aspect of coursework. The advice given is to make a management plan which can then be discussed as to a consideration of constraints and advantages. This is still rarely seen and it would benefit students to look ahead when they begin their investigation and consider, in advance, the options which are available to achieve sustainability.

The main focus of Domain C should be a thorough review of possible choices available for sustainable development. All interested parties should be canvassed as to their opinions and a thorough assessment needs to be carried out considering the factors behind their value positions

ENVIRONMENTAL MANAGEMENT

Paper 0680/11
Paper 11

Key Messages

Candidates should endeavour to read questions carefully and to look at the marks allocated to each question. This enables them to correctly judge the detail and depth of the answers required, and to write specific and directly relevant answers. When plotting graphs or using data from graphs, candidates need to ensure that they are clear which data they should be using and take care to quote data accurately.

General Comments

Nearly all candidates attempted all the questions and completed the paper.

Comments on Specific Questions

Question 1

(a)(i) The better answers unequivocally described the main trend in the amount of ozone between 1960 / 1997 and 1997 / 2015. Weaker answers tended to focus on detailed changes. In very few cases, the wrong trend was identified.

(ii) In many cases this question was poorly answered due to a lack of specificity in the candidates' answers. For example, many answers referred generically to increased emissions of greenhouse gases and global warming. Few candidates gained a mark for identifying CFCs as "harmful gases" for the ozone layer.

(iii) Most candidates correctly matched the drawings to the numbers on the graph. The most common mistake was the misjudgement of drawings A and B.

(iv) In many cases, the candidates correctly identified the importance of the ozone layer in the stratosphere but gained only partial credit as answers lacked detail and specificity (e.g. "protections against harmful UV rays).

(b) A number of candidates failed to provide the right answer to this question; many answers focused on the wind moving acid rains between countries and a number of candidates answered the question writing exclusively about the effects of acid rain on ecosystems and buildings.

Question 2

(a)(i) This question was well answered..

(ii) Many candidates worked out the correct answer to this question.

(iii) In many cases, this question was well answered, and candidates gained full marks. In some cases, the answers stated two impacts as requested in the question, but their descriptions lacked necessary detail.

(b) This question was very well answered with many gaining full marks; the majority of the answers described strategies such as government policies (e.g. China's 'One-Child Policy'), family planning and education for women.

Question 3

(a)(i) A question that most candidates answered correctly.

(ii) Most candidates answered this question correctly.

(iii) The majority of the candidates were able to provide the correct answer using the graphs. However, in a minority of cases, candidates did not gain full marks because they did not state whether the graphs supported the scientist's statement.

(b) Some candidates found this question challenging. Weaker answers did not go beyond a description of the map. Better answers incorporated their own knowledge of fishing grounds into their explanations.

(c) Most candidates suggested at least one correct strategy for sustainable management of ocean fisheries.

Question 4

(a) Many candidates provided good answers to this question that covered all of the relevant aspects of coal formation. Weaker answers, were incomplete or contained inaccurate statements.

(b)(i) This graph was accurately drawn by most candidates. There were very few candidates who did not attempt this question.

(ii) Most candidates answered this question correctly.

(iii) Many candidates found this question challenging and did not correctly refer to the data.

(c) Many candidates demonstrated knowledge of measures that could be taken to reduce the consumption of fossil fuels. However, some common errors highlighted a misunderstanding of the concept of fossil fuels, since many candidates made suggestions to recycle / reuse fossil fuels or to use alternative sources of energy in order to allow time for the fossil fuels to "grow" or "accumulate again".

Question 5

(a)   Some candidates failed to provide a complete definition here, referring only to the number or to the different types of species of plants and animals.

(b)(i)   Many candidates correctly interpreted the graph here. Some candidates made an error if they had not read the question carefully enough and answered this question with the total number of species found in Europe in 2010 (i.e. 3750).

(ii)   This comparative question was well answered by many candidates. The most frequent error consisted in answering that the number of producers is greater than the number of consumers.

(iii)   There were some well-structured answers to this question that achieved full marks. Other answers were more variable and sometimes confused (e.g. alien producers eating local producers); some candidates did not read the question carefully enough and wrote about the effect of the introduction of alien consumers rather than producers in an ecosystem.

