



Pearson

International Advanced Level Geography

Unit 4 WGEO4/01

Researching Geography

Exemplar scripts with examiner commentaries

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Introduction

This guide has been created using student responses to the June 2018 International A Level Unit 4 (WGEO/04) examination paper. The answers and examiner commentaries in this guide can be used to illustrate the standards of the IAL Geography assessment.

Unit 4, Researching Geography, is designed to allow students and centres to specialise in a topic that reflects their expertise and their interest. It cultivates the skills of independent learning and research in a manner that is both excellent preparation for higher education but also an important skillset in its own right.

Each student will choose one topic to study and answer one question on that topic in the 90-minute examination. Either:

- Option 1: Tectonic Activity and Hazards, or
- Option 2: Feeding the World's People, or
- Option 3: Cultural Diversity: People and Landscapes, or
- Option 4: Human Health and Disease

Students will be given pre-release material of research focus questions relating to each of the four options.

Unit 3 is worth 20% of the total IAL marks. It is 1 hour 30 minutes long and marked out of 60 marks.

Our command words are defined in our specification, please see pages 94-95, and will remain the same for the lifetime of the specification. Questions will only ever use a single command word and command words are used consistently across question types and mark tariffs.

This document should be used alongside other IAL Geography teaching and learning materials available on the website here:

<https://qualifications.pearson.com/en/qualifications/edexcel-international-advanced-levels/geography-2016.coursematerials.html#filterQuery=category:Pearson-UK:Category%2FSpecification-and-sample-assessments>

The June 2018 WGE04 question paper, mark scheme and examiner report can be found here:

<https://qualifications.pearson.com/en/qualifications/edexcel-international-advanced-levels/geography-2016.coursematerials.html#filterQuery=Pearson-UK:Category%2FExam-materials>

Generic mark scheme

Generic mark scheme	
I	Introduction; defining and focusing on the question
0	<ul style="list-style-type: none"> No attempt to introduce report.
2-1	<ul style="list-style-type: none"> Title referenced but not deconstructed, although topic addressed. Neither focus and framework addressed. One or two key terms partially defined.
4-3	<ul style="list-style-type: none"> Some reference to title but limited deconstruction. Focus of report implied but unclear. Framework implicit but appropriate indication of framework, either by concepts and/or case studies. Some accurate definitions of key terms.
5	<ul style="list-style-type: none"> Clear deconstruction of title. Focus of report on geographical question/issue is both clear and rational. Framework is both explicit and appropriate, either by places, environment and/or concepts. Accurate definitions of all appropriate terms.
R	Research knowledge
0	<ul style="list-style-type: none"> No evidence of research.
5-1	<ul style="list-style-type: none"> Some case studies/concepts but lacks selection and range so significant gaps. Concepts and/or theories may be referenced/stated but neither explored nor applied to question. Very limited range of evidence presented with very limited use of numeric and qualitative data. Processes not addressed directly but simply asserted.
10-6	<ul style="list-style-type: none"> A range (scale/location) of all/mostly relevant case studies used. A limited set of concepts/theories used that assist in focusing on the question. Mostly accurate evidence used but with gaps in the numeric and qualitative data. Some relevant processes explained but with inaccuracies.
15-11	<ul style="list-style-type: none"> Wide range of relevant case studies used (by scale and or location). Relevant concepts and/or theories/models used to support focus. Factual, accurate and topical evidence used which includes both quantitative and qualitative data. Relevant processes, interactions and changes accurately explained.

A	Analysis, application and understanding
0	<ul style="list-style-type: none"> • No understanding or analysis.
5-1	<ul style="list-style-type: none"> • No obvious report. • A few simple statements related to topic as a whole but not to question asked. • Understanding stated in a few simple phrases but no development. • Statement that views/perspectives might vary but without evidence/support. • Any maps/diagrams are rarely used to support answer.
10-6	<ul style="list-style-type: none"> • Report is unclear and direction of argument is obscure. • Generalised material often weakly linked to question with focus unclear. • Some conceptual understanding delivered through basic unqualified statements. • Limited appreciation of how identifiable values/perspectives might vary with no support. • Any maps/diagrams are sometimes used to support answers.
15-11	<ul style="list-style-type: none"> • Report is clear but not always easy to follow with some hesitancy in the argument. • Most of the research is used to support the question which remains in focus. • Some conceptual understanding and argument although largely asserted/stated. • Some appreciation of how identifiable values/perspectives vary although limited support. • Any maps/diagrams are usually used to support answer.
20-16	<ul style="list-style-type: none"> • Report has a clear direction which is argued coherently. • All research interpreted and applied directly to the question set. • Strong conceptual understanding with coherent argument and counter argument. • Appreciation of different interactions/values/perspectives that are supported by evidence/examples. • Any maps/diagrams are accurate and used to support answer.

C	Conclusion and evaluation
0	<ul style="list-style-type: none"> • No conclusion or evaluation in report.
5-1	<ul style="list-style-type: none"> • Content of report weakly related to C and E. • Evaluation limited to statement of inadequate methods. • Conclusions made but much is unrelated to content. • No qualifications.
10-6	<ul style="list-style-type: none"> • Selective recall of content of report with some evidence ignored. • Some evaluation, either on-going or in final conclusion largely about methodological flaws. • Some conclusions although linkages with evidence occasionally tenuous. • One or two qualifications/exceptions stated but not explained.
15-11	<ul style="list-style-type: none"> • Clearly stated conclusion with explicit references to title. • Thorough use of content/case studies on places and environments used in report to inform conclusion. • Consistent return to the focus. • Evaluation offers a judgement, but also recognises the complexity of the question.

Q	Quality of written communication, methodology and sourcing
0	<ul style="list-style-type: none"> • Basic standards of quality of written communication not met.
2-1	<ul style="list-style-type: none"> • Disjointed organisation and sequencing although may have some subsections. • Many errors in punctuation and spelling that make report hard to follow. • Very limited use of appropriate geographical vocabulary. • Methodology unclear with no detail of rationale for selection of research evidence. • Almost no referencing evidencing/sourcing from very limited range of sources.
4-3	<ul style="list-style-type: none"> • Generally clearly written with some report style subsections. • Sound standard of punctuation and spelling but with errors although meaning remains clear. • Some good use of appropriate geographical vocabulary. • Sound methodology demonstrating some rationale for evidence selection with simple comments about possible partiality. • Occasional but patchy referencing from several different sources.
5	<ul style="list-style-type: none"> • Coherent structure and sequencing with obvious report style subsections. • Excellent standards of spelling and punctuation, including geographical vocabulary, with very few errors. • Clear methodology showing a rationale for evidence selection, including potential issues of partiality. • Accurate referencing of a wide range of sources.

Assessment objective mark distribution						
	I	R	A	C	Q	Marks
AO1	1	15	0	0	0	16
AO2	2	0	16	6	0	24
AO3	2	0	4	9	5	20
Total	5	15	20	15	5	60

Exemplar scripts

Example 1 – OPTION 1: Tectonic Activity and Hazards

- 1 'Predicting the locations at risk from tectonic hazards is much easier than predicting the magnitude of those hazards.' Discuss.

(Total for Question 1 = 60 marks)

Mark scheme

Indicative content

The focus of this title is the differences between predicting the distribution and magnitude of seismic and volcanic hazards.

The framework chosen may be by the following:

1. An overview of hazards treating volcanic hazards and seismic hazards separately, case study by case study.
2. Distribution and magnitude addressed separately by case study.
3. By plate boundary – different margins = different scale of event.

Key analytical points

- The distribution of tectonic hazards is quite well understood but the varied magnitude of those events is much less well understood.
- The distribution of volcanoes is well known although mapping of undersea volcanoes is less precise – however, activity level/magnitude of volcanoes is not so well understood.
- Understanding comes from a range of increasingly sophisticated instrumentation, which is better at forecasting distribution/location but poor at forecasting magnitude.
- Earthquakes much more widely distributed but harder to define given constant movement of crust – 'significant' earthquakes distributed along plate boundaries but many exceptions (hot spots and intra-plate movements along fault lines)
- Earthquake magnitude variation extremely difficult to explain, although there are some attempts to do so by exploring focal depth and accumulated strain in rocks along transform faults.
- Volcanic and seismic events often part of the same set of processes reflecting movements of magma

In summary

- The statement is broadly correct but there are obvious exceptions.

Case studies used are likely to include:

1. California – Loma Prieta
2. Nepal
3. Iceland – Eyjafjallajökull
4. Hawaii
5. Asian, Japanese and Chilean tsunami events.

Student response:

1. Introduction

Focus: "Tectonic activity is defined as the large ^{scientific theory of} scale motion of the earth's lithosphere" - Holmes. Convection currents from the earth's asthenosphere dictate the movement of large mass of land due to the pressure it brings. Convection currents has allowed greater movements of the plates and has split up the Earth's Panjea into 7 major continents. ~~Plate movement~~ Hazard magnitude ~~is much~~ and location are impacted by various applications such as resistance of the plate, what boundary it is, what type of magma is present and more.

Framework

I will be setting up my report into the different plate margins, including constructive, destructive and intraplate margin. This will allow me to demonstrate my point that location is easier to predict the magnitude of the hazard due to various different factors.

