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Examiners' Report

June 2011

GCE Geography 6GE04 01

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Introduction

The fourth examination for Unit 4 showed both some positive developments and also some continuing weaknesses that need to be addressed by centres. The four central messages to concentrate on in order to improve are:

- **Focus - on the title set in the exam**
- **Criteria - set to select and justify case studies**
- **Evidence - to support generalised points**
- **Style - report not essay**

The pre-release focus and actual exam paper clearly identifies the need for a report style product and this was seen in the vast majority of responses. There were still varying levels of success at a methodology and ongoing referencing. The importance of identifying and following the command words in the actual title set in the exam should be stressed to candidates. It didn't matter how well selected the case study information was, or how appropriate the conceptual models were, accessing high marks in Analysis, Application and Understanding, and Conclusions and Evaluation was not possible, if the actual command words given in the exam were not accurately addressed:

1. Assess the relative importance

2. To what extent

3. Assess the extent

4. Assess the extent to which

5. Assess the extent

6. Discuss the criteria

It was pleasing to see a greater spread of choices in the options studied by students, with the biggest increase in option 4 on Cultural Diversity.

Scanned scripts by option:

1. 2985

2. 567

3. 850

4. 448

5. 422

6. 305

Un-named choices

99

There was some evidence that centres are using AS topics to support Unit 4: such as Unit 1 globalisation and Unit 2 rebranding for Q4, Crowded Coasts fieldwork for Q6. Unit 3 concepts from Biodiversity under Threat also showcased in Q6 with the 'Red List'.

General points

- It was pleasing to see a lot of **recent/topical case study material** being showcased, in especially Options 1, 3, 4 and 5.

- Most candidates had a **plan** to work from, although no credit is given to this in the generic mark scheme now that the examination is 'bedded in'.

- Most also had some sort of **methodology** – usually found between D and R sections. Unfortunately for those who failed to produce any sort of methodology, it meant despite a range of accurate case studies and concepts they could not access the top level of Research and Methodology. Some wrote too generally, and a sizeable number wrote more than 2 pages which is far too long in the time scale available.

- Tables may help sort out ideas, but often involve a lot of repetition and so often a short piece of prose is better, using key vocabulary such as: reliability, topical, bias, cross referenced, peer reviewed....There is no one way to create a methodology, candidates must try what they feel is best practice personally, to keep the flow and speed of their own writing-style going.

- **Report style** is well embedded now, although there were still too many essays, restricting access to top levels in Quality of Written Communication. Sourcing/ Referencing was common and varied from very professional footnotes to the use of brackets after statements or quotes. A significant number provided an extended methodology with reference to sources but then failed to link this in their main body of work.

- **Diagrams** were seen in all options, often well labelled and with scales or customised to a particular case study.

- The majority included **ongoing evaluation** - sometimes under very obvious sub headings.

- **Timing** proved an issue for only a minority, usually because of too long spent on the plan, introduction and methodology

However:

- Full marks for the **Introduction** were rarely gained because of a lack of one or more of these three aspects: a focus on the title, supporting accurate definitions; and then a short justification of the framework chosen. Writing down the key foci of, for example, food insecurity, magnitude, health risk, criteria etc, seemed to correlate with students who then actually went on to write about them, suggesting this helps in focusing and sharpening their answers.

- **Methodologies** are more often than not, either over done with far too much detail and sources discussed, or underdone with some general statements about source selection. The best candidates name three or four specific sources as examples, and make a positive comment on why they are reliable and how they are used in the report, usually writing this in less than one side of paper.

- Various **models** were provided, for example, Park's, Degg's, carrying capacity, Kuznet curve, but these were not always fully/correctly labelled or applied in the report.

- **Supporting evidence** is essential for all options, including Q4. Some candidates provide few facts or figures.

- Many, especially in Q1 drew a lot of irrelevant and time consuming **diagrams** of plate margins, or in Q2, drew detailed cross sections of different types of permafrost without

linking this to landscape/landform.

- Centres putting the time and effort into **fieldwork** need to stress how this can be applied to a report, since primary data can be credited.

- Candidates would benefit from even more practice on creating **conclusions.** They need to recap and group their case studies or main report sections for their conclusions to be highly credible. Many candidates continue to make general, broad or even vague statements such as "physical factors are most significant" without any attempt to justify or relate back to the main body of the report.

- **QWC**: Spelling errors are still a feature of many candidates reports - especially geographical terminology - there is really no excuse at A2 for " volcanoe" or "pingu"!

Question 1

Assess the relative importance of physical and human factors in determining the severity of tectonic hazard impacts.

Pre release focus: Research contrasting locations to draw out the scale of impacts from tectonic hazards and disasters.

Strengths seen in answers

Framework:

- Many chose to select a range of case studies to assess different physical factors and another set to assess human ones, and the relative importance within each set. This often led to a narrative style, loss of question focus, and a lacking in balance or any real evaluation

- Best understood were 'magnitude' and 'level of development', but there was some confusion over the implications of 'population density'.