(iv)   Candidates generally found this question challenging with weaker answers suggesting the use of alien consumers or the killing/poisoning of alien producers rather than offering a strategy to reduce the introduction of alien species.

Question 6

(a)(i)   Most candidates correctly calculate the answer to this question. In a small number of cases, the candidates calculated the average temperature for location R.

(ii)   Most answers successfully manipulated the data to describe the change in rainfall. Unfortunately, a significant number of candidates did not make a similar appropriate use of the temperature data. For example, candidates often limited their use of the data to directly quoting temperatures.

(b)(i)   Virtually all candidates gained full credit for identifying the number of dry months, the high temperatures and the lack of rainfall as problems for crop farming at location R.

(ii)   Again, virtually all candidates were able to answer this question well; a few candidates focused on building a dam to store water to be used during the dry season or referred to the exploitation of aquifers.

(c)   Most candidates were able to quote one advantage and one disadvantage of using land to grow biomass for fuel. Some candidates' explanations lacked specific detail to show the necessary understanding of the advantage or disadvantage quoted. The most common error was limiting descriptions to "using land that could be used for farming" or "to grow crops".

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ENVIRONMENTAL MANAGEMENT

| Paper 0680/12 |
| Paper 12 |

Key Messages

Candidate should ensure that they carefully review their answers.

It is important to take into account the number of lines and the number of marks allocated for each part of each question when formulating an answer. For each mark available, one point should be clearly made.

General Comments

Candidates should avoid repeating the same point a number of times in order to fill the space provided. For each mark available, one point should be clearly made.
Data quotes can be used to clearly illustrate an answer but the quotes should not be lifted straight from the question if at all possible. Simple manipulation of data shows a much better understanding.

Comments on Specific Questions

Question 1

(a) (i) This question was quite well answered. The commonest mistakes were to think that the centre of pressure was of high pressure and that snow went along with heavy rain.

(ii) The majority of candidates were able to plot the bar correctly.

(iii) The strongest candidates were able to indicate reasons to do with both the nature of the cyclone and improvements in the country's response to it, or preparation for it in more recent years.

(b) (i) A minority of candidates appreciated that a drought is a prolonged period of unexpected dry weather. Definitions lacked detail in many answers.

(ii) There were good attempts to explain how the effects of a drought might be reduced.

Question 2

(a) (i) This question was very well answered. The most common mistakes were arrows going in the wrong direction and drawings of food webs rather than chains.

(ii) Feeding relationships were well understood and candidates could use the food web appropriately.

(b) (i) There were some very good descriptions of the decreasing area but some candidates thought that the area of wetland had increased during the stated period.

(ii) Candidates found this a challenging question and they did not know the reasons for wetland drainage.

Question 3

(a) (i) Most answers correctly chose carbon dioxide but did not include water vapour as a greenhouse gas.

(ii) The majority of candidates knew that carbon dioxide is used by plants in photosynthesis.

(iii) This question was reasonably well answered which is to be expected considering the high profile of this topic. Many candidates described the rise in sea level, which is not a direct climate change.

(b)(i) There were some good attempts at this question and those who quoted data to support their conclusion usually achieved full credit.

(ii) This question was well answered but some candidates suggested strategies that had no connection to transport.

Question 4

(a)(i) This question was very well answered with most being able to pick out two relevant areas.

(ii) Most candidates were able to describe how malaria spreads but candidates should remember to make three clear points for a three-mark question.

(iii) This question was generally well answered and candidates knew appropriate examples.

(b) There were some good answers from many candidates. Candidates should remember that descriptions need to be clear and detailed if full credit is to be achieved.

Question 5

(a) This question was very well answered, indicating that the rock cycle is well known by most.

(b)(i) Most candidates were able to extract the relevant information from the diagram, making this a well answered question.

(ii) There were some detailed accounts of the processes used to restore the land after mining.

Question 6

(a) In this question on succession some scaffolding was given in the form of key words. This allowed candidates to structure their answers clearly.

(b)(i) Reasons for deforestation are well known and this question was well answered.

(ii) Candidates should make sure that they are familiar with the strategies for the control and reduction of both soil erosion and deforestation as detailed in the syllabus.