Within I will be able to identify the different magma types present at each hazard, the case studies to support and go against my point as well as the different processes which take place.

Definitions

The definition of tectonic hazards are the potential risks that come about due to the location of the plate boundary. In this case, Volcanoes and hazards. Magnitude is defined as the amount of energy released from the hazard which determines the size of impact. I have chosen these tools to measure magnitude:

VEI: Volcanic Explosivity Index: takes into consideration the amount of energy released. I chose this measurement as it is much more scientific and objective as it takes into consideration the columns and ash layers of the volcano. However, at times it was complex to interpret and took up a lot of time.

Moment Magnitude (MW) was used to measure the magnitude of the earthquakes. It did this by considering the slip and resistance

of the rock as well as the magnitude of it. This was a much more scientific way to demonstrate magnitude as the Mercalli scale is much more subjective and open to interpretation.

2. Methodology

I used geology.com and Live science.com to identify the different tools to measure the magnitude of both hazards. I wanted to check the credentials of geology.com so I researched the Author, Hobart King and found he was a credited university lecturer which made the research more valid.

I used the Geofiles EQ133 and VA30 to identify the different processes which took place in impacting the magnitude of the two hazards. I peer reviewed this information and then cross referenced to the Book 'Hazards' by Skinner ~~and~~ in order to remove bias.

The Smithsonian and USGS was one of ~~my~~ my best research tools and allowed me to identify the different locations at which

hazards are created. This information is used on a worldwide scale and is used by scientists so I knew it was much more reliable.

Lastly, I also used the Geofile Case Study Reports to collect and gather rich case study detail. This allowed me to gather information for the Carnegie Ridge. I then peer reviewed and cross referenced to Wikipedia, as this was the only source of information we could find.

3 Analysis of Volcanoes and Earthquakes at a Constructive Plate Margin

At a constructive plate margin these hazards are characterised by a low MW for earthquakes of around 1-3 and a low VEI of 1-3 for volcanoes. At this location it is much easier to predict what type of risk it will be & than the magnitude. We used the Smithsonian to gather this data and therefore was very accurate. However there was a lot of data of up to 1000 years. There was too much data to handle so we only used the last 100 years.

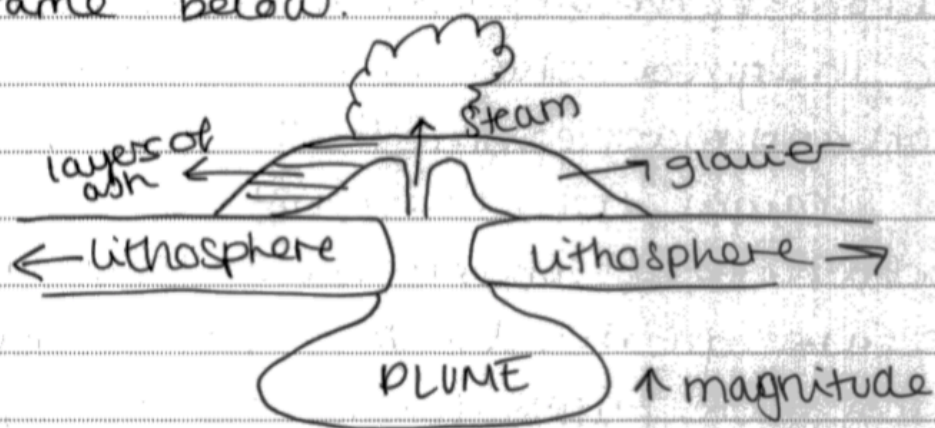
Volcanos 3.1

At a constructive plate margin volcanoes are characterised as a ~~low~~ ^{VEI of 1-3} magnitude (MW) of ~~1-3~~ and high frequency. This location is much easier to predict due to variety of factors ~~of~~ ^{affecting} magnitude of the event.

At a constructive plate margin, two lithospheric slabs are diverging away from each other due to the pressure of the two convectional cells. This causes magma to rise from the asthenosphere and pull the two plates apart, known as slab pull. This forms a ridge between the two plates, as well as creating tensional faults. This forces the magma to rise and cool, forming a new crust.

At a constructive plate margin there is basic magma which is rich in aluminium, iron and magnesium. As the lava has come straight from the earth's core, it is much hotter, of about $1000-1200^{\circ}\text{C}$, meaning there are greater dissolved gases making it much more fluid. This provides a low silica of around 44-52% and has a low viscosity. An example to support this

is that Mid-Atlantic ridge where the two plates are diverging away. This is shown in that Eldfell and Hekla are VEI was of 3. University of Iceland showed that there is a high recurrence rate and low magnitude. This supports that the location is much easier to predict than the magnitude. An anomaly that supports the fact that location is easier to predict than magnitude is Eyja in Iceland which was VEI 4.5. Here, the volcano was placed on top of a glacier. This means that the layers of ice turned to steam due to the heat, turning ice to steam, creating the 35,000ft ash cloud. Not only this but it is also located on top of a plume, which provides more viscosity to the lava. This is seen in the diagram below.



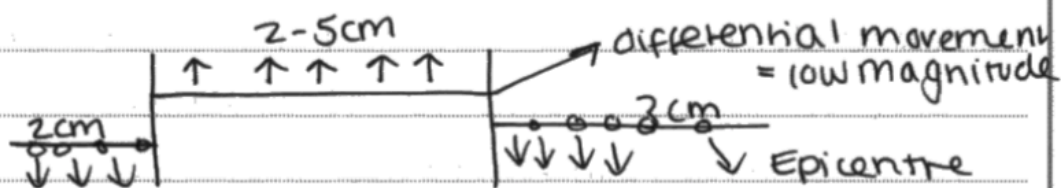
This diagram supports magnitude is difficult to predict.

Earthquake 3.2

At a constructive margin, this is characterized as a low magnitude MW 1-2 and high frequency. Earthquakes tend to occur at tensional faults as the pressure builds up perpendicular to the plate due to differential movement. This means that pressure is constantly being released. This is easy to predict in the location as movement is constantly occurring.

An example of this is that on the 17th of May 2018, there were 3 earthquakes in the midatlantic ridge with a magnitude of 1.5 MW.

This location is seen in the diagram below.



To conclude, I do believe that location is much easier to predict in volcanoes and earthquakes. In volcanoes, the alternating factors of ice glaciers and plumes create difficulty in predicting magnitude due to temperature

and chemistry, however location is always constant for earthquakes, although it is more difficult to predict location due to transform faults it is much harder to predict magnitude. This is because magnitude can vary due to plate thickness and location of epicentres.

4. Analysis of Earthquakes and Volcanoes at a destructive plate margin

4.1 Volcanoes

At a destructive plate margin, two plates are converging towards each other. Here the ~~lighter~~ denser oceanic crust is being dragged down due to convection currents and gravity. Convection currents from the earth's asthenosphere heat up the plate and drag it down, known as slab pull. This then cools and sinks, known as the subduction zone. This is as the oceanic plate subducts, it pulls off part of the continental plate, forming a caldera. As the plate subducts there is a greater pressure created and more friction which creates an eruption to occur.

At a destructive plate margin there is acidic lava which is andesitic and rhyolitic. This lava has a lower temperature of $600 - 1000^{\circ}\text{C}$, as it does not come from the earth's core. This lowers the amount of dissolved gases making it much more viscous fluid. Here, there is a high silica content of 66% and it has a high viscosity.

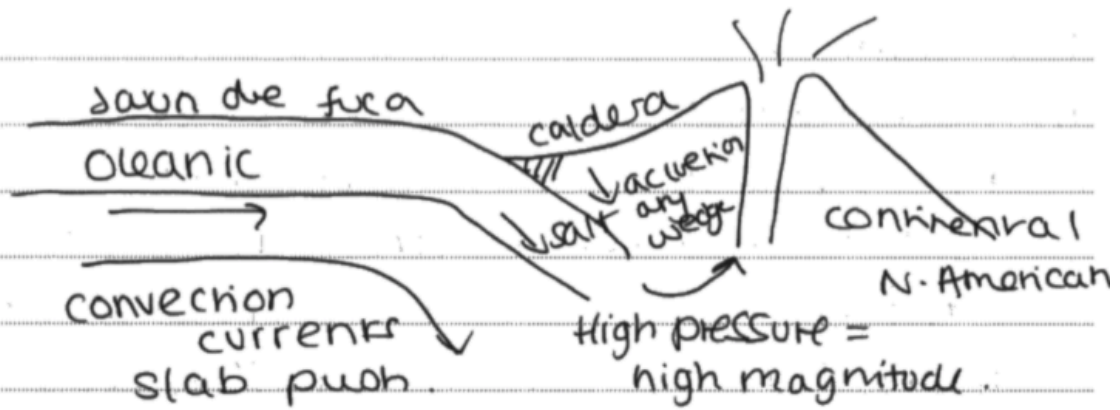
As the continental plate is subducted a part of the autochthonous wedge is pulled off which as well as minerals from the oceans. This increases the silica content greatly, as it becomes more radioactive. As it subducts, water is also pulled down, which under heat turns to steam which melts the crust and makes it much more vulnerable. This alters the range of magnitude.

