

OXFORD

INTERNATIONAL
AQA EXAMINATIONS

INTERNATIONAL AS GEOGRAPHY GG02

Paper 2 Human Geography 1

Mark scheme

June 2022

Version: 1.0 Final



Mark schemes are prepared by the lead assessment writer and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation events which all associates participate in and is the scheme which was used by them in this examination. The standardisation process ensures that the mark scheme covers the students' responses to questions and that every associate understands and applies it in the same, correct way. As preparation for standardisation each associate analyses a number of students' scripts. Alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, associates encounter unusual answers which have not been raised they are required to refer these to the Lead Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of students' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

Further copies of this mark scheme are available from oxfordaqaexams.org.uk

Copyright information

OxfordAQA retains the copyright on all its publications. However, registered schools/colleges for OxfordAQA are permitted to copy material from this booklet for their own internal use, with the following important exception: OxfordAQA cannot give permission to schools/colleges to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Copyright © 2022 Oxford International AQA Examinations and its licensors. All rights reserved.

International AS Geography mark scheme

How to mark

Aims

When you are marking your allocation of scripts your main aims should be to:

- recognise and identify the achievements of students
- place students in the appropriate mark band and in the appropriate part of that mark band (high, low, middle) for **each** Assessment Objective
- record your judgements with brief notes, annotations and comments that are relevant to the mark scheme and make it clear to other examiners how you have arrived at the numerical mark awarded for each Assessment Objective
- ensure comparability of assessment for all students, regardless of question or examiner.

Approach

It is important to be **open-minded** and **positive** when marking scripts.

The specification recognises the variety of experiences and knowledge that students will have. It encourages them to study geography in a way that is relevant to them. The questions have been designed to give them opportunities to discuss what they have found out about geography. It is important to assess the quality of **what the student offers**.

Do not mark scripts based on the answer **you** would have written. The mark schemes have been composed to assess **quality of response** and not to identify expected items of knowledge.

Assessment Objectives

This component requires students to:

AO1	Demonstrate knowledge and understanding of places, environments, concepts, processes, interactions and change, at a variety of scales.
AO2	Apply knowledge and understanding in different contexts to interpret, analyse and evaluate geographical information and issues.
AO3	Use a variety of relevant quantitative, qualitative and fieldwork skills to: <ul style="list-style-type: none"> • investigate geographical questions and issues • interpret, analyse and evaluate data and evidence • construct arguments and draw conclusions.

The marking grids

Do not think of levels equaling grade boundaries.

Depending on the part of the examination, the levels will have different mark ranges assigned to them. This will reflect the different weighting of Assessment Objectives in particular tasks and across the examination as a whole.

Using the grids

Having familiarised yourself with the descriptors and indicative content, read through the answer and annotate it (as instructed below) to identify the qualities that are being looked for and that it shows. You can now check the levels and award a mark.

Step 1 Determine a level

Start at the lowest level of the mark scheme and use it as a ladder to see whether the answer meets the descriptors for that level. The descriptors for the level indicate the different qualities that might be seen in the student's answer for that level. If it meets all the descriptors for the lowest level then go to the next one and decide if it meets this level, and so on, until you have a match between the level descriptors and the answer. With practice and familiarity you will find that for better answers you will be able to skip through the lower levels of the mark scheme quickly.

When assigning a level you should look at the overall quality of the answer and not look to pick holes in small and specific parts of the answer where the student has not performed quite as well as the rest. If the answer covers different aspects of different levels of the mark scheme you should use a best-fit approach for defining the level and then use the variability of the response to help decide the mark within the level.

Step 2 Determine a mark

Once you have assigned a level you need to decide on the mark.

It is often best to start in the middle of the level's mark range and then check and adjust. If there is a lot of indicative content fully identifiable in the work you need to give the highest mark in the level. If only some is identifiable or it is only partially fulfilled, then give the lower mark.

The exemplar materials used during standardisation will also help. There will be an answer in the standardising materials that will correspond with each level of the mark scheme. This answer will have been awarded a mark by the lead examiner. You can compare the student's answer with the example to determine if it is of the same standard, better or worse than the example. You can then use this to allocate a mark for the answer based on the lead examiner's mark on the example.