ENVIRONMENTAL MANAGEMENT

Paper 0680/13
Paper 13

Key Messages

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Data quotes can be used to clearly illustrate an answer but the quotes should not be lifted straight from the question if at all possible. Simple manipulation of data shows a much better understanding.

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ENVIRONMENTAL MANAGEMENT

Paper 0680/21
Paper 21

Key messages

Generally the candidates had a good understanding of most topics on this paper.

Candidates need to read all questions carefully to prevent missing key information.

Some candidates demonstrated a lack of depth in their knowledge as they did not provide complete explanations of concepts.

General comments

It is pleasing to see that in the most part, candidates are answering questions fully rather than merely bullet pointing key ideas or concepts. This allows credit to be given for explanations where this is relevant.

Comments on specific questions

Question 1

(a) (i) Candidates were required to describe the location of the tundra biome. This was attempted by most of the cohort with varying success. Candidates who performed well were able to identify the location in relation to continents as well as the link to the Arctic Circle. This skill of writing such complete descriptions should be encouraged.

(ii) While the majority of candidates identified that temperature changes would have an impact, not all candidates described the area as reducing, some incorrectly suggested that the area would disappear whereas others focussed on flooding.

(iii) Many candidates correctly named at least one gas. The most common error was citing nitrogen, rather than one its oxides, as a gas that contributes to global warming. Nitrogen is naturally occurring in the atmosphere and is not thought to contribute to global warming. Some of the sources of the gases stated would have benefitted from some expansion from the short statements that were provided.

(b) (i) The majority of candidates successfully completed the plotting of the additional points. Here, the most common error was linked to the incorrect use of scale by some candidates. Almost all joined the plotted points to the existing line.

(ii) These questions focused on data and were well attempted by most of the cohort. Many candidates correctly identified the number of months below freezing and the month with the highest precipitation. Candidates found the final question on range the most challenging.

(iii) Generally, this question was not well answered. Many candidates described plants that are not present within the tundra. Some candidates did identify features correctly but many of these candidates did not describe the reason for these features particularly well.

(c) (i) Although defined in a variety of ways, most candidates were able to correctly describe the term 'consumer'.

(ii) Many candidates appeared to misread this question and either related their answer to the arctic fox (which was already present in the tundra) or to the impact of the red fox leaving its natural range. While both were often explained well, they did not address the question that was asked. Those candidates that did respond to the question appropriately, typically correctly described different effects on the tundra ecosystem.

(d) (i) Generally candidates demonstrated a good understanding of how oil was formed. The most common error seen was to explain this in relation to the tundra rather than the sea bed.

(ii) Most candidates did this accurately.

(iii) Most candidates were able to provide a good reason for the development of the pipeline, linked either to safety or the reduction in transportation time / distance.

(e) (i) Many candidates were able to apply their knowledge and the information in the diagram to form good conclusions. Better responses gave clear and complete descriptions of their suggestions, whereas the suggestions made in some weaker answers were too brief.

(ii) Candidates gave some good reasons for positioning the pipeline above the ground, but many focussed on only one reason.

(f) Better performing candidates gave a balanced argument covering both sides of the issue. Most were able to describe the limitations and advantages of fossil fuels.

Question 2

(a) (i) Most candidates plotted the data on the graph accurately.

(ii) This question required the candidates to read data from the graph. The most common error was to not interpret the information on the axis, thus omitting to multiply their answer by a million.

(iii) Some responses to this question were muddled in their reasoning and commented merely on more recent factors rather than the reasons for changes since 1800. Other common errors included relating the answer to a particular country rather than the world population.

(b) (i) This question provided a wide range of potential answers using the source picture as stimulus. The better answers identified the needs of larger populations to be fed and housed; the need for resources for industry and the demands for improved communication links, all of which will impact the forest.

(ii) A calculation based question that was answered successfully by most of those who attempted it.

(iii) The majority of candidates spoke about the reduction in rate of loss and carefully referenced data to perform well in this question.

(iv) Most responses correctly identified the great awareness of land clearance or the increase in legislation as being a potential reason for the change seen.