An example to support the fact that magnitude is difficult to predict is the Cotapaxi star area in the Galapagos island at the Carnegie ridge. Here, the hotspot has formed a ridge which is forced to subduct beneath the Andes. This

has created one of the most active areas, including 11 of the world's most active volcanoes, Cotapaxi:

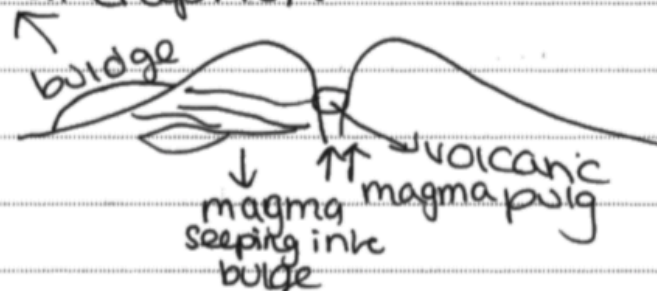
The formation of the ridge due to the hot spot has formed a shallow subduction causing a seismic gap to be created. This slow and shallow subduction causes varying ~~short~~ short megathrusts. This is seen in that it Ecuador experienced an eruption of 7.9 VEI. This supports the fact that magnitude is difficult to predict due to varying factors such as a seismic gap.

An example that goes against the fact that magnitude is harder to predict is the Mt St Helens 7-8 VEI eruption. Here the Juan De Fuca plate subducts beneath the North American plate, forming a high silica content and high viscosity. This shows that ~~magma is~~ magnitude is not easy to predict. This is seen in the diagram below.



This shows that magnitude can be predicted due to the same processes occurring. However, mt St Helens can be argued to support my point that it is ^{difficult} ~~easy~~ to predict magnitude due to its varying factors. For example, it had a volcanic plug, ~~th~~ in the vent, which cooled the magma down in the vent. This led to the formation of a bulge on the north side of the volcano which produced venting episodes which led to a lateral eruption. Seen in the diagram below. This influenced and potentially caused a larger eruption.

Lateral eruption



Earthquakes 4.2

At a ~~construct~~ destructive plate margin, earthquakes are characterised by a low frequency and high Mw of 4+. Here, two plate margins, oceanic / continental are converging. As the oceanic plate subducts it heats up. It subducts at a shallow angle which causes high magnitude earthquakes such as due to it being close to the surface. Magma is difficult to predict as at a continental / continental plate margin, the two plates subduct much quicker and at a steeper flight. This leaves the plate cold and brittle, causing it to shatter and break lower down. This creates a low magnitude. This demonstrates that in fact magnitude is extremely difficult to predict due to being unable to predict the flight of the plate, shallow or steep.

However, an example to support magnitude is easy to predict is the Sichuan Earthquake which had a 7.8 Mw. The Indian plate subducted beneath the Eurasian plate to demonstrate a

shallow epicenters of 10km below the surface.

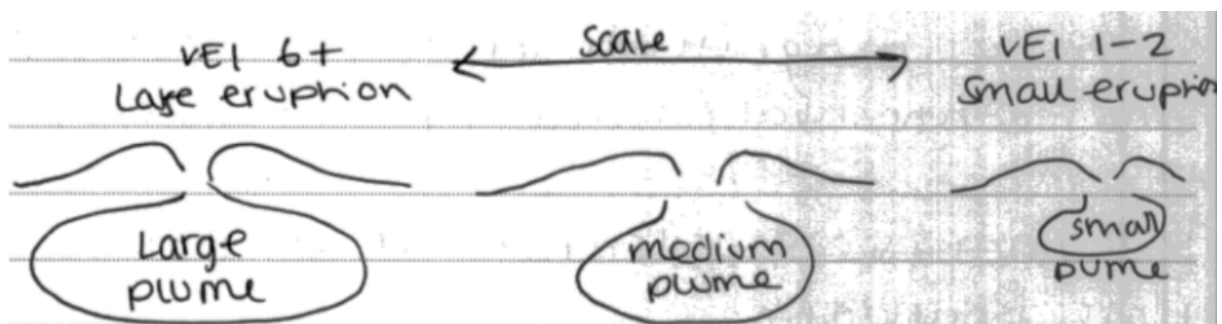
To conclude, I believe that ^{volcanoes} volcanoes are extremely difficult to predict in terms of magnitude. This is because we are unaware of its plugs or seismic gaps that can alter its magnitude. However, location is always constant and along a plate margin. In terms of earthquakes, I believe that magnitude is much easier to predict than location. ^{It} This is because magnitude at oceanic / oceanic and continental / oceanic are consistent.

5.0 Analysis of Volcanoes at an Intra-Plate Boundary

At a Intraplate boundary, magnitude is extremely difficult to predict. Location is consistent due to the presence or no presence of a plume.

At a hotspot, mantle heats up and rises from the earth's asthenosphere and rises as a thermal plume. This has a lower heat and has a low lithospheric pressure. This can force magma to rise through the

cracks, which in turn erupts. At a hotspot, they are continually altering magnitude strengths due to the lithostatic pressure and size of the plume. We can get eruptions that are small from VEI 1-2 and large eruptions from VEI 6+ such as the recent eruption of Kilauea. A recent large VEI eruption is the De Fuego eruption in Guatemala. This shows how magnitude is so difficult to predict. This is shown in the comparative diagrams below.



To conclude I believe that magnitude is much difficult to predict due to the size of the plume altering. However, locations are easier to predict as they are either in the presence of or no plume.

6.0 Conclusion

To conclude, I believe that magnitude is more difficult to predict than location. In terms of volcanoes, magnitude is impacted by various physical factors such as glaciers, plugs and the presence of hotspots. ^{despite temperature & chemistry remaining constant} These factors alter the magnitude, whereas location remains constant at destructive and constructive fault lines and they determine magnitude. As opposed to earthquakes, I ~~also~~ believe that magnitude is much easier to predict than location. This is because there are not as many confounding factors that influence magnitude: constructive low magnitude and destructive high magnitude.

If I were to complete this piece of research again I would spend more time researching factors that influence magnitude. ~~At~~ Especially at the conservative plate margin, I would have liked to research the African Rift

valley as it would have provided a stronger case against magnitude being difficult to predict. This is because it is a younger plate margin and may prove to be more explosive due to its youthful lava. I would also like to spend more time researching hotspots as an example.

Examiner comments:

INTRODUCTION - DEFINING AND FOCUSING ON QUESTION

4 marks / Level 2

This report begins with a carefully learnt definition of tectonic activity followed by a brief account of the processes leading to that activity. The title is addressed at the bottom of page 3 and the candidate makes an early commitment to the intended conclusion of the piece when stating unambiguously that, 'location is easier to predict the (sic) magnitude due to various different factors'. This last truism is unnecessary but the candidate goes on to suggest that there may be some doubt when suggesting that they will 'go against their point as well'. The definitions are sound although there is no attempt to address the relationships between different types of hazard.

RESEARCH KNOWLEDGE

13 marks/ Level 3

There is obviously a significant relationship between the research knowledge assessed in this section and the analysis of that material in the next. Limited research is inevitably going to impact negatively on achievement in both the analysis and evaluation of that material. This candidate provides a 'wide range' of case-study evidence which was 'relevant' and both 'accurate and topical'. For example there was very good detail offered in recognising that Icelandic volcanoes do not always conform to the 'model' of well-behaved constructive margin stereotypes. The recognition that sitting on top of a plume 'provides more viscosity to the lava' (page 8) is very impressive.

ANALYSIS, APPLICATION AND UNDERSTANDING

15 marks / Level 3

This response is a reasonably successful attempt to analyse the results of their research. There is good retained knowledge of the general characteristics of both earthquakes and volcanoes at the two dominant plate boundaries and at intra-plate locations. That analysis, as already acknowledged in the commentary about the research is sometimes extended beyond the general truths. However the analysis stops short of reflecting in any detail about the impact of these on predictability. For example the material on page 9 suggests that location of earthquakes is predictable on constructive boundaries but fails to add that this only insofar as they are likely to occur somewhere on that boundary rather than at any particular location on that boundary. Throughout this analysis the candidate rather conflates 'predictability' with the degree to which tectonic events are complex. For example the Cotapaxi material on page 12 is offered as an example of how it is 'difficult to predict magnitude' having quite ably explained the impact of the 'seismic gap'. Similarly the St Helens example is not exploited quite as much as it might have been given that there is an opportunity to point out that the nature of that eruption was altogether surprising to the Geological community at the time because of the force of the lateral blast. Thus in general the candidate could have developed their analysis further without much more than a few minutes reflection.

CONCLUSION AND EVALUATION

11 marks / Level 3

This section of the report is less convincing than the analysis on which it is based but, nonetheless is placed in low level 4. The relevant material is interlaced with the analysis as on-going evaluation although not heralded as such but also drawn together. Although much of it is thoughtful the candidate also recognises, in their evaluation, that it is flawed especially when noting the absence of any attention to conservative margins, presumably on the grounds that they are rarely associated with any volcanic activity. An omission that they do not acknowledge is the not uninteresting observation that very many of the most devastating tectonic events of the past 100 years have occurred at locations with virtually no history of posing any threat.