You may well need to read back through the answer as you apply the mark scheme to clarify points and assure yourself that the level and the mark are appropriate.

In addition to the levels descriptors, question specific indicative content is provided as a guide for examiners. This is not intended to be exhaustive and you must credit other valid points.

An answer that contains nothing of relevance to the question must be awarded no marks.

Annotating scripts

You should write a summative comment at the end for each Assessment Objective and indicate the marks for each Assessment Objective being tested at the end of the answer in the margin in sequence. It is vital that the way you arrive at a mark should be recorded on the script. This will help you with making accurate judgements and it will help any subsequent markers to identify how you are thinking. Please do not write negative comments about students' work or their alleged aptitudes.

Section A – Global Systems and Governance

Total for this section: 40 marks

Question	Part	Marking guidance	Total marks
01	1	<p>Which of the following is the correct statement about the Atlantic Ocean?</p> <p>Key – B: It is surrounded by four different continental coastlines.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
01	2	<p>Which of the following describes a typical feature of <u>all</u> transnational corporations (TNC)?</p> <p>Key – A: They have global communication and transport links between the workplaces they own.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
01	3	<p>Which statement summarises the role of the United Nations (UN) in global governance?</p> <p>Key – D: To promote international peace and security.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
01	4	<p>Which of the following is an example of <u>political</u> interdependence?</p> <p>Key – D: Trade agreements between governments of different countries.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
01	5	<p>What is a volcanic arc?</p> <p>Key – A: A chain of volcanic islands that form above a subducting tectonic plate.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
02		<p>Figure 1 shows the top 20 destinations of mainland Chinese and Indian migrants.</p> <p>A migrant is a person who has moved to another location to live.</p> <p>Analyse distributions shown by data in Figure 1.</p>	<p>6</p> <p>AO3=6</p>

Level	Marks	Descriptor
2	4 – 6	AO3 – Clear selection and analysis of the evidence that has been provided which makes appropriate use of data to support. Clear connections between different aspects of the data.
1	1 – 3	AO3 – Some basic selection and analysis of the evidence that has been provided which makes limited use of data to support. Basic or limited connections between different aspects of the data.
0	0	No creditable content.

Indicative Content

This question requires analysis of a proportional symbol data map showing the top 20 international destinations for Chinese and Indian migrants overseas. Analysis could include comparison of the data and locations, as well as identification of the key differences and trends for higher marks. There should also be use of specific data manipulation to identify differences for maximum marks.

AO3

- The Chinese migrant data appears larger overall, but in more specific areas, with the Indian migrant data being more globally spread out.
- There are 32 countries with migrant figures. Both countries are represented in seven of them, which is less than a quarter of countries represented.
- In the seven locations where both countries are represented, the Chinese migrant figures are higher in all but one location, the United Kingdom.
- The Indian migrant data has a bigger global spread, with representation in all major continents and regions, whereas Chinese migrant data is only in two thirds and is more centralised in South East Asia.
- There is Indian representation in seven countries within the Middle East and Africa, whereas there is none from China.
- The location with the highest amount of Chinese migrants is Indonesia with 7.67 million. This is more than triple the amount of the highest location of Indian migrants which is the United States with 2.25 million.
- More than a quarter of Chinese migrant locations have more Chinese than the highest Indian location (the United States with 2.25 million).
- The country with the lowest amount of Indian migrants is Guyana with 0.32 million whereas the country with the lowest amount of Chinese migrants is India with 0.19 million, almost half the amount.
- The range of amounts for Chinese migrant figures is 7.57 million, whereas for India it is 1.93 million, less than a third.

- Interestingly India is within the top 20 Chinese migrant locations but China is not within the top 20 Indian migrant locations.