(c) (i) While this is a topic that was clearly familiar to most candidates, some suggestions lacked sufficient explanation. Better performing candidates gave clear and complete explanations.

(ii) Candidates often wrote at length; their responses did not always show a depth of understanding of the topic.

(d) Some candidates identified one strong example but additional examples often linked back directly to deforestation.

(e) (i)   The most common errors were to not label one or both axes, or to not apply an appropriate scale to the graphs. Many candidates only used a small proportion of the available space.

(ii)   Most candidates identified the correct country: Kenya.

(iii)   The reasons for the differing numbers of national parks were well articulated.

(iv)   Naming another strategy proved challenging for some. A wide range of potential answers were seen.

(f)   This question was tackled with differing degrees of success. Most candidates wrote about the need for reforestation / planting. The stronger responses also included a broader range of strategies and explained their impact well.

ENVIRONMENTAL MANAGEMENT

Paper 0680/22
Paper 22

Key messages

Candidates need to correctly apply the command word to a question, i.e. "describe".

It is important that the definitions of technical terms are well understood.

General comments

Most candidates attempted the majority of questions, demonstrating the range of their knowledge. Some found **Question 1** challenging.

The majority of candidates completed their responses fully and there has been a move away from single word and bullet pointed answers.

Comments on specific questions

Question 1

(a) (i) This was attempted by most candidates. Good responses were clear and precise.

(ii) The process was understood by most candidates.

(iii) Using data from the table, most responses correctly identified the countries that met the descriptors.

(iv) There was some accurate plotting of bars and ranking.

(v) Some candidates understood that population increase could occur due to migration.

(b) (i) This was attempted successfully in most cases.

(ii) Most responses showed an understanding of an appropriate change in shape to the pyramid.

(iii) Some candidates did not follow the instructions in the question to give a description of the differences in the shape of the population pyramids. Some gave reasons for the difference.

(iv) A range of responses of differing quality were seen.

(v) Most candidates were able to suggest some strategies.

(vi) Some responses showed a clear understanding of the problems a country might face with an aging population and a wide range of answers were seen. Some candidates gave answers that were too absolute, i.e. "there will be no young people" rather than "there will be fewer young people".

(c) (i) Interpretation of the graph was successfully achieved by most candidates, who were able to identify the trend in stage three.

(ii) Fewer candidates were able to identify that stage three was also the stage where the population grew most rapidly.

(iii) Not many responses fully tackled the reasons why death rates might fall.

(iv) Candidates need to ensure that they understand the limitations of the demographic transition model.

(d) This was tackled with a range of success, with relatively few responses focussing adequately on the impact of population growth on soil erosion and desertification.

Question 2

(a) (i) The pie graph was completed by most candidates; some did not shade the segments according to the key.

(ii) Most candidates were able to identify gases that would be correctly included in the "other" category.

(iii) This was a well understood topic and most successfully identified a gas and its source.

(iv) Some responses were too generalised. There was also a misconception that acid rain would burn the skin.

(b) (i) Some candidates were able to label the layer correctly.

(ii) Most candidates were able to determine the appropriate figure from the diagram.

(iii) Most candidates were able to determine the range of pressure in the troposphere.

(iv) This proved relatively straightforward for most candidates; the most common error was to relate to pressure rather than temperature. Candidates must read the instructions carefully.

(v) A number of candidates were unable to describe two additional characteristics of the troposphere.

(c) (i) The knowledge of different weather measuring devices was well known.

(ii) Candidates were asked to describe how the device shown measured and recorded wind speed. While most understood that the wind rotated the cups, a lack of clear description beyond this became a limitation to some candidates.

(iii) The advantages of using wind power as a replacement for fossils fuels was widely known and understood. The reasons for the converse argument were less well explained in some cases.

(d) (i) The completion of the divided bar graph proved challenging for some candidates. These candidates chose to overlay each category rather than using the space provided. Similarly, some candidates did not shade the bars according to the key.

(ii) The majority of answers correctly calculated the percentage of electricity generated by the two fossil fuel types.

(iii) Most candidates were able to name an additional fossil fuel.

(iv) This was well answered by those who attempted it.