- Those assessing the physical versus human factors within each case study tended to write the more successful reports

- Many used the risk equation or plate boundaries as their report framework successfully, but only better candidates considered intraplate activity.

- Better candidates identified primary, secondary and even tertiary hazards, such as Cholera in Haiti interrupting the pace of recovery according to Park's model.

Case studies:

- Well learnt case studies featured and many referred to recent events eg. Iceland, Haiti, New Zealand, Spain and Japan. This worked really well when linked to different plate boundaries.

- This does suggest that candidates are keeping up to date with world events and accessing a range of data sources; newspapers and TV news/documentaries featured strongly in the sources.

- Many tried contrasting case studies: The Boxing Day 2004 Tsunami was often well compared to the recent Japanese 2011 disaster by looking at the factors of similar magnitude but showing a development perspective.

- Many did recognise that human factors can mitigate physical factors, but few were then able to point out that there are limitations to this and that even the most sophisticated and prepared country can be overwhelmed by an event if the magnitude is sufficiently high e.g. Japan 2011.

- Most reports used diagrams well, although some candidates focused too much on a description of plate boundaries and drawing cross-sections of them which prevented them from focusing fully on the actual question. Maps of different parts of the world didn't tend to be useful in this question.

- Only the top candidates really tackled the complexity of the question. They were able to say that no single factor can be isolated and it is a synchronistic range of factors which influence the severity of disasters, making it almost impossible to say whether physical or human factors are more significant. Moreover it is heavily dependent on the circumstances of the individual disaster.

Weaknesses seen in answers

- The main weakness was a lack of assessment of the relative importance of factors involved. Few students set criteria to assess severity of impact, apart from vague mentions of death and property damage. Richter and VEI scales were quite popular, but rarely was the SIEBERG – AMBRASEY INTENSITY scale or Mercalli Index used.

- Too often Model were described but not developed for structure or analysis. Park's Model and Degg's model and the risk equation were too often introduced only to be abandoned undeveloped.

- An unnecessary overview of tectonic theory, even Wegener's theories, rather than clear definitions.

- Many concentrated on just earthquakes, hence limiting the marks for range in research and methodology.

- It was a shame that few used fieldwork research effectively, as it was apparent many students had visited Iceland, but the information given could have been obtained from secondary sources in terms of what was presented.

- Case studies of Nevado Del Ruiz/Mt Pinatubo/Northridge /Mt St Helens/ Kobe are still popular, but used with little accuracy or in an over simplistic /descriptive way. Some chose less relevant case studies for comparison, for example, the recent Spanish earthquake was described as unpredicted so produced very severe impacts (yet in reality there were relatively low impacts) compared to Pinatubo's eruption which was judged to be less severe because it was predicted (yet in reality there were relatively low impacts).

- Some candidates misunderstood the title and just spoke about the human and physical impacts relating from the tectonic hazards.

This introduction was a solid attempt to get full marks.

> Introduction
> →Both physical and human factors are important in determining the severity of tectonic hazard Impacts. To A tectonic hazard can be defined as any tectonic activity (involving processes above and in the earths crust) that poses a threat to the environment or human population (Natural Hazards and responses, Victoria Bishop). A hazard, can once impacted on the landscape and/or population is then classified as a disaster. A disaster can be defined as a vulnerable population

affected by a geophysical event (dregg 1992) and can also be shown as a diagram (figure 1).
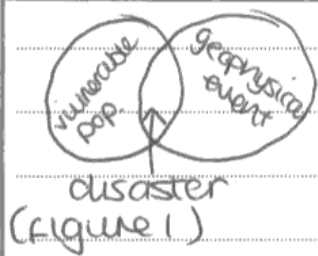
disaster
(Figure 1)

The importance of the human and physical factors can also be displayed using the disaster risk equation. (AS edexcel geography) This shows how the risk from a hazard can be influenced by physical (hazard) and human (vulneabulity and capacity to cope) factors (figure 2). This report will identify different factors of both the physical and human, and show their role in the severity of a hazard. They will be accompanied by case studies of volcanoes (Mt St Helens, kilauea,

$$R = \frac{Hazard \times Vulnerability}{Capacity\ to\ cope}$$
(figure 2)

+ Mt Pinatubo
Eyjacjallajokull) and earthquakes (Japan, Haiti, indian ocean).
        + spain.

This candidate used models throughout the report, which helps access marks in research and Application.

1.1 Plan: D = + hazard.
    ↳ Causes.
        ↳ Crunch Model (Describe) } Human causes
Different impacts ↳ Parks model.
    ↓
    K-study.
    ↓
Hazard profile: - K-studies.