Question	Part	Marking guidance	Total marks
03		<p>Assess the extent to which unequal access to global markets has impacts on social and economic wellbeing.</p> <p>Refer to countries at different levels of economic development to support your answer.</p> <p>AO1 – Knowledge and understanding of differential access to markets associated with levels of economic development and its impacts on economic and societal wellbeing. Knowledge and understanding of unequal flows and power relations. Knowledge and understanding of the globalisation critique.</p> <p>AO2 – Application of knowledge and understanding to assess the extent to which unequal access to global markets has impacts on socio-economic wellbeing in countries at different levels of economic development. Application of knowledge and understanding to consider range of impacts as well as similar impacts at different levels of economic development.</p>	<p>9</p> <p>AO1=4 AO2=5</p>

Level	Marks	Descriptor
3	7 – 9	<p>AO1 – Demonstrates detailed knowledge and understanding of unequal access to global markets associated with levels of economic development and its impacts on economic and societal wellbeing.</p> <p>AO2 – Applies knowledge and understanding to the novel situation, offering detailed analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are thorough and relevant.</p>
2	4 – 6	<p>AO1 – Demonstrates clear knowledge and understanding of unequal access to global markets associated with levels of economic development and its impacts on economic and societal wellbeing.</p> <p>AO2 – Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident with and relevant.</p>
1	1 – 3	<p>AO1 – Demonstrates basic knowledge and understanding of unequal access to global markets associated with levels of economic development and its impacts on economic and societal wellbeing.</p> <p>AO2 – Applies limited knowledge and understanding to the novel situation, offering some basic analysis and evaluation. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation are basic and of limited relevance.</p>
0	0	No creditable content.

Indicative Content

This question requires links to be made between different parts of the specification content on Global Systems and Governance, specifically the concept of differential access to markets associated with levels of economic development and its impacts on economic and societal wellbeing. Links can be made to examples of unequal flows and power relations, as well as trading relationships and patterns between different sized economies. There should be clear assessment and reference to the extent of impacts.

AO1

- Knowledge and understanding of differential access to markets associated with levels of economic development and its impacts on economic and societal wellbeing.
- Knowledge and understanding of unequal flows and power relations.
- Knowledge and understanding of trading relationships and patterns between large, emerging and small economies.
- Knowledge and understanding of the globalisation critique.
- Awareness of different opinions and perspectives in relation to the viewpoint.

AO2

- Assessment of the negative social impacts linked to unequal access to global markets in countries at different levels of economic development. eg Lack of customer choice if goods cannot be purchased and lack of development within a country if goods cannot be sold abroad. Exploitation of workers and the environment in developing countries in order to attract more investment and trade.
- Assessment of the negative economic impacts linked to unequal access to global markets in countries at different levels of economic development. eg Trade bloc groupings such as the EU favouring trade within the bloc but limiting access of less developed nations, therefore limiting their development. Less developed countries often have to sacrifice resources or allow exploitation in order to access markets.
- Assessment of the positive social impacts linked to unequal access to global markets in countries at different levels of economic development. eg The development of industry in countries such as China and India has led to growing middle class consumers, with more money to spend on helping the country to develop as well as allowing more purchasing power to develop access to global goods.
- Assessment of the positive economic impacts linked to unequal access to global markets in countries at different levels of economic development. eg Chance to focus on domestic companies as well as the chance to develop more specific trade agreements. China and India have focused on specific industrial areas in order to access the global market place which has developed global trade and technology.
- Assessment of the similar impacts caused by unequal access to global markets in all countries at different levels of economic development. eg Instability of trade, trade bloc development and changing consumer demand.
- Assessment of the impacts caused by equal access to global markets in all countries at different levels of economic development. eg Different levels of development with trading blocs such as the EU has caused issues between countries in terms of money, power dynamics and migration.
- A clear overall extent should be provided based on discussion and assessment of the statement and the issues that it suggests throughout.

Candidates can access level 2 with clear awareness of unequal access to global markets and the impacts of them on social and economic wellbeing. Reference to specific examples of different levels of economic development is needed for level 3.