(e)   This longer response question was attempted with varying levels of success. Better performing candidates gave a more balanced view. There were also a few misconceptions, in particular in the nature of nuclear power; some stated there was no waste and that it was a renewable resource. While the fuel source will last a long time, it still only has a finite life. Overall, there was an understanding of the issues.

SYLLABUS NAME

| Paper 0680/41 |
| Paper 41 |

Key Messages

- Read the source material and the question carefully.
- Use data from either graphs or tables to help describe trends or patterns.
- Avoid statements such as 'plant growth will be affected' without any further detail. Candidates should always suggest how the growth might be affected and use their own knowledge to support their suggestion.
- Both axes of any graph should be labelled with units.

General comments

This paper invited candidates to consider environmental issues and methods of gathering and interpreting data in the context of one country, India. Many candidates understood and made good use of the source material and their written responses were clearly expressed. The mathematical and graphical questions did pose some difficulties for a minority of candidates.

Comments on specific questions

Question 1

(a) (i)   Most candidates were able to complete the table correctly.

(ii)   Most candidates carried out an appropriate calculation and gave the answer to one decimal place like the source data in the table.

(b) (i)   Most candidates were able to identify the three wettest months as the time when mining would not be possible.

(ii)   Many candidates made a sensible suggestion as to the impact on miners of not being able to work for three months.

(iii)   Although many candidates wrote at length their answers often lacked the specific details that would lead to an increase in disease.

(iv)   Some candidates wrote about dust and noise pollution without giving specific examples as to how the environment would be affected.

(c) (i)   Many candidates suggested that the miners should be given food and medical insurance. Only a small number of candidates considered the safety equipment the miners would need.

(ii)   Most candidates gave at least one good reason why the miners were not paid compensation by their employers.

(d)   Methods of land restoration after mining were generally well known and many candidates gained three or four marks for careful descriptions of land restoration.

(e)   Only a minority of candidates correctly identified the newest and oldest waste pile from the descriptions given in the question. The oldest waste pile would have the largest colony of plants.

(f) (i) Most candidates plotted the graph correctly but a significant number of candidates failed to label both axes and include the units.

(ii) Most candidates correctly identified the trend shown by the graph.

(iii) Very few candidates managed to gain maximum marks for their explanations of the findings of the survey. This was usually caused by not clearly using information from the table to help support their own knowledge.

(iv) Very few candidates approached this question from the point of view of sampling methods. Candidates were not expected to know about this type of mining.

(v) Many candidates gave an outline of an experiment but did not describe a reliable method that could have been performed in a laboratory. Some descriptions did include plants being dust free while others were treated with dust but most other experimental details were not given.

(g)(i) Most candidates completed the calculation correctly and showed their working clearly.

(ii) Stronger candidates gave clear advantages for both the block-makers and the mine owners. Some candidates did not clearly distinguish between the block makers and the mine owners.

Question 2

(a) (i) Nearly all the candidates completed a key and then indicated an area for crops and an area for livestock. A minority of candidates incorrectly located crops in the high mountains.

(ii) Most candidates gave at least one good reason for their choice of location of crops and livestock.

(iii) Candidates that appreciated that wells gave access to water from underground usually gained both marks. A significant number of candidates incorrectly suggested the wells were filled directly from the dam.

(b) Many candidates gave at least one reason why a government would be reluctant to declare a drought. However, only a small number of candidates developed their ideas sufficiently to gain the maximum three marks.

(c) (i) Many candidates could not describe a random sampling method.

(ii) Most candidates gave good questions that could have been included in a questionnaire.

(iii) Most candidates completed the table correctly and gave the answer to one decimal place.

(iv) This question was quite demanding for candidates. There were many descriptions of animals being drought resistant but the fact that some animals can extract more water from food was missed.

ENVIRONMENTAL MANAGEMENT

Paper 0680/42
Paper 42

Key Messages

- Read the source material and the question carefully.
- Use data from either graphs or tables to help describe trends or patterns.
- Avoid statements such as 'plant growth will be affected' without any further detail. Candidates should always suggest how the growth might be affected and use their own knowledge to support their suggestion.
- Both axes of any graph should be labelled with units.