2.1 = Volcanoes - preparing. Nevado Del Ruiz, Mnt Pinatubo
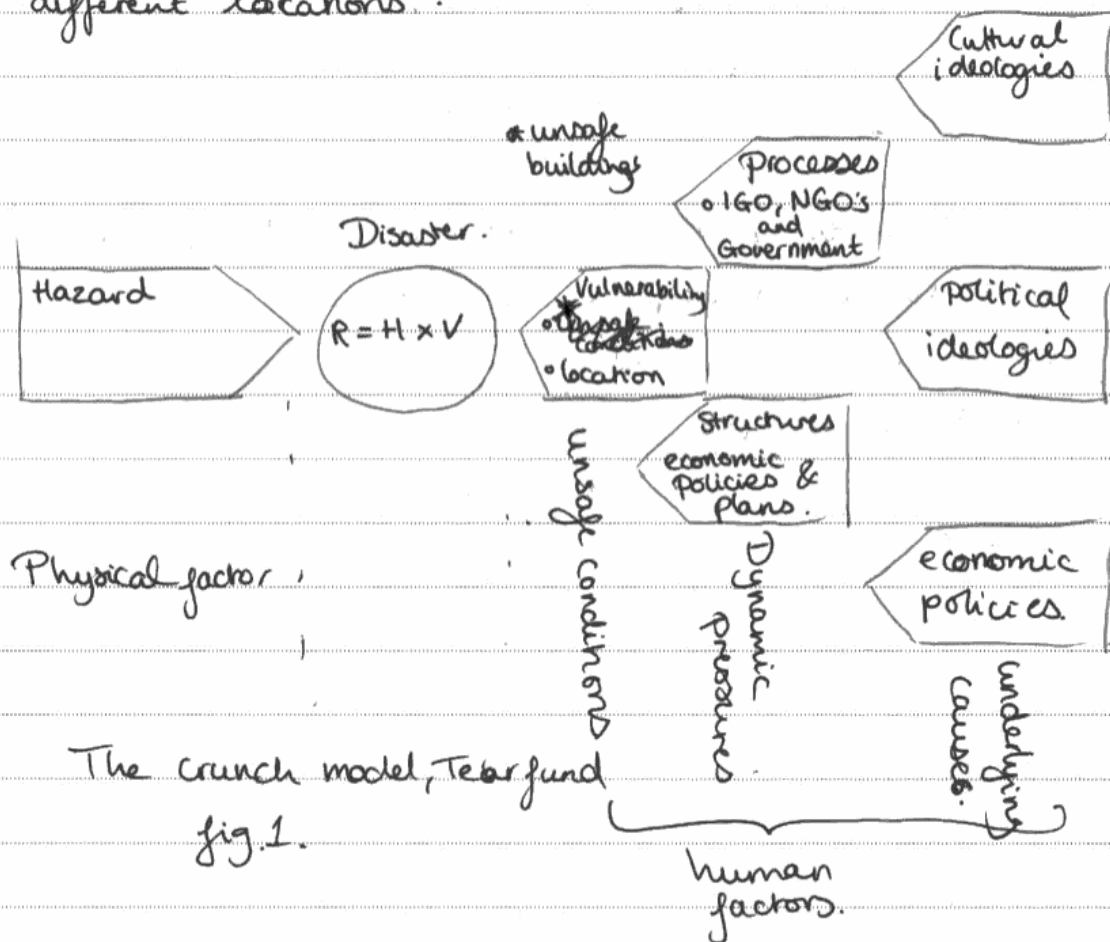2.2 = Tsunamis - Response. B.D & Tohoku
2.3 = Earthquakes, Haiti vs Kobe.
3.1 = Hazard profiles - Lincolnshire vs Sichuan
            ↳ M Kilauea   vs § St Helens.
4. Conclusion.

i) Assess the relative importance of physical & humans factors in determining the severity of tectonic hazard impacts.

A hazard is an event or process, that has the potential to, or cause damage to people & their settlement, (Ross, 1998). Tectonic hazards are events caused by ~~(anthropog)~~ the movement of plates on top of the ~~an~~ mantle, forming earthquakes, volcanoes and tsunamis. There ~~are~~ Both, human and physical factors, both cause ~~a~~ varied impacts to different locations.

The crunch model, Tearfund
fig.1.

*unsafe buildings

Disaster.

Hazard

$R = H \times V$

Vulnerability
o ~~unsafe conditions~~
o location

Processes
o IGO, NGO's and Government

Cultural ideologies

political ideologies

Structures economic policies & plans.

economic policies.

unsafe conditions ⟶

Dynamic pressures

underlying causes.

human factors.

The crunch model (fig 1) shows how hazards and vulnerability (those who are at risk) combined affect the scale of risk and the impacts. The vulnerability can be is altered by the dynamic pressures and underlying causes. There are two types of impacts

- Social impacts: Those who are killed or injured by a disaster.

- economic impacts: Th. The economic loss ~~of the~~ caused by the disaster, whether it be direct or indirect.