QUALITY OF WRITTEN COMMUNICATION, METHODOLOGY AND SOURCING

1 mark / Level 1

This is a well-organised report with good standards of spelling and specialist vocabulary. The methodology is clear and there is a recognition that the selection of case-study evidence might lead to rather partial conclusions. However, the referencing is not strong and the use of on-going sections offering some evaluation might have given the piece greater coherence.

Example 2 – OPTION 2: Feeding the World’s People

2 ‘Improved technology is the best way to increase food supply.’ Discuss.

(Total for Question 2 = 60 marks)

Mark scheme

Indicative content

The **focus** of this title is the **relative** importance of increasing food supply through the use of technology.

The **framework** chosen may be by the following:

- Different methods of increasing food supply and food security from new hybrid crops, the use of GM, expansion of cropland, improvements in irrigation etc.
- A ‘case-study’ approach by area/region with different examples illustrating how food supply has been increased and thus security has been improved.

Key analytical points

- Technology clearly has a central role in determining food supply although it is not the only route available – increased agricultural land being an alternative route.
- However, technology is not uncontroversial – there may be short-term increases in production from the use of, for example, GM, but the long-term implications are less certain.
- Low-tech methods can be important in dryland areas.
- Expanding cropped areas is an obvious alternative pathway to increasing supply, although there is little scope for further increases without compromising valuable ecosystems.
- Long-term insecurity might also be exacerbated by climate change and other hazards, with net primary productivity changes affecting yields; some of these might be addressed through technology.
- Food insecurity is significantly affected by access, utilisation, stability of supply as well as availability, which is perhaps less a matter of technology than it is political will.
- Evaluation might include the view that without human ingenuity and technology food output would be significantly lower – 1st and 2nd agricultural revolutions, Green Revolution and genetic modification.

In summary

- Technology is very important but more so for supply than for security.

Case studies are likely to include:

1. GM and Green Revolution
2. Low-tech/intermediate tech in dryland areas
3. Land purchases in North-East Africa – Somalia, Ethiopia
4. Improvements in food storage through applications of technology.

Student response:

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

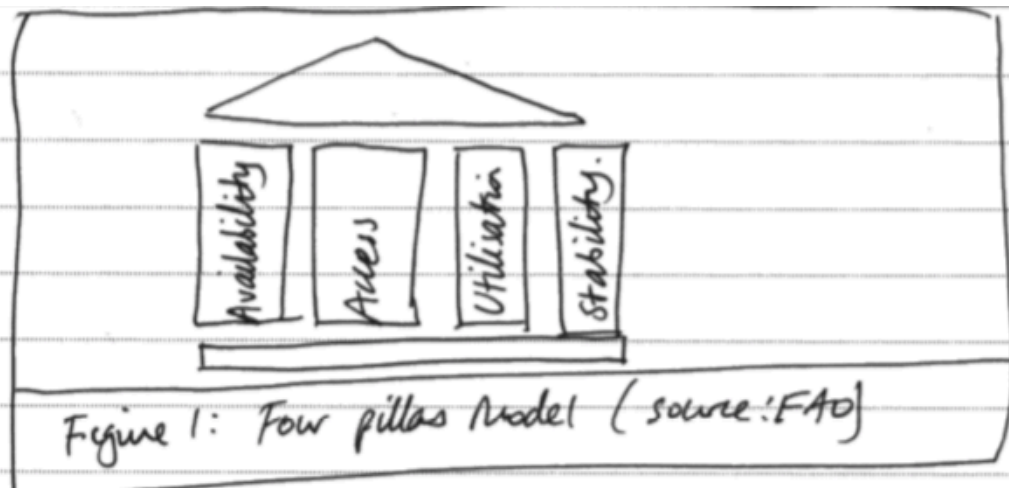
- Supply → Not security.
1. Intro Technology = physical and idea
2. Framework
3. Research knowledge. Green Rev - supply front tech Aswan - tech.
Land Grab - supply not: Trussell trust.
Practical Action - tech.
4. Analysis
5. Conc. Malthus/Boserup.
- Green - HYV - 4x as much rice and maize
1966-67. India 70% reliant - deny dry not yield.
Tech. Home use items lack - not used everywhere.
- Aswan - 1970 - 4000 km² irrigated + $\frac{1}{3}$ extra area.
Crisis 1973-74, 83-87
- Land grabs - increase supply - suggest alteration - political - not best way to improve supply.
- Trussell - food bank / or supply not supply.
- Practical - not supply, encouraging reduced corruption - storage
Best way = redistribute. 1992 6000 CAP.
with dams.

Introduction: ⊕ security can be

Food ~~security~~ ^{supply} is defined as 'when people have the availability and adequate access at all times to safe sufficient nutritious food in order to maintain a healthy and active life' according to the Food and Agricultural Organisation (FAO). Latest figures from the state of Food security report published in 2017 suggest that the number of malnourished people is increasing, where an increase from 777 million to 815 million was seen between 2015-2016. This can be attributed to the lack of food supply to many people. However, it is estimated that the world produces 17% more food per person, yet around 1 billion people go to bed hungry every night. This report will investigate whether technology is the best way to improve food supply, or whether other methods such as a redistribution of food would be more effective in 'increasing supply' to people who lack the access to it.

2. Framework

In this report, we can use the 'Four Pillars' model laid out by the FAO, ~~etc~~ to determine how food supply to people can be achieved. This is seen in figure 1.



These key terms can be defined as the following:

Availability: the production, distribution and exchange of food

Access: the when people can safely acquire food through ~~the~~ either purchase or through aid.

Utilisation: cooking or the safe storage of food

Stability: once all three pillars above have been achieved and ~~is~~ are sustainable

Thomas Malthus' view in 1798 can be used to see how ~~for~~ ensuring food supply to the human population would be achieved - Malthus believed that ~~if~~ as the human population grew geometrically, the food supply would grow arithmetically, and that the ~~is~~ level of food supply was constant. ~~However, in 1968, Ester Boserup~~ Malthus also believed that as the human population increased, there would be negative checks, such as contraception and ~~the~~ celibacy, and positive checks, such as war, famine etc

that would bring about a decrease in the human population ~~to~~ to a level that could be sustained by the carrying capacity (ie where the amount of food would just be enough for the ~~same~~ number of people). However, Malthus overlooked the fact that food supply was not constant and ~~new~~ new technologies as well as new regions could allow food supply to increase (not arithmetically). Esther Boserup in 1965 countered for these ~~changes~~ modifications by saying that 'necessity is the mother of ~~an~~ invention', and therefore new technologies would be discovered as ~~the human~~ population ~~time~~ went on ~~in~~ which would support a growing human population. Their theories can be seen below:

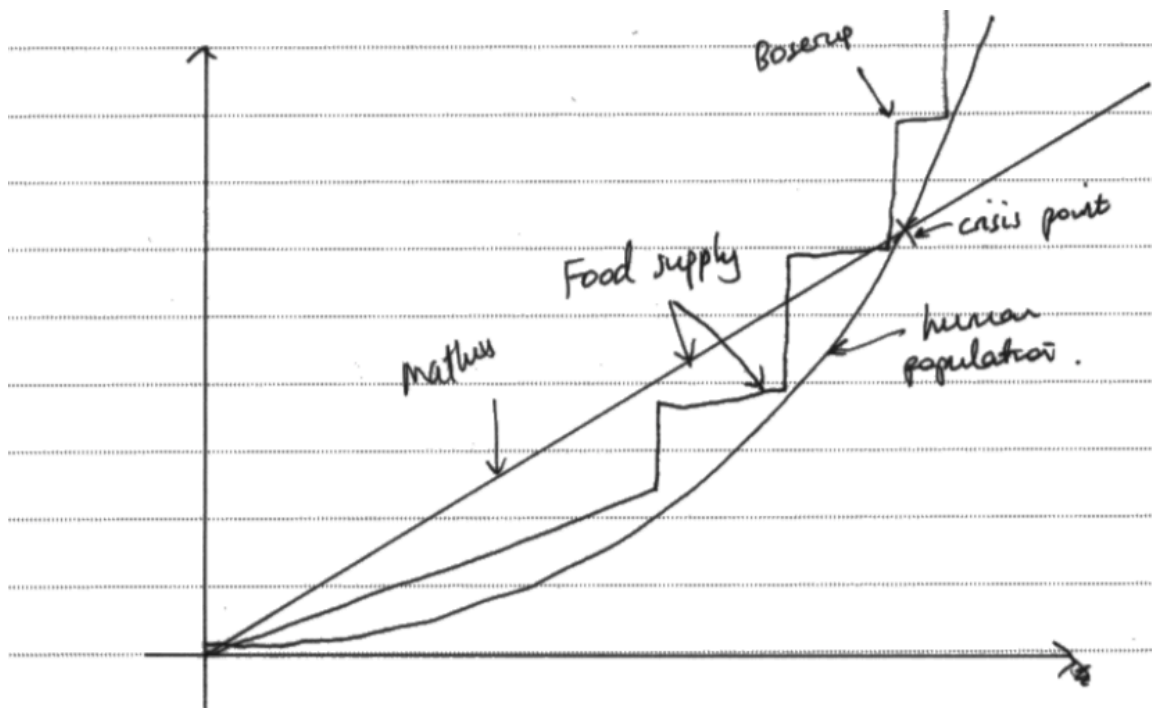


Figure 2: Malthus and Boserup.