General comments

This paper invited candidates to consider environmental issues and methods of gathering and interpreting data in the context of one country, Kenya. Many candidates understood and made good use of the source material and their written responses were clearly expressed. The mathematical and graphical questions did pose some difficulties for a minority of candidates.

Comments on specific questions

Question 1

(a) Most candidates were able to define the term biodiversity.

(b) Some candidates looked at the location map of Kenya instead of the map of the Lake Victoria basin as instructed in the stem of the question. This meant that their answers to **(i)** and **(ii)** were incorrect.

(c) (i) Very few candidates were able to make an appropriate explanation for why the scientist took water samples at 18:00. Stronger candidates realised that this was a form of control in the experiment.

(ii) Most candidates correctly completed the table and gave their answer to one decimal place like the source data.

(iii) Many candidates found this question straightforward and wrote clearly about the differences in the water samples. Some candidates did not answer the question as they described the results at each site rather than the differences between the water samples.

(iv) Some candidates wrote about pollution in general terms instead of suggesting two sources of the chemical pollution caused by vehicle washing. Although a large number of candidates gave the detergent or soap used to wash the vehicles as an answer only a small number of candidates mentioned oil or petrol.

(v) Some candidates sketched graphs or pictograms instead of tally charts. Others constructed data tables but did not complete the chart with tally marks. Headings were frequently missing.

(d) (i) There were some excellent explanations of how eutrophication could occur in Lake Victoria with many candidates describing eutrophication in a logical, sequential manner.

(ii) Protein was the most common advantage suggested for eating fish.

(iii) Most candidates thought eating fish at the lakeside restaurants was unhealthy but their reasons were often too vague. There were references to pollution or eutrophication, but these needed to be substantiated with the name of a pollutant such as sewage or phosphate.

(e) (i) Very few candidates explained that plan two was better than plan one because having five sites instead of three was more representative. More candidates referred to counting snails being better than looking for them, with a number referring to the importance of having a fixed time for the counting.

(ii) Some candidates described the plans instead of stating that the scientist needed to find sites where vehicles were not being washed as a control, or a way of comparing the number of snails at sites, with and without vehicle washing.

(iii) Most candidates correctly calculated the average and completed the table of results for plan three.

(iv) Very few candidates suggested another method that could be used to find the numbers of snails, such as using a quadrat. Most answers were a variation of the method used in plan three such as finding even more sites and counting the snails.

(v) A large number of candidates knew that bilharzia was a disease carried by snails.

(vi) The explanations of how bilharzia moves from an infected human to a snail were more accurate than the explanations of how it moves from a snail to an uninfected human. Many candidates incorrectly wrote about the snail entering feet.

(vii) There were some thoughtful answers explaining how fewer snails meant fewer eggs for young fish to feed on.

(f) (i) A number of candidates completed the sites in the reverse order, most cloudy to least cloudy. Some wrote the results in the table instead of the sites A to D.

(ii) Many answers only suggested that fertilisers and pesticides increased sediments. The more detailed answers referred to overcultivation, overgrazing, wind erosion and surface run-off.

Question 2

(a) (i) A number of candidates thought the researcher chose the four villages because they were on a transect line. The successful explanations referred to the wetland, the savanna and the lake.

(ii) Most candidates correctly referred to random or systematic sampling.

(iii) Very few candidates explained that the researcher interviewed males and females in the villages to avoid bias. There were many answers referring to males working outside and females working in the house.

(iv) Many candidates seemed to link the structured questionnaire to the villagers not being able to read. There were some thoughtful answers about ensuring all the villagers had the same questions to answer and that there would be reliable data that could be analysed.

(b) (i) Most candidates gained full marks for drawing the bar graph and completing the key. A small minority constructed line graphs. The most common error was not labelling the *y*-axis.

(ii) Although some candidates gained full marks for explaining how the savanna and wetland households had similar amounts of assets and gave examples, others wrote in vague terms about the standard of living.

(iii) The strongest answers wrote about the effect of extreme weather on crops and how a low supply and a high demand increases prices.

(iv) There were many good questions formulated about crop-growing in the savanna area.