There are 4 approaches that could significantly reduce the impact: modifying the cause, event, loss and vulnerability (Fig 1). Modifying tectonic hazards, or the cause is out of human reach, as well as modifying the event (With exceptions to tsunami sea walls and channeling Lahars), therefore, it is important to modify the loss and vulnerability, the human factors. These can vary, depending on the response taken.
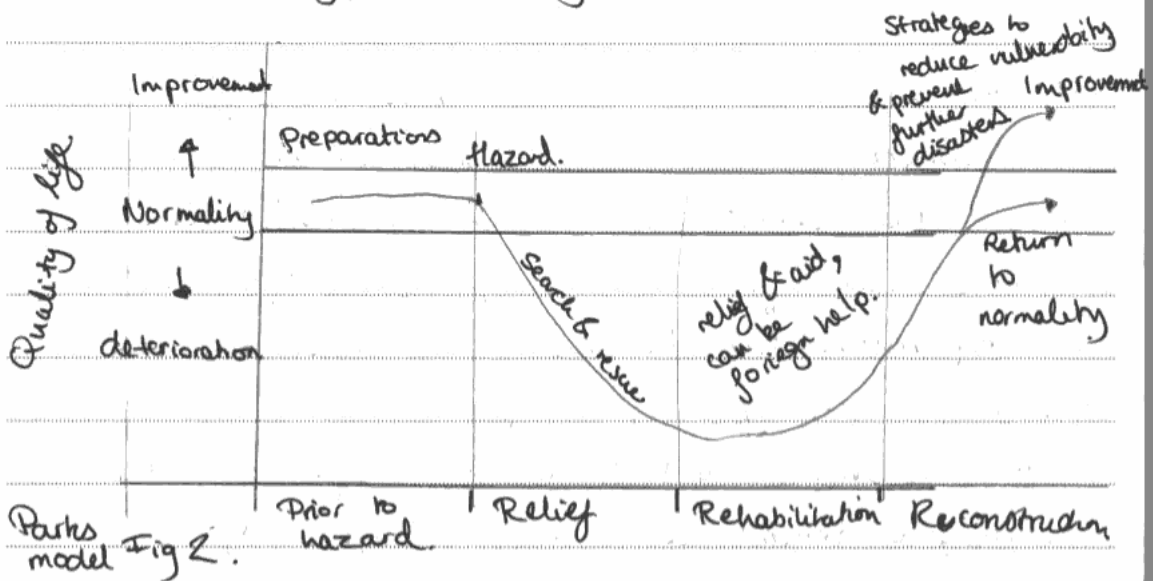
Parks model Fig 2.

Parks model is used to describe the events that take place during a disaster and also do show the 4 stages of response.

Preparing before an event occurs is a neccessary step to take to reduce the impacts, which is shown during the 1991 Pinatubo eruption, unlike the Armero tradegy, which show the consequences of none at all.

~~Earthquakes~~ Tsunami's are harder to prepare for, so the key response is the immediate relief, which is shown by the 2004 & 2011 tsunami. Lastly, reconstruction is an important part of decreasing the scale of impacts, ~~shown~~ which is shown by comparing the Haiti and Kobe earthquakes. All these human factors (the response) ~~is~~ impact the vulnerability. However those responses change, depending on the type of hazard, and its ~~local~~ physical location.

2.1: Volcanoes, preparations.

Volcanoes usually occur at plate boundaries and the most destructive ones are found near subduction zones. Unlike other ~~event~~ tectonic events, ~~volcanoes are~~ eruptions are far more easy to predict, thus the right preparations can be made to reduce the scale of impact with the right response.

A good example of this is the eruption of Mount Pinatubo, a stratovolcano that was highly explosive.

Question 2

To what extent do periglacial processes produce distinctive landforms and landscapes?

Pre release focus:

- **Explore** the variety of periglacial processes and their characteristic landforms and landscapes.

- **Research** a range of relict and present locations which show evidence of periglacial processes

- Most candidates displayed a sound knowledge of periglacial processes and could explain a range of resulting landforms. Terminology was often very good and there were many diagrams. However, candidates rarely progressed to a consideration of landscapes, although those using block diagrams often made this leap.

- Many candidates were very descriptive, reciting process knowledge, although often with great accuracy. One weakness was that many candidates thought that scree/freeze thaw weathering and solifluction was unique to periglacial environments, but better candidates identified that only gelifluction was unique. Some processes such as nivation were rarely mentioned. Some rather vague definitions appeared in introductions, particularly for periglacial, and many had rote learnt facts without being able to apply them effectively. Some wrote excessively about tor formation.

- As soon as they started addressing the 'distinctive' aspect of the title, candidates' analysis marks improved significantly.

- Ideas as to "distinctive" varied. Most simply settled for a range of periglacial features. The best successfully used the concepts of uniqueness and scale, and tackled the less obvious aspects (eg. post-glacial erosion, human impact) and sometimes were aware of the possibility of unrelated processes creating similar landforms.

- Understanding of the concept of 'equifinality' was varied however.

- The top level candidates were able to make that overview of glaciation per se and put periglaciation into context.