3. Research knowledge

The following case studies have been used to investigate ~~the~~ different methods and technologies to ensure food supply:

Strategy	Scale / Approach	Source of info / bias
Green Revolution	Global / top-down / technology	Edexcel geo. textbook / limited
Land Grabs	Regional / redistribution	The National (UK newspaper) / opinion ^{needed}
Aswan Dam	National / technology	britannica.org / limited
Practical Action	Local / bottom-up / technology	Edexcel geo textbook / limited
Trussell Trust	Local / to bottom-up redistribution	trusselltrust.org / possible ^{statistic} manipulation

We will now analyse each of these case studies.

4. Analysis

4.1. The Green Revolution:

The ~~the~~ Green Revolution was the process and attempt at using HLC technologies in LICs in order to provide food for people. By using High-Yielding Variety Crops (HYV), such as maize and rice, it allowed for four times the original yield to be produced. The other advantage was given that these were drought resistant crops, ^{and} they were mass produced, the 1966-67 agricultural revolution that occurred in India and Mexico saw drastic increases in food supply. ~~The~~ Furthermore, the fact that these drought-resistant crops were being more commonly used meant that there was reduced reliance on rain for providing food supply for people - evident by the fact that 70% of India's crops prior to this were ~~depen~~ entirely dependent on rainwater. This created complications during ~~the~~ the dry seasons, and the Green Revolution crops provided a stable food source for people as these crops were able to grow. ~~The~~ However, a limitation to the 'revolution' was that it has not been able to ~~be~~ reproduced in other continents in the world, as it was attempted in Africa but failed due to a climate that was too varied. Therefore, the extent at which the HLC technology being used in LICs was limited, but nonetheless was still able to provide a food source for people which, without, would suffer from famine and starvation during low precipitation and drought periods.

4.2. The Aswan Dam:

The Aswan Dam was built between 1960-70 in ~~Egypt~~ Egypt, and has been in use since 1970. It has allowed for controlled flooding in the Nile River, as well as acting as a water reserve while also creating a ~~fish~~ fishing industry in the Lake Nasser formed behind it. The Aswan Dam is an example of how technology has been used to increase food supply; it allowed for 4000 km² of land to be irrigated all year round, while also converting an extra one-third of desert area into agricultural land, therefore greatly improving food supply as more crops are produced on a greater scale. Furthermore, the ~~the~~ positive effect of the dam was seen when a possible Malthusian Catastrophe was averted ~~in 1973-74~~ in 1973-74 and again between 1983-87, when the rest of Western Africa suffered from famine; Egypt was able to continue producing food and being self-sufficient due to its large water reserves releasing water for farming. Therefore, the dam is ~~an~~ ~~an~~ another example of how water storage strategies through improved use of technology available can be used to increase food supply, as without the dam, there would be a possible famine. Furthermore, the dam has allowed for wheat ~~to be produced~~ ~~to~~ yield, to be increased four fold, also improving supply.

4.3 Land Grabs:

Land grabs are an example of how food supply can be ~~seen~~ perceived to be increased while not using technology to do so. This was seen in 2008 when the Sudanese government leased 30000 hectares of agricultural land to Abu Dhabi, in return for knowledge and ~~exp~~ expertise of ~~from~~ modern agricultural methods and farming practices. Potatoes and carrots were grown here, and Abu Dhabi saw a ~~£~~ \$ five times increase in their supply of food and carrots, as well as other crops. Therefore, the increase in food supply can be seen by how Abu Dhabi, with an ~~are~~ increasing struggle to feed its people due to the increasingly demanding physical conditions, was able to solve their potential food shortages by using a redistribution of land strategy. However, this does not solve the ~~major~~ problem of need ^{to} ~~increase~~ increase food supply, and the ^{low} sustainability of ~~these~~ this method is seen through the fact that the government are trying to reduce the potential of food riots in order to maintain their current government and not ~~be~~ be overthrown, which was seen in ~~200~~ the ~~2008~~ ~~food~~ 1977 food riots in Egypt under Sadat. If the purpose of the land grab is to prevent a revolution (which was a root cause of the 2011 Arab Spring in Tunisia), then these practices only temporarily increase supply in Abu Dhabi, but in the long term the land is still belongs

to Sudan, and growing problems are likely to be seen as Sudan's population also increases and demand for the land for agriculture also increases. Therefore, land grabs are not a long term strategy for improving food supply, because ultimately, ~~that~~ the net gain of food supply is zero.

4.4. Practical Action:

Practical Action are a UK based NGO that operate in LIC countries such as Sudan, in order to attempt to increase people's food supply. ~~These methods also provide~~ ~~their methods are~~ They work with local communities and attempt to physically educate them about how to ~~to~~ improve their food storage techniques, such as by using Zeers, which are clay pots and allow for longer storage of food hygienically. Their methods have seen a four times increase in the storage of crops they produce such as tomatoes, meaning that during times of drought or in low crop yield seasons, locals have a source of food. ~~it doesn't~~ It also encourages farmers to produce a surplus of food that can be safely stored for later. Practical Action also teach locals how to build earth dams, ~~to~~ which allows low cost water storage strategies ~~to~~ so that locals have a water source during drought times. This doesn't necessarily increase food supply, but ~~it~~ is a method of

how, in ~~these~~ desperate times during harsh environmental conditions, people can still have access to food.

4.5. The Trussell Trust:

The Trussell Trust is ~~another~~^a UK based NGO that has a network of over 250 food banks around the UK, where over 1 million users ~~access their system~~ use this system. It is not a method of trying to improve food supply, but it is instead attempting to solve income inequality, given that over one-quarter of UK households have less than £100~~000~~ in their savings in total.

Many ~~of~~ of these users are from what is known as 'the working poor' and from people on zero-hours contracts. The problem ~~is~~ of the lack of food supply for these people has arisen from the post-2008 quantitative easing policy of the government, which has drastically driven land ~~prices~~ and housing prices up, while wages have remained at a slow growth at 2% per annum - which is not enough to support them while they have a mortgage and utility bills to pay for. This means that people are forced to turn to food banks, where they ~~can~~ receive food vouchers issued by the government and can retrieve their food. However, although this allows people short term access to food, it does not improve the overall supply of food, and only accounts for a redistribution of food.

5. Conclusion:

In conclusion, we have explored a range of methods, strategies and technologies used to attempt to improve food supply. The ~~green~~ Green Revolution has proved effective at providing 1 billion people with food and saving them from starvation, but at the same time, since only a few crops are mass produced, many people lack vitamins and minerals in their diet. Nonetheless, the Green Revolution is a suitable example of how technology and HIC methods can be used to improve food supply - The Aswan Dam has a similar method, ~~but~~ and so far has allowed for a greater food supply in the Nile.

This contributes to the argument that technology is a reliable and therefore best way to ~~improve~~ ^{increase} food supply, as the limitations exist on the provision of food security, but food supply is increased. On the other hand, land grabs ~~do not~~ improve food supply only for the country using the land, but overall there is a net zero gain in supply, and only accounts for a redistribution. That being said, there is an argument to suggest whether a redistribution would be the best way to ~~improve~~ ^{increase} food supply, evident by the 1992 EU Common Agricultural Policy, where European farmers are paid \$ USD \$19,000 annually to ~~not~~ not produce food in order to not overload the market and drive food prices ~~to~~ too low, resultant of which

there is adequate supply which outweighs the demand. ~~Rational Action~~ Practical Action looks at ~~the~~ the storage of food given that enough ~~is~~ is already being produced, while the Trósel Trust also aims to solve the redistribution problem.

Therefore, the best way to improve food supply would be to improve the redistribution of food, as increasing the production of food may ~~cause~~ ~~from~~ act as an incentive to not produce food if they are not going to receive a suitable income for it. As previously mentioned, there is 17% more food produced per person - if there was a redistribution of this food, there would be a ~~reduced~~ need to increase supply.

Examiner comments:

INTRODUCTION - DEFINING AND FOCUSING ON QUESTION

4 marks / Level 2

As many do, this report also begins with a carefully learnt definition although the candidate is clearly a little unsure what exactly they are defining perhaps spotting late that the title identifies food supply and not food security. They also supply useful data to give an outline of the problem. In their discussion of the title they also introduce an alternative explanation of the 'best way to improve food supply'; namely 'redistribution of food'. The four pillars are suggested as a framework which is both 'explicit and appropriate. This is a Level 2 response which would be elevated to Level 3 with a little more attention to deconstructing the title.

RESEARCH KNOWLEDGE

12 marks / Level 3

This was also a well-researched report that provided a strong platform for the student to embark on thoughtful analysis. There is a good deal of data and thoughtful comment interlaced with the factual material on both the Green Revolution and the Aswan dam in particular also providing a 'wide range' of case-study evidence which was 'relevant' and both 'accurate and topical'. Theoretical grasp is perhaps less convincing in places; for example the Boserupian response to Malthusianism is only partially explored in that population pressure is a necessary stimulant to technological innovation. However, the range of ideas covered is impressive.