(c)   Strong responses described ways that the government could encourage a sustainable way of the life in the Nyando District written using the background information provided throughout the paper. These ways included sustainable approaches to farming, energy production, ecotourism and fishing in Lake Victoria and regulations to control pollution. Weaker answers did not relate to the government or to a rural area in Africa.

ENVIRONMENTAL MANAGEMENT

Paper 0680/43
Paper 43

Key Messages

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Comments on specific questions

Question 1

(a)   Many candidates found it difficult to identify more than one specific way in which tourism could contribute to the economy of the country.

(b)(i) and (ii)
Some candidates did not study the map of the Lake Victoria basin carefully, as instructed in the stem of the question. This meant that their answers to (i) and (ii) were incorrect.

(c) (i)   The majority of candidates suggested that overfishing would lead to less fish being caught but few candidates made any comment on the size of the fish being caught.

(ii)   Many candidates made little use of the information given in the question. The link between the decrease in numbers of cichlids and the introduction of a carnivorous fish was frequently missed. The low numbers remaining as breeding stock was only commented on by a very small number of candidates.

(iii)   Most candidates found this calculation demanding. Most candidates showed some working and could be credited appropriately. Only a very small proportion of candidates gave the correct percentage increase.

(c) (iv)   Most candidates gave convincing answers about the benefits of a fish processing factory. The possible benefit to the government was often too vague and could not be credited.

(d)(i)   Many candidates understood that the fishing effort was now directed to the larger Nile perch. The smaller fish were not being caught in the same numbers as the mesh size was larger, this allows the population of cichlids to recover. Candidates need to clearly show that they understand the difference between smaller fishing nets and the smaller mesh size of a fishing net.

(ii)   Most graphs were plotted correctly using a suitable scale. However, the y-axis label was sometimes missing or incomplete.

(iii)   The pattern shown by the graph was well described by most candidates.

(e) (i)   Candidates that read the source material carefully gave an appropriate answer to explain why larger fish are no longer being caught.

(ii)   Candidates often lacked detail in regard to the mesh size, size of the fishing net or shape of the mesh and therefore couldn't be awarded credit.

(f) (i)   The table was completed correctly by the majority of candidates.

(ii)   Most candidates clearly stated the three class sizes of fish that were not bought by the fish processing factory.

(iii)   Most candidates suggested one use of the fish not bought by the factory. Stronger responses gave a second suggestion.

(g) (i)   A large number of candidates did not use the information to label the axes on the dotted lines provided. If the axes were not labelled then usually the data was not potted or the lines extended. The candidates that had read the question carefully completed all these tasks successfully.

(ii)   The majority of candidates followed the instructions and drew a horizontal line in the correct position on the graph.

(iii)   Although many candidates drew the line in the correct position in (ii) they then made an error in reading the scale and stated an incorrect value for the age of sexual maturity.

(h) (i)   Many candidates described suitable laws to control fishing but their suggestions as to how to enforce the laws were often missing or too vague.

(ii)   Most candidates realised that the lake was being fished by more than one country so it was going to be difficult to agree the fishing rights or zones or quotas.

Question 2

(a) (i)   Most candidates completed the table correctly.

(ii)   Very few candidates could correctly calculate the harvest of firewood in kg/m^2. Candidates should be encouraged to clearly show their working as they may gain credit for methodology even if the final answer is incorrect.

(b) (i)   Most candidates inspected the table of climate data carefully and gave the correct four months when seeds were unlikely to grow.

(ii)   Candidates were asked to suggest the advantages of using goats to control the growth of seeds. Candidates should take note that the question was worth three marks so three points must be made in order to gain full credit.

(c) (i)   Many candidates find the concept of random sampling challenging but they should be able to apply the principles to novel contexts such as this household survey.

(ii)   Many candidates did not identify further information that would be required to write a balanced conclusion. A small number of candidates correctly suggested the number of meals or the number of people eating the meals.

(iii)   Answers often lacked detail and referred to releasing less gas without mentioning carbon dioxide. A description of sustainability was seen is strong responses.

(iv)   Most candidates stated that the new stoves would cost less to run but this was often not developed to explain that the extra money could be used for other purposes, such as medical care.

(v)   Strong responses clearly compared firewood to fossil fuels in terms of sustainability and cost.