Question	Part	Marking guidance	Total marks
04		<p>Critically evaluate the impact of governance of the world's oceans on people and places.</p> <p>AO1 – Knowledge and understanding of analysis and assessment of the geographical consequences of global governance for citizens and places who depend on the oceans for their way of life and to consider how global governance underlies and impacts on lives across the globe. Knowledge and understanding of global governance. Knowledge and understanding of the oceans as a global common.</p> <p>AO2 – Application of knowledge and understanding to critically evaluate the impact that ocean governance can have on people and places. Application of knowledge and understanding to draw conclusions on this issue.</p>	<p>20</p> <p>AO1=10 AO2=10</p>

Level	Marks	Descriptor
4	16 – 20	<p>AO2 – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout.</p> <p>AO2 – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout.</p> <p>AO1 – Full and accurate knowledge and understanding of key concepts and processes throughout.</p> <p>AO1 – Detailed awareness of scale and temporal change which is well integrated where appropriate.</p>
3	11 – 15	<p>AO2 – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding.</p> <p>AO2 – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Generally clear and relevant knowledge and understanding of place(s) and environments.</p> <p>AO1 – Generally clear and accurate knowledge and understanding of key concepts and processes.</p>

		AO1 – Generally clear awareness of scale and temporal change which is integrated where appropriate.
2	6 – 10	<p>AO2 – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Some partially relevant analysis and evaluation in the application of knowledge and understanding.</p> <p>AO2 – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Some relevant knowledge and understanding of place(s) and environments which is partially relevant.</p> <p>AO1 – Some knowledge and understanding of key concepts, processes and interactions and change.</p> <p>AO1 – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.</p>
1	1 – 5	<p>AO2 – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence.</p> <p>AO2 – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Very limited relevant knowledge and understanding of place(s) and environments.</p> <p>AO1 – Isolated knowledge and understanding of key concepts and processes.</p> <p>AO1 – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.</p>
0	0	No creditable content.

Indicative Content

The question links different parts of the Global Systems and Governance part of the specification, specifically oceans as a global common and global governance sections. The question requires critical evaluation of the impact of ocean governance on people and places that depend on using the ocean for their way of life. These impacts can be diverse and linked to examples to help develop them. A conclusion to summarise the key impacts may also be included.

AO1

- Knowledge and understanding of analysis and assessment of the geographical consequences of global governance for citizens and places who depend on the oceans for their way of life and to consider how global governance underlies and impacts on lives across the globe.
- Knowledge and understanding of the oceans as a global common.
- Knowledge and understanding of global governance.
- Knowledge and understanding of developing governance of the world's oceans.
- Knowledge and understanding of the globalisation critique.

AO2

- Awareness of how and why ocean governance impacts on people. eg Organisations such as the Marine Stewardship Council (MSC) aim to safeguard fish stocks by using sustainable practices, providing food sources and stocks for fishermen into the future.
- Awareness of how and why ocean governance impacts on places. eg The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) aims to protect the ecosystem of Antarctica by challenging unregulated fishing, managing key locations and conducting research.
- Critical evaluation of the positive impacts of ocean governance on people and places. eg The International Maritime Organisation (IMO) focused on reducing piracy around the Horn of Africa and Indian Ocean when this became a key threat after 2005. This helped to make the region safe and people protected, although it is difficult to continually manage this and the threat is still there. The International Whaling Commission has helped to limit whaling over 30 years and allow whale numbers to grow over time, but certain countries still ignore guidance and catch whales without punishment.
- Critical evaluation of the negative impacts of ocean governance on people and places. eg Organisations such as the IMO and MSC put vessel and usage restrictions in place which large companies are able to adapt to more effectively than local fishermen who are likely to lose out, therefore impacting on their livelihood and the area economy. The MSC has encouraged the banning of bottom trawling and adaptation of fishing quotas which has limited the damaging impacts of commercial fishing, but has also restricted local fishermen. Commercial fleets can get around restrictions by affording fines or throwing bycatch back into the ocean when it is often already dead.
- Critical evaluation can be made through the clear or inferred point that issues are often caused due to the lack of governance. e.g. The Deepwater Horizon oil spill and its impacts in the Gulf of Mexico, on its ecosystem, fishing and tourism industries, were caused in part by a lack of specific regulation and the concept that some large organisations have the financial power to pay fines instead of following all rules and guidance in oceans.