ANALYSIS, APPLICATION AND UNDERSTANDING

15 marks / Level 3

The analysis is, as with the Option 1 response at the top of Level 3 but lacks the coherence of argument and, above all the appreciation of different perspectives that characterise Level 4 answers. For example the analysis of the Green revolution omits the well-known and much publicised criticism of the south-Asian experience as concentrating power into the hands of landlords and exacerbating the already grotesque inequalities in these communities given that green revolution seeds and the accompanying technology is expensive. The consequential rural indebtedness has increased food insecurity for many. There are other examples; the impact of the Aswan project on salination levels in the Nile valley being one obvious lost opportunity to point out that increased supply in one region might lead to decreased supply elsewhere. This candidate produces some very thoughtful material; the impact of quantitative easing on the housing market being an especially sophisticated argument but they occasionally have to work quite hard to make the link to food supply rather than distribution; albeit an issue acknowledged by this candidate.

CONCLUSION AND EVALUATION

10 marks / Level 2

The concluding section of this report begins on page 13 and is largely a repeat of previous material drawn from each of the case-study sections. Both the Green Revolution and the use of large dams for irrigation projects, specifically the Aswan High dam are endorsed as positive evidence for the efficacy of technology as the 'best way to increase food supply'. However the candidate then introduces the case of EU subsidies to suggest that redistribution is actually a more productive route to tackling food supply. This is new material and the first mention of CAP. Methodologically this is unfortunate and combined with an absence of any evaluation it impacts on the mark for this section which is placed at the top of Level 3.

QUALITY OF WRITTEN COMMUNICATION, METHODOLOGY AND SOURCING

4 marks / Level 2

This is another well-organised piece with generally high standards of SPaG and specialist terminology as well as a clear report style presentation. However, there is little referencing and the rationale/methodology used for evidence selection is not apparent. That is especially obvious in the introduction of new 'evidence' in the conclusion.

Example 3 – OPTION 3: Cultural Diversity: People and Landscapes

- 3 Evaluate the view that traditional and indigenous cultures should always be protected from the impacts of globalisation.

(Total for Question 3 = 60 marks)

Mark scheme

Indicative content

The focus of this title is the socio-political attitudes to indigenous peoples within modern nation states and whether or not 'they' either need or desire protection from globalisation.

The framework chosen may be by the following:

1. Case studies of different societies/places with contrasting histories of their indigenous populations – a place by place approach.
2. Some might take a temporal approach, tracing changes over time across a range of examples, for example the attitude towards Native Americans from colonial times to the present day.

Key analytical points

- Historically, indigenous cultures have been held in little regard and systematically extinguished, which has continued in modern times in some societies – Indonesia.
- Distinctions were drawn between 'savages' and 'civilised' peoples, which were especially powerful during the scramble for Africa and have a legacy of attitudes to indigenous culture(s).
- The most powerful arguments today revolve around the economic exploitation of indigenous landscapes from the Oriente to the Arctic – in many cases indigenous peoples are either displaced or their culture impacted irreparably.
- Globalisation has led to a significant erosion of distinctive local cultures through the impact of trade, tourism and development.
- Protecting local cultures may preserve important aspects of the cultural heritage of modern nation states.
- Counterarguments might suppose this to be an inevitable process of globalisation.

In summary

- There is a whiff of colonial arrogance in the title – a more appropriate view (question) would be whether indigenous peoples should be afforded the right to some protection, if they so choose.

Case studies used are likely to include:

1. Australian 'aboriginal' people
2. Native American cultures – e.g. the impact of tar-sands and pipelines
3. Native American rights in the Andes – 'plurinational' state of Bolivia
4. Minority rights in Indonesia (East Timor).

Student response:

~~Evaluate the view that~~

Plan: intro: globalisation

impacts: destruction / differently
indigenous cultures dep.

Focus: 3 case studies

Sources

news

report

university

documentary

website

~~from~~

Analysis:

impact:

~~TOUGH~~ TOURISM

impact: migration

impact: trade

they're killing us

public opinion

~~too~~ soldiers + tanks.

logging

core: values & cultural

~~varied art~~

evaluation: varied attitudes / forms of global.

- tech

- narrow focus

Evaluate the new that traditional cultures and indigenous cultures should always be protected from the impacts of globalisation

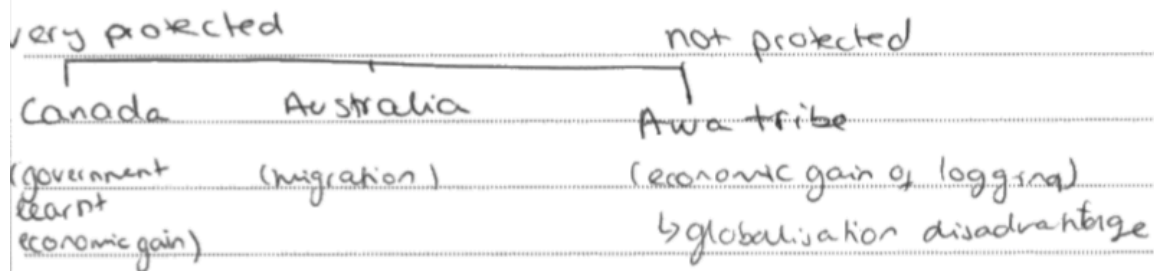
Intro:

Globalisation is the integration of political, economic, religious, social and cultural systems. It has been affecting indigenous cultures since ~~1992~~ it started, but to each country in a different way. Indigenous cultures are cultures originating from a particular country (natives). Players like governments and TNCs have had a big effect on the ~~new~~ level of destruction of each.

Focus:

In order to evaluate to what extent indigenous cultures should be protected, 3 case studies of different economic levels will be analysed, ~~to~~ assessing as well its level of destruction. These 3 will be affected by different factors, for example Canada's cultures are affected by tourism, Australia by migration and Brazil by trade.

Framework:



Background:

Tourism: travelling to cultural and historic attractions to learn about the past in an enjoyable way. (oxford dictionary)

Cultural protectionism: conscious and interventionist attempt to promote cultural production and limit foreign cultures on a domestic audience (Faran et al.)

Cultural assimilation: ~~the~~ being part of, or making something part of a society, / group / country. (cambridge dictionary) (dictionary.cambridge.com)

Cultural insensitivity: being unaware of cultural differences (redshoemovement.com)

Time-space compression: involves globalisation creating a 'shrinking world', also known to bring places together and reduce relative distances.

Commodification: the fact that something is considered as a commodity (a product that can be sold or bought) (cambridge dictionary.com)

Methodology

Case study

Canada → Moose First Nations

Sources

• ryerson.com

• journals.opedition.com

• opentextbc.ca

Australia → aboriginals

• aboriginalheritage.com

• perthjima.com

• theguardian.com

• creativespirits.com

Brazil -> Awa or tribe

• survivalinternational.com

• Tribal Channel

• theguardian.com

• independent.com

Source

Reliability

newspaper

- highly unreliable as have a sensationalist objective, therefore evidence might have been exaggerated. Also because objective to sell, ~~meaning that~~ it has a narrow focus as only show one side of argument.

Report / NGO

- reliable as information from first hand, however if information is from long time ago, ~~reliable~~ it might be outdated

University journal

- reliable as we can know where information came from, and it also has a wide focus, as well as being peer reviewed. However, ~~it's~~ Out of date as information can't be updated.

Documentary

- Unreliable as it is sensationalist and aims to transmit a message to the public. However information from first hand can increase ~~the~~ reliability.

Websites (official from tourism)

- reliable as easy to keep updated, however it is difficult to know ~~the~~ the reliability of information as there are no references of where it came from.

Analysis -

Tourism - ~~Brazil~~ Canada
Moose Cree village in Canada

The ~~Awa~~ tribe in Brazil has been impacted by globalisation through the form of tourism, due to the government's objectives to expand this market.

The government in Canada has aimed to protect this indigenous culture by ~~having~~ exploiting its economic gains at the same time. This is proven because, according to cybers.com, the government created cultural meeting spaces for these peoples to meet. This culture is protected because this way they ensure that their ideologies don't fade away and also it helps improve the tourism market.

Sonya Grazi in his webpage stated that ~~they~~ they managed to "promote cultural protection whilst benefitting from their traditions and customs". However, instead of the culture being protected, it could be seen as ~~not~~ transformed into Western culture, as these central meeting spaces aren't originated by ~~the~~ the Moose tribe, as it's been created by the government promoting a fake culture.

Another way the government in Canada has protected them is by providing Ecotourism. This is being held through producing their utilities and products through mass ~~market~~ ^{production}. In a way it is good for them because they receive help to be able to develop independently from the government, according to a

through story telling (paritjima.com). These stories were forgotten by the children and therefore not passed on, creating a complete erosion of his culture, very hard to recover.

However, his process of assimilation wasn't successful as the British colonials had racist attitudes towards them, not allowing them to integrate correctly. As a result, nowadays 48% of the young people in custody come from the aboriginals, and the prime minister Kevin ~~Haris~~ Stated 'we are facing an Indigenous culture epidemic'. This is due to the cultural insensitivity that ~~was~~ these people suffered, which is having an effect ~~on~~ hundreds of years later. Moreover, for British colonials this land was considered as Terra Nullus meaning no one's land. ~~So~~ Therefore, they thought they were saving people, ^{the lower} ~~from~~ helping them develop.