- Referencing was mostly very good and stuck to tried and tested textbooks, Geofiles and journals. The range of case studies reflected this fact with significant focus on northern Canada (McKenzie Delta), Greenland and the UK (for relict). Some had found higher level research papers on landscapes of Copper River in Alaska successfully. Other popular examples were: thermokarst in the Alps, loess in China, and the Cairngorms (for past above and below ground processes and currently only above ground). Only better candidates discussed the landscapes however, rather than, for example, discrete examples of a pingo. Few really made constructive use of fieldwork visits to places like Iceland or the Alps or even relict areas of the UK.

- Overall, candidates' appreciation of geological time seemed weak, and whilst it was not imperative to refer to the timeline in this report, better candidates certainly referred to formation in the Pleistocene era, or, the Little Ice Age in the 1300s, which supported their explanations when discussing the impact of weathering and denudation on the landscapes.

- Diagrams of varying quality were quite common in these reports, such as the formation of ice wedges, frost heave, stone circles etc., while diagrams of pingos were often less useful due to the detail required. Some candidates became distracted with glacial and/or fluvioglacial processes and landforms such as outwash plains and Aeolian loess deposits, without explaining their less distinctive role.

Block diagrams are in fact surprisingly easy to learn with practice, and can add a real 3d depth to answers.

Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen Question Number:

Question 1 ☒   Question 2 ☒   Question 3 ☒

Question 4 ☒   Question 5 ☒   Question 6 ☒

You are advised to use this page to plan your answer and then begin your answer on page 4.

Focus: processes - link to their landforms & landscapes

Define: periglacial, process, distinctive, landform, landscape.

Framework

Process	Landforms	D?	Landscapes	+D?
Ground contraction	i.w.p.s	✓	Active cont.	✓
Groundw. fr.	pingos	✓	Active cont & disc	✓
Frost heave	stone polys & stripes	✓	Active & Relict upland	✓
Freeze-thaw	block.s & screes, och.s	✗	Actives relict	✓
Solifl.	lobes & terraces head	✗	Active & relict	✗
Fluvi.	braided streams	✗	Act & relict	✗

Concl

makes least d. things   makes the most d. landf.s & land.s
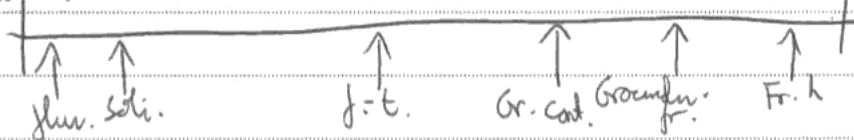
↑ ↑   ↑   ↑ ↑   ↑
fluv. soli.   f-t.   Gr. cont. Groundw.   Fr. h

Ongoing sub conclusions and a final end statement are needed for top marks. This candidate achieved 14/15.

4.0 Conclusion   10:11

This report has shown that different periglacial, processes
form differing ~~levels of~~ amounts of distinctive
periglacial landforms and landscapes.

Has least impact   Has greatest impact
                                    on forming distinctive
                                    landforms
                                    & landscapes

solifluction, freeze than ground groundwater frost heave
                        contraction freezing

The spectrum above shows the findings
based on the criteria for distinctive set out in
the introduction.
Using the classification of D. Anderson (2004),
we can see that there is a trend in
the results: the ~~above~~ below-ground processes
(frost heave, groundwater freezing, ground contraction)
play the biggest role in forming distinctive
landforms and landscapes. This is because they
all require the presence of permafrost to occur,
so the landforms which they produce will also
be dependent on periglacial conditions, ~~making~~
and so only occurring in periglacial environments,
making them distinctive. These distinctive landforms
then form distinctive landscapes most notably

the active landscapes, however fast heave can occur on a small scale in relict upland areas seen in the Cairngorms and also Tinto Hill, Scotland, ~~strikethrough~~ (Anderson), and ~~so contributing greatly to them~~ occuring in the greatest no. of landscapes to make more distinctive.

On the other hand, the below-ground processes (solifluction, freeze-thaw) have the least impact ~~can~~ in forming ~~the~~ distinctive landforms and landscapes. This is because they do not require permafrost and so aren't wholly dependent on periglacial conditions, allowing them to ~~form~~ ~~in~~ occur in other environments too as seen by ~~the~~ solifluction in southern England and freeze-thaw in the Cairngorms. While freeze-thaw occurs on a greater scale in periglacial environments, it can still occur elsewhere. ~~making i~~ Therefore the landforms which they produce are in general also not distinctive, with only freeze-thaw contributing to ~~the~~ distinctive landscapes with rock glaciers which require an intensity of the process which can only occur in periglacial environments due to their cold climates and fluctuating temperatures, making

active landscapes slightly slightly more distinctive, and overall having a much lower impact on on distinctive landform & landscape formation compared to the below ground process.

In conclusion, the below-ground processes play the biggest role in distinctive landform & landscape formation, and the above-ground processes play the smallest role.

Question 3

Assess the extent to which desertification is a major contributor to food insecurity.

Pre release focus:

- **Explore** the processes leading to food insecurity, including desertification.

- **Research** contrasting locations which show food insecurities, making particular reference to drylands.