Section B – Resource Security

Total for this section: 40 marks

Question	Part	Marking guidance	Total marks
05	1	<p>Which of the following is defined as having ‘suitable conditions for extraction that have been tested by experts to a high degree of accuracy’?</p> <p>Key – C: Measured reserve</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
05	2	<p>Which of the following are <u>both</u> impacts of acid rain?</p> <p>Key – C: Groundwater contamination and weathering of buildings.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
05	3	<p>Which of the following is the definition of resource peak?</p> <p>Key – C: Resource production reaches its highest level.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
05	4	<p>‘Removal of excess salt and minerals from a water source so that it can be effectively used for human activity’ is the definition of:</p> <p>Key – C: water desalination.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
05	5	<p>Which of the following is an example of energy conservation?</p> <p>Key – A: Buying new electrical goods with a better energy efficiency rating.</p>	<p>1</p> <p>AO1=1</p>

Question	Part	Marking guidance	Total marks
06		<p>Figure 2 shows the global energy mix in 2005, 2010 and 2015.</p> <p>Analyse changes shown in Figure 2.</p>	<p>6</p> <p>AO3=6</p>

Level	Marks	Descriptor
2	4 – 6	AO3 – Clear selection and analysis of the evidence that has been provided which makes appropriate use of data to support. Clear connections between different aspects of the data.
1	1 – 3	AO3 – Some basic selection and analysis of the evidence that has been provided which makes limited use of data to support. Basic or limited connections between different aspects of the data.
0	0	No creditable content.

Indicative Content

This question requires analysis of changes in global energy shown in pie charts from 2005, 2010 and 2015. Answers should identify key changes over time, with reference to specific data, main trends and data manipulation for higher marks.

AO3

- The biggest relative increase over the ten-year period shown in Figure 2 is in wind, going from 0.22% in 2005 to 1.44% in 2015, which is an increase of 1.22% which is by a factor of more than six times.
- Hydro has also shown a clear increase, going from 6.05% in 2005 to 6.79% in 2015, an increase of 0.74% which is relative increase of over an eighth of the original figure.
- Gas has also increased by almost 1%, with a larger relative increase from 2005 to 2010.
- Solar power has shown a notable relative increase over the time period, increasing by six times the 2005 amount of 0.01% to 0.06% in 2010 and then jumping to 0.45% in 2015.
- The biggest increase within a five-year period was coal's increase of 1.23% from 2005 to 2010, although less than a twentieth of the original figure of 28.61%.
- Coal has fluctuated over time, with an increase of 1.23% from 2005 to 2010, then a decrease of 0.64% from 2010 to 2015.
- A key decrease shown in Figure 2 is in oil production, going from 35.96% in 2005 to 32.94% in 2015, a decrease of 3.02%, which is just under a tenth of the original figure.
- Nuclear also had a large relative percentage decrease of 1.29% from the original figure of 5.73% in 2005 to 4.44% in 2015, which is a decrease of almost a quarter of the original figure.
- The balance between renewables and non-renewables has changed over time, with a steady increase in renewables matched by a steady decrease of non-renewables. In 2005 it was 6.82% renewables and 93.18% non-renewables. In 2010 there was 7.83% renewables and 92.17% non-renewables equals 100%. In 2015 there was 9.57% renewables and 90.43% non-renewables.
- Of the non-renewables, nuclear and oil decreased the most in this time period, although there was an increase in both coal and gas in the overall time period, despite a decrease in coal between 2010 and 2015.

- Overall in Figure 2 there were six increases and two decreases in the overall time period. Interestingly, despite the percentage changes the relative order of sizes has not changed in the three-year periods.
- It is also worth considering the fact that the data should be taken in context that they only reveal relative changes in the mix of energy sources and not necessarily absolute increases or decreases. Due to population and demand increases they are all likely to have increased somewhat in this time period.