Sub-conclusion

This proves ~~that~~ that indigenous cultures should always be protected as globalisation is the main cause of the destruction due to increase in migration. If the aboriginals had been protected in the past, no effects would be occurring now such as the ~~and~~ increase of criminals nowadays in Australia.

Tra

⊗ This also leads to commodification, selling their products as souvenirs to tourists, without taking into account the cultural meaning.

Trade - Brazil

The Awa tribe, located in the Amazon, has been reduced from 5,000,000 to 355 (the guardian.com) due to the cultural insensitivity of loggers and TNCs exploiting the rainforest. This is an effect of globalisation because it has been caused by the time-space compression, creating an increase in demand for products and energy from the Amazon. This According to Survival International ~~the~~ For example, ~~was~~ a project called The Greater Carajás Project was set to build tarmac roads and extract iron ore, causing 1/3 of their land to be destroyed. ~~The~~ One of the directors of Survival International stated in 2012 that Brazil hadn't taken care correctly and its solutions had been started too late.

Solutions for the Awa tribe protection were developed. Things like closing up 14 sawmills and placing soldiers, helicopters and tanks in order to avoid illegal logging. The tribe has announced that 'without the rainforest, we can't feed our children, and we will die', showing the value that the rainforest has for them. ~~As~~ Stephen Curry said that 'public opinion can effect change' as huge ~~plans~~ campaigns were held against the Brazilian

government which ~~or~~ was said to not have made enough to promote protection.

Sub-conclusion.

This tribe needs immediate help to be protected, as ~~to~~ it is considered the World's most ~~at risk~~ endangered tribe. Due to the time space compression, this tribe ~~need~~ has been ~~on~~ nearly completely destroyed and ~~major~~ ~~step~~ by the increase in demand of products.

Conclusion:

Overall, ~~this~~ ~~and~~ through this analysis, we can conclude that all indigenous cultures need to be protected in ~~to~~ different ways from globalisation, as different values were placed by governments and other players. For example, in Brazil the economic gains of logging was put higher than the cultural value of the tribes, leading to an ~~attid~~ attitude of cultural insensitivity, destroying ~~our~~ land. However, other countries have learnt the economic gains that indigenous cultures have, and how to get the ~~mean~~ whilst promoting protection. In Canada the government managed to identify this opportunity, attracting investors and 1500 ^{tourism} businesses ~~to~~ ~~protect~~ in ~~time~~ to protect them from globalisation. ✂

Evaluation:

Even though this analysis concluded that indigenous and traditional cultures have been negatively affected by ~~varied attitudes and~~ by globalisation, and its forms of protection, many other factors should be considered to have a more accurate conclusion. All countries have varied attitudes ~~and~~ affecting varied forms of globalisation, meaning that instead of 3 case studies, various of the same economic level of development should be analysed to eliminate external variabilities. Moreover, only emerging and developed countries have been analysed, ~~which~~ therefore examples of developing countries should also be included to view the different effects and successes of protection.

Additionally, the articles analysed have a narrow focus, which means more academic articles should be analysed to obtain an overall view, as well as improving the reliability of the information and increasing the amount of up-to-date facts. Apart from up-to-date articles, technology is increasing the time-space compression, which means that information is each time quicker and quicker outdated, ~~then~~ reducing the accuracy. For example in articles of Brazil, the amount of sawmills closed ~~increased~~ ~~has~~ doubled ^{from one} ~~to~~ ^{the} article.

to someone written 3 months later.

Continued conclusion.

* However, ~~sometimes~~ the meaning of protection varies depending on the attitudes, and instead of actually protecting, it's slowly destroying a culture without rehabilitating it, ~~for~~ such as the Canada aborigines. This might not be caused by the government, but by the indigenous peoples' own choice.

Examiner comments:

INTRODUCTION - DEFINING AND FOCUSING ON QUESTION

4 marks / Level 2

This introduction is dominated by a relatively comprehensive 'background' list of definitions' which are not, for the most part, in any way contextualised in terms of the question asked. The key terms, 'globalisation' and 'indigenous cultures' are adequately if simply introduced. The focus is explicitly identified as a case-study led approach to illustrate different pressures on indigenous cultures and different attitudes to those cultures. As with the introductions to Options 1 and 2 rather more attention to the key contention of the title would elevate this to Level 3. Perhaps something on the implications of 'always'.

RESEARCH KNOWLEDGE

13 marks / Level 3

This report uses a narrower range of case-study examples than either the Option 1 or Option 2 candidates. However they are especially strong in offering qualitative material that they subsequently analyse effectively to address the contention in the title. The choice of three different aspects of globalisation is helpful and keeps the focus tightly on the relationship. There are places where more numeric data and more context would be useful. Candidates would be well-advised to remember that examiners might need a little background information to help them follow the argument. Nonetheless this section was comfortably in Level 3.

ANALYSIS, APPLICATION AND UNDERSTANDING

16 marks / Level 4

There is a very healthy use of argument and counter-argument in this section of the paper. Although the candidate is not always as fluent as the Option 2 they are, perhaps, more alive to the potential weaknesses of taking on one position a supposed to another. This is evident throughout the analyses but notable in the section on the treatment of indigenous culture(s) in Canada. The recognition that the introduction of a market economy might be a double-edged sword is well handled. Where it and other 'case-studies are not so impressive is in the application of this information to the main proposition in the title; that is to say whether or not such cultures should 'always' be protected from the impact of globalisation. Similarly there is not enough attention paid to how exactly globalisation causes these conflicts – the link between the spread of development and 'capitalism' to globalisation is not securely made. In a challenging title the lack of clear focus on these links was not uncommon with too many leaving the case-studies to speak for themselves. This candidate does more than that and with tourism such a self-evident consequence of globalisation enough ground was covered to satisfy the Level 4 descriptors.

CONCLUSION AND EVALUATION

13 marks / Level 3

The conclusion to this report is spread across the chosen case-studies and pulled together at the end with thoughtful is rather brief summary. Once again there is a failure to address 'always' other than in the sense that if one does not 'always' afford them some protection indigenous cultures may very well disappear altogether or at least be unrecognisably transformed. Whether or not that is a bad thing in itself is not covered. It is in these areas that the top end of the candidature show their adaptability to the title that they are asked to address rather than simply offering largely pre-prepared conclusions based on the pre-released materials.

QUALITY OF WRITTEN COMMUNICATION, METHODOLOGY AND SOURCING

4 marks / Level 2

As with the reports for Options 1 and 2 this is well-organised and coherent but, once again, not referenced sufficiently well nor coherent enough to warrant a level 3 mark. This is despite a long and thoughtful evaluative section which certainly addresses partiality.

Example 4 – OPTION 4: Human Health and Disease

- 4 'Successful management of all health risks must include global as well as national strategies.' Discuss.

(Total for Question 4 = 60 marks)

Mark scheme

Indicative content

The focus of this title is the efficacy of various management strategies FOR health risks and the relative importance of global management.

The framework chosen may be by the following:

- Different players in the management of health risks.
- Different types of health risk and the role of various management systems in addressing those risks.

Key analytical points

- Health risk can be expressed in two dimensions – geographic extent and threat to individuals.
- The best, indirect measures are probably life expectancy and DALYs, which offer a way of evaluating success.
- The impact of major health risks is largely determined by poverty and limited access to basics such as clean water and sanitation, which can be addressed on several scales.
- Management needs deconstructing carefully as does the evaluation of 'success', and includes global, national and local schemes.
- Global management is most often associated with pandemics that have significant and sometimes catastrophic impacts on human health.
- This extends to global pollution issues – for example the global agreements to control ozone depletion.
- Global management might also extend into economic policies to address poverty.
- However, very many health risks are inherently local and need local solutions – this will include the application of global plans, which are often advisory rather than practical.

In summary

- Global management is significant but certainly not essential to the management of health risks – global management is never more than advisory and thus limited and many health risks are local.

Case studies used are likely to include:

1. Global management of disease management – polio, smallpox
2. Local management of primary healthcare, e.g. mosquito nets
3. The role of pharmaceutical TNCs
4. NGOs operating in South Asia and Sub-Saharan Africa.

Student response:

'Successful management of all health risks must include global as well as national strategies'

Discuss.

~~This report will analyse both~~

Introduction:

This report will analyse both global and national strategies at managing all health risks around the world. Different case studies of ~~the~~ developed, emerging, and developing countries will be used to evaluate the management of health risks. Case studies that have ~~will~~ been researched for this report include: France, Sierra Leone, Qatar, and Kenya.

Framework:

Case Study	Level of Development	Type of Strategy	Health risk
France	Developed	National - PREPA	to tackle air pollution
Sierra Leone	Developing	Global - USAID	to combat infectious disease - eg. TB, Malaria.
Qatar	Emerging	National - NHS - National obesity Treatment centre	Lifestyle disease - Obesity
Kenya	Emerging - Developing	HRH strategy - Supported by WHO and National and USAID - Global	To combat the HIV/Malaria/TB, and rises in other NCD + CD trends

All research obtained for this report comes from reliable websites ending in either .gov, .org, or .edu etc. Sites ending in .com have been avoided to avoid a difference in political opinion and biased information. All research obtained for this report is factual and neutral.

French national Health Strategy to manage Air pollution - PREPA.