- There were many excellent reports in answer to this question, with a range of case studies used to assess the role of desertification in food insecurity.

- The question is potentially broad, but the best candidates began with a clear focus i.e. what is desertification, how it leads to food insecurity and what other processes would be examined to assess its relative contribution. Far too many candidates just listed the processes leading to food insecurity they would assess without forming an argument. A large proportion of candidates said in their Introduction that this is what their report was going to do but then did something else. Once locked into debating food insecurity, many responses identified and assessed different factors that caused insecurity without considering the role of desertification amongst them.

- However, most candidates defined the key terms clearly and most were able to source these. Quantification of food insecurity was a feature of the best answers, such as using the Global hunger Index and Maplecroft Index. These attempted to rank the importance of the different processes. Words like 'root', 'direct', primary, secondary were very useful here. Far too many candidates just said countries were food insecure, without providing evidence.

- Candidates often created a discussion between factors that linked to desertification and factors that weren't, this created a balanced approach that was well considered. However, many wrote reports that answered the question "Assess the factors causing food insecurity in different world areas", without addressing desertification in depth.

- Nevertheless, appropriate areas were examined; countries in the Horn of Africa, Australia, China, Mongolia were frequently quoted and there is good political understanding amongst candidates in relation to the current situations in Darfur, Somalia, Kenya and Zimbabwe.

- Popular case studies were the Gobi desert, Aral Sea, Sahel, Zimbabwe, Haiti, China (rise of NIC). Less successfully used were Spain, California and Australia which although may have local pockets of food insecurity have far greater implications for their export markets if they suffer from reduced food output from desertification.

- A large number of candidates discussed the 1930's Dust Bowl in the USA, which although served to make a point, when accurately used, could have been replaced with more up-to-date events. Deforestation, salinisation, drought, poverty, and over-grazing were popular factors to discuss, but the role of climate change was often not well understood, and often muddled with the role that desertification has in changing an area's climate.

- Malthus and Boserup when well used were linked specifically to case studies such as the Sahel and annotated to illustrate potential crisis or checks.

Knowing why you are using a case study is essential

Sub - Conclusion

Therefore, Natural hazards can be a major contributor to food insecurity because they damage land which is used to grow crops as evidenced in this; but also in North Korea, whose floods wiped out 16% of the country's arable land. Also, in Etho on the opposite end of the scale drought causes food insecurity for millions, especially across the Sahel Region. One country being Ethiopia who had 3000 deaths in 2000 due to chronic food insecurity. A common theme here, however, is poverty and development levels.

ResultsPlus
Examiner Comments
On going evaluation helps access to higher levels in Analysis and Conclusions.

ResultsPlus
Examiner Tip
Make your sub conclusions obvious like this example.

Question 4

Assess the extent to which globalisation is having a negative impact on cultural diversity.

Pre release focus:

- **Explore** the concept of cultural diversity and varying views about globalisation's impact on cultures and their diversity.

- **Research** the contrasting influences of globalisation on cultural diversity at a range of locations and scales

- This question elicited an outstanding range in case study material, with many original, unpublished sources used. The use of fieldwork was outstanding, and certainly where students had gone around their local Chinatown or even clone towns, a greater understanding was shown. There was some excellent use of topical events, such as Cameron's speech on multiculturalism earlier this year as an example of changing viewpoints, and even the Royal Wedding. However, although often very good range was shown the examples were often too 'snapshot', often with no supporting facts or figures. If fieldwork is carried-out prove it!

- Introductions were clear although some of the weaker candidates put too much focus on defining globalisation and culture and not cultural diversity.

- The stronger responses followed through on their methodology and came up with some interesting information. Theory and perspectives were usually secure, and the case studies were tailored towards expressing different viewpoints on globalisation/cultural diversity. Students were very effective at developing a flowing, balanced argument here, with examples of positive and negative impacts, and areas where there was little impact at all. A significant number of students based their frameworks around the hyperglobalist view, the sceptics and the transformalists. Huxley and Ritzer featured. Others structured their answers by themes, such as media, migration, etc

- McDonaldisation and Bollywood featured heavily as might be expected. Vocabulary was often well developed such as good use of glocalisation.

The use of fieldwork
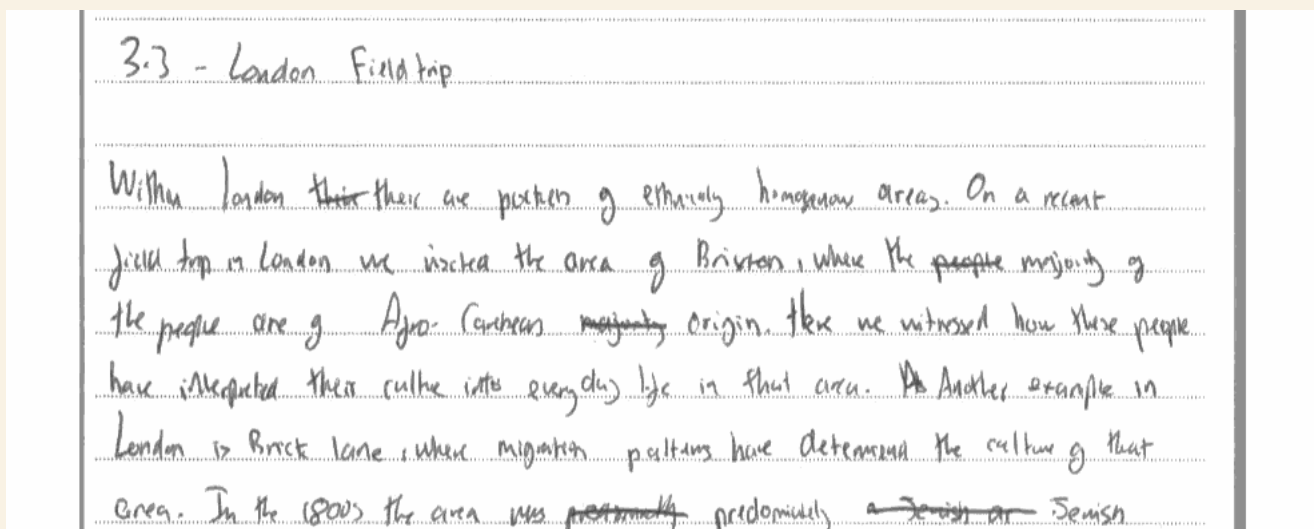
culture, but in the 20th Century a second hand development of Anglo-Indian Cuisines has occured. families from nations such as Bangladesh have changed this area into a now area of Muslim culture. China town have adapted the area to suit their local traditions and values. For example all the Shops, including Lockheaters has Chinese writing on the shop window. All this & illustrates how people from ethnically similar backgrounds who have tended to congregate together, have created areas which are rich in culture and very unique. Globalisation is therefore not having a negative impact on cultural diversity.

However, when London is looked at as a whole, it is clear that the area is very ethnically diverse. This is due to globalisation and subsequent migration. Therefore it could be argued that this is evidence that globalisation is having a negative impact on cultural diversity, as these different cultures merged together form a hybrid of cultures.

3.4. Summary

From the evidence presented in this Section of the report it is clear that people and societies are not being affected by globalisation and that it is not having a negative impact on our diverse and unique range of cultures.

Question 5

Assess the extent to which health risks can be related to geographical features

Pre release focus:

- **Explore** how far health risks can be linked to factors such as transport, environment and others.

- **Research** the links between different types of health risks and human and physical features at a range of locations

- The main issue here was what the command word "assess" meant, since many wrote all they knew about health risks.

- The meaning of the term "geographical features" seemed to cause concern, although better ones correctly identified and classified as 'physical/environmental' and 'human'.

- Some used factors as well as features, picking up one of the terms in the pre release and determined to use it. A catholic approach to features was used when marking this question to accommodate students who had gone down this track.

Case studies:

- Some used appropriate exemplars to illustrate how diseases related to features with better ones arguing human features often outweighed physical or vice versa and used good exemplars such as malaria in Africa; HIV and skin cancer. Cholera, Swine flu, TB, and diseases associated with lifestyle such as related to obesity were also popular. Features ranged from the ozone layer, shanty towns, polluted rivers, the 'Road of Death' in China, to asbestos mining areas and ageing populations. Many linked malaria to climate for example but there was a lack of knowledge that many places with a similar climate do not now experience malaria, e.g. Italy where more died in WW2 of the disease than of the war. Equally, cholera was often linked to climate when of course polluted water is possible in any climate, as those familar with the history of John Snow pointed out.

- Appropriate geographical terminology was thinly used such as: degenerative, pandemic and prevalence. A few used appropriate models to explain patterns such as the diffusion model or Kuznet curve model.

- The Health Map, from Whiteread and Dahlgren published in The Lancet in 1991 was also used effectively since it shows direct and indirect influences on health risk

This was given 8/10 for an introduction - almost top level

1.1 Introduction

A health risk is a factor that threatens good health, (Wham et al, 2009) it has a detrimental effect on human physical, social and mental wellbeing. The medical profession (BMA) recognises four categories of health risk: chronic (cardiovascular disease), infectious (HIV/AIDs), genetic (cystic fibrosis) and traumatic (road traffic injuries).

Health risk equation:

$$\text{Health risk} = \text{incidence of risk} + \text{vulnerability} - \text{management}$$

physical feature e.g. vector-borne diseases, climate

Human feature e.g. healthcare services.

Human feature

The health risk equation shows that there is a complex interaction between the physical and human features that cause health risks.

A geographical feature is one which is caused by the environment. This includes, latitude, altitude, climate. Throughout this report, a number of casestudies will be evaluated in order to determine the extent to which health risks can be related to geographical features. This report will look at individual casestudies and compare and contrast in order to answer the complex question.