PREPA is a National Health Strategy that aims to manage and reduce national air pollution emissions by 2020. The national plan is a decree that has been signed by 8 ministers, ~~and~~ of 2017, and has been overlooked and signed by the Minister of Environment in France. ~~With~~ With air pollution killing over 48,000 people in Paris each year, the plan comprises to aim at areas such as: Industry, Residential-^{and} tertiary ~~and~~ agriculture. ~~With~~ The plan aims to reduce Sulphur dioxide emissions, ~~ammonia~~ ammonia emissions, Atmospheric particulate matter, as well as nitrogen oxides that pollute the air.

The plan has aimed to reduce all emissions by an average of 20% by 2020. The plan has gained much national interest of the civilians of France and has already met its 2014 emission reduction targets of a 2% decrease in fine particulate matter in France.

For PREPA to be fully effective, it will need the support and action of French people, which is already proven successful due to pollution trends decreasing. An HIC, such as France has benefited from the use of a national strategy such as PREPA, as even respiratory related deaths have decreased as much as 15%. ~~However~~ ^A HIC such as France would not have benefited as much from a Global Strategy, possibly due to a lack of understanding of the national pollution crisis. Furthermore, France has the financial means and stability to manage its own health risks and therefore does not need to resort to the funds ~~of the UN~~ and support of foreign aid like an LIC such as Sierra Leone would.

Cited works:

ecologique-solidaire.gouv.org

~~Sierra Leone~~ Sierra Leone Global Strategy to Manage the Spread of infectious disease - USAID

USAID stands for the United States Agency International Aid. The governmental aid, owned by the government of the USA has gained a position of being one of the world's ~~main~~ main sources of foreign aid.

The USAID led global strategy to ~~decrease~~ ^{manage} the spread of infectious disease aims to aid those in need of sanitation, and people with neonatal diseases, waterborne diseases, and other communicable diseases such as Malaria and Tuberculosis.

The USAID strategy has particularly aided Sierra Leone in 2014-2015 after the outbreak of Ebola. The outbreak caused doctors and nurses to direct most of their attention to people suffering from Ebola, and funds, medicine, and overall medical attention for people with other infectious diseases such as Malaria and Tuberculosis were

ignored. Thus, trends of other ^{communicable} diseases plummeted around the 2014-2016 period.

USAID efforts managed this health crisis in Sierra Leone by increasing sanitation, and with a budget of \$2.7 billion, they managed to increase the quality of health by rehabilitating the lives of those affected in Sierra Leone. Trends of Malaria have decreased by almost 30% as well as other infectious diseases.

As Sierra Leone is an ~~underdeveloped~~ LDC, foreign aid was necessary to its improvement of medical care in the country. National approaches to managing the health crisis proved to be failing, and that's why USAID intervened, also promoting charitable donations through goodwill ambassadors. Overall the Global Strategy proved to be very effective, and the health dynamic of the country would not have improved until the Global Strategy of USAID was in place.

Cited works:

USAID/Sierra-Leone.gov

Qatari National Strategy to manage Obesity - National Treatment Centre of Obesity

Qatar is ~~to~~ considered to have ~~the~~ ^{one of} the world's fattest nations ~~is~~ with over 70% of its people being overweight, and 80% of nationals being obese. Due to this, the National Health Strategy, started by the government has put in place a national treatment obesity treatment centre to treat those suffering from obesity. ~~and~~ Signed by the Minister of Health of Qatar, ~~and~~ the centre has been put in place and treats people already.

The National Treatment Centre of Obesity treats many obese people and has trained physiologists, doctors, and nurses to help the people. Balloon surgeries are performed, as well as gastric band procedures to help the curing of Obesity. The treatment centre predominantly ~~is~~ treats individuals

under the age of 20, and has had many successful procedures.

However, due to the implementation of this national system, it can be argued that rates of succession would be higher if the national strategy was not only aimed at people who are obese, but rather the nation as a whole, such as the French national strategy of: PREPA. By focusing on the whole population, the obesity trends of Qatar are likely to decrease.

Cited works:

hamad.qa

Kenyan National and Global Strategy to manage HIV/Malaria/TB + trends in CD+NCD'S - HRH Strategy.

The Human Resources of Health Strategy (HRH), supported by USAID and WHO, is a National and Global ~~prog~~ strategy that aims to decrease the trends of communicable and non communicable diseases.

HIV:

HIV was first discovered in Kenya in 1980 at approximately 440,000 cases in total, this has risen to over 1.5 million people as of today. HIV is one of the largest diseases in Kenya and has been managed in recent years to decrease trends of HIV. Statistics show that HIV ~~has~~ ~~been~~ ~~found~~ ~~from~~ ~~management~~ has increased and has proven effective as only around 5.9% of tested patients are transmittable compared to 40% in the past.

TB:

- Due to rising immunodeficiencies from diseases such as HIV, TB trends have increased.

Malaria:

- Malaria is most prevalent in areas that are next to lakes, and attention from the APH strategy was aimed there first. Malaria mainly affects children under the age of 15 years old and therefore immediate action was

done to respond to this •

The HRH Strategy, supported by the WHO and USAID has improved the lives of many Kenyans as trends of diseases have decreased.

With the intervention of a Global Strategy, Kenya was able to achieve much more of its aims rather than if they were to tackle the crisis nationally.

As an emerging/developing country foreign, Global Strategies were the country's best option for improving HIV/Malaria/and TB trends particularly.

The HRH Strategy follows the aims set up by the Kenyan ^{Health} ~~Indicators~~ ~~Indicators~~ ~~Indicators~~ KHSPP II which was supported by WHO + USAID. The merging of these strategies has proven to be beneficial to Kenya and provide them with a successful and achievable health plan.

cited works:

WHO.gov

KNP/HRH-plan.gov

USAID.gov

Conclusion:

Global strategies have proven to be very important in this report, as well as national strategies at aiding all health risks. Although national strategies have the advantages of personal governmental approach and interest as well as a more likely sustainable result, only developed countries can afford this type of approach, such as France. Developing countries such as Sierra Leone benefit much more from global strategies that provide foreign aid as they do not have the means of providing effective national aid. The level of development of countries will be the ultimate factor of deciding which strategy to use. Therefore, the successful management of health risks must include global strategies for LIC's such as Sierra Leone as national strategies are less effective for LIC's.

Examiner comments:

INTRODUCTION - DEFINING AND FOCUSING ON QUESTION

2 marks / Level 1

This is the weakest of the four scripts in this section. The 'Introduction' is pre-prepared as are so many given the pre-release steers offer clear indications of the likely focus of the question if not its precise contention. In this rather brief introduction the title is not referenced directly, nor is there any explicit focus identified. A litmus test of all introductions is to identify how and where the candidate edits their carefully prepared set of definitions and introductory statements in the light of the title which they have just seen for the first time. In this case one might have expected something on the criteria for successful management; how is this to be assessed?

RESEARCH KNOWLEDGE

11 marks / Level 3

There is a good deal of detail provided by this candidate about a number of management strategies. That detail was sufficient to elevate the mark for this section into Level 3. However, there are some issues concerning the, legitimacy of the categorisation of, for example, the Sierra Leone material as a 'global' strategy. Most of the material offered here concerns the efforts of global agencies (USAID in this case) in a national/local context. However, there is a good deal of material here across a range of scales although a little lacking in any theoretical context. That lack of context is, of course, an issue in the next section of the mark scheme.

ANALYSIS, APPLICATION AND UNDERSTANDING

14 marks / Level 3

This candidate, not untypically of those operating at the mid-ability range of the candidature level is less adept at the higher cognitive skills of analysis and evaluation, than they are at conducting the basic research. This analysis is best described as a series of assertive statements that vary in the degree to which they have evidential support. There is a loss of focus on the question asked and only rarely do they address the question head-on. The best elements of this higher level of analysis are probably found where the candidate compares PREPA with the situation faced by an LIC such as Sierra Leone. However, this still limits the interpretation of the title to one concerning the need for international aid rather than an international management strategy because the threat is 'global'. This candidate misses the opportunity to contrast Qatari obesity which can obviously be tackled nationally and poses no threat to other nationalities and an infectious disease such as Ebola which does. In many other places in this report there are missed opportunities to analyse reasonably well-researched data.

CONCLUSION AND EVALUATION

8 marks / Level 2

Whilst most candidates have, quite rightly, adopted the useful habit of writing mini-conclusions and, sometimes on-going evaluation it remains vital that these threads are drawn together into a meaningful conclusion that is supported by the analysis offered. Obviously relatively weak analysis impacts on this section, as it does here.

There is really only one point made and that is that development is the key. Only 'developed countries' can 'afford' the 'personal government approach' whilst less developed countries such as Sierra Leone 'do not have the means of providing effective national aid'. Both strategies are asserted to be 'very important' at 'aiding all health risks'. Ultimately there may be issues here regarding the deconstruction of the pre-released steers which, in the case of this candidate take a very narrow reading of 'health risks'.

QUALITY OF WRITTEN COMMUNICATION, METHODOLOGY AND SOURCING

4 marks / Level 2

This is a well-organised report which perhaps exhibits less confidence with specialist terminology than the other three exemplars used. However, the SPaG is strong although once again there is a lack of referencing and, in this case, limited evaluation too. But, with some Level 3 characteristics this pulled it up to the top of Level 2.