1.2 Epidemiological Transition Model (figure 1)
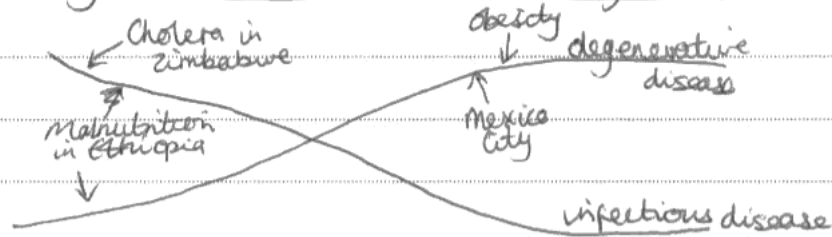
Stage:	1. Age of Pestilence + famine	2. Age of receeding Pandemic	3. Age of chronic disease	4. Age of emerging or re-emerging disease
Causes of health risk	Infectious	Reduction in prevalence + mortality of infectious disease.	Degenerative + lifestyle disease	emerging or re-emergence of old disease
Examples of health risk	Cholera, Malaria	Cholera, Malaria	Obesity, Type II diabetes	HIV/AIDs
Link to pollution	Localised pollution	High all types of pollution	Reduced land + water but high air pollution	High all types of pollution
Link to economic development	Low income	Low to middle income	Upper income + MCs	Low to middle income

The Epidemiological Transition Model link to economic development to health risk. During this report, each casestudy will be placed in a stage to answer the complex question.

Question 6

Discuss the criteria that might be used to measure the significance and fragility of rural landscapes used for leisure and tourism.

Pre release focus:

- **Explore** a variety of measures to assess significance and fragility such as environmental and ecological value and nature and intensity of use.

- **Research** a range of rural locations deemed to be of high value and under threat from leisure and tourism.

Several aspects needed to be deconstructed for this question to be answered at a high level:

- 'Criteria' was designed to focus students on qualitative and quantitative methods, with varying success. Few actually quoted valid measures as asked in the pre- release, and although a few managed to come up with qualitative indicators of the significance/ fragility of rural landscapes, few considered quantitative methods such as Simpson's diversity Index

- The 'significance' was not always reinforced e.g. National Park or UNESCO World Heritage status may have been referred to but not always developed. Better candidates discussed economic, cultural and ecological significance. 'Fragility' was often seen in terms of carrying capacity and/or resilience models. Some went as far as discussing VIM, VAMP, VERP, ROS, and LAC.

- Some personalised models according to their choice of case studies. The pleasure periphery was sometimes quoted in the Introduction as a means of showing how rural areas are becoming more accessible for leisure and tourism. A few used Butler to showcase how leisure and tourism has grown and how a fragile environment could be destroyed or managed to increase visitor usage. Some placed their case studies effectively along a wilderness continuum to highlight the range of case studies they would use – to justify a varied range.

- Prosser's carrying capacity and Trudgill's resilience models were introduced but it was very variable in terms of how they were applied to case studies .

- Popular case studies were: Galapagos, Machu Picchu, Cairngorms, Antarctica, Yellowstone, various African reserves and Ecotourism destinations. Unfortunately many chose the Great Barrier reef – not considered a rural landscape.

- Some candidates used their fieldwork to link in with the question, with some considering honeypots and zoning within their chosen rural area in terms of management styles.

- The important thing here is to select information from fieldwork (or secondary research of course) to support the title. For example, candidates using fieldwork in the coastal sand dunes referred to quadrat analysis but really did not go on to give examples of results found and what significance the quadrats illustrated in terms of rarity of flora (and fauna). EIAs were popular, and often well explained in the context of real or virtual fieldwork.

This candidate did not understand the focus of the question, and progressively went off track in the report despite obvious good research on the topic. Impacts of leisure and tourism became the focus, rather than the pros and cons of how to measure them.

4.0 Conclusion and Evaluation

'...nothing I at one place any one time. (widenend, 2010)

Conclusively there are a range of environments/ rural landscapes that are highly significant and ~~that~~ susceptible to tourism

Lee Valley Park is under threat due to the risk of the increased tourism damaging the carrying capacity, and so to ensure that the area is not irreversibley damaged the sustainability plan ensure that the area will not undergo any environmental change.

Pennine Way, largely historically significant, is also under threat ~~due~~ to tourism, with the fragility of the trail at its highest. Protection plans are being issued, with the rebuild of the new trail, and rejuvenation of the old, so that the trail does not go into decline, such as on the Butler Model, fig 1.

Antarctica, ~~the~~ 'tourisms last frontier'. This depiction has highlighted why people are attracted, wildlife, vastness and mystery of the continent. However increasing tourism means that the carrying capacity is under threat. The scientific significance means that the continent needs to be protected.

Stake holders such on the RSPCA, AAD and IAATO are knowledgable about the significance of the areas, and have power in saying what needs to be done about protecting the fragility of the landscapes mentioned.

With the time alloted in this report, not all areas have been covered, but it present a wide range of measures in place to ensure the fragility/significance of areas are protected.

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