Question	Part	Marking guidance	Total marks
07		<p>Water conflicts are more significant at a national rather than local scale.</p> <p>Assess the extent to which you agree with this statement.</p> <p>AO1 – Knowledge and understanding of water conflict issues at a variety of scales. Knowledge and understanding of different impacts of water conflict.</p> <p>AO2 – Application of knowledge and understanding to compare the impacts of water conflicts at different scales. Application of knowledge and understanding to assess the extent of impacts at different scales.</p>	<p>9</p> <p>AO1=4 AO2=5</p>

Level	Marks	Descriptor
3	7 – 9	<p>AO1 – Demonstrates detailed knowledge and understanding of impacts of water conflicts at local and national scales.</p> <p>AO2 – Applies knowledge and understanding to the novel situation, offering detailed analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are thorough and relevant.</p>
2	4 – 6	<p>AO1 – Demonstrates clear knowledge and understanding of impacts of water conflicts at local and national scales.</p> <p>AO2 – Applies knowledge and understanding to the novel situation, offering clear analysis and evaluation, drawn appropriately from the context provided. Connections and relationships between different aspects of study are evident and relevant.</p>
1	1 – 3	<p>AO1 – Demonstrates basic knowledge and understanding of impacts of water conflicts at local and national scales.</p> <p>AO2 – Applies limited knowledge and understanding to the novel situation, offering some basic analysis and evaluation. Connections and relationships between different aspects of study are basic with limited relevance. Analysis and evaluation are basic and of limited relevance.</p>
0	0	No creditable content.

Indicative Content

This question requires application of knowledge based on the specification content on Resource Security, specifically the water security section. Knowledge must be applied to assess the extent to which there is agreement with the statement in regards to the impacts and scales. Examples from different local and national scales may be applied to help support this viewpoint.

AO1

- Knowledge and understanding of water conflict issues.
- Knowledge and understanding of different scales and impacts of water conflict.
- Knowledge and understanding of water security issues, including water supply, consumption and sustainability factors, as well as impacts of major water supply schemes.

AO2

- Discussion of the social impacts of water conflict at a local scale. eg Water access issues in Darfur, Sudan is causing food availability issues and landscape degradation which has caused mass migration, unrest and refugee camps to establish. Tensions and price wars between water stakeholders in different regions of Chile, due to introduction of the Water Code, has caused farms to lose out, meaning that there is less water available for food and livelihoods.
- Discussion of the political impacts of water conflict at a local scale. eg Water access issues in Darfur has escalated into conflict between different tribes which has resulted in looting of refugee camps and destruction of water systems such as wells. In Chile the government has been involved in providing water access rights as part the Water Code, leading to some companies gaining whilst others lose out, leading to differentiated political support and unrest.
- Discussion of the environmental impacts of water conflict at a local scale. eg Water conflict issues in Darfur has led to desertification and knock on impacts on ecosystems. Damage to water networks within Syria as part of the conflict has led to localised flooding. The Dakota Access Pipeline development in the USA has led to protests about potential impacts on water within the Standing Rock reserve, based on a history of oil leaks that could damage water supplies.
- Discussion of the social impacts of water conflict at a national scale. eg Water supplies have been damaged in the Syrian war, affecting water access for millions of people. In Yemen, access to water both before and during civil war, has led to malnutrition and death, ultimately leading to civil unrest and uprising.
- Discussion of the political impacts of water conflict at a national scale. eg Water supplies have also been used as a political tool in the Syrian war, for instance Aleppo had water supplies cut off and water networks have been deliberately bombed. Dam creation in Ethiopia, for drinking water or hydro-electric power, has led to water access issues downstream, leading to farming issues and famines which has led to the need for international aid.
- Discussion of the environmental impacts of water conflict at a local scale. eg Water conflict issues in Darfur has led to desertification and knock on impacts on ecosystems. Damage to water networks within Syria as part of the conflict has led to localised flooding. The Dakota Access Pipeline development in the USA has led to protests about potential impacts on water within the Standing Rock reserve, based on a history of oil leaks that could damage water supplies.
- Discussion of the environmental impacts of water conflict at a national scale. eg Lack of regular water supply within Syria due to war damage and political decisions has led to lack of water for irrigation of cropland leading to environmental damage and dereliction. Dam destruction in Yemen as part of the ongoing civil war has led to flooding and landscape damage across the country.

- Comparison of these impacts at the different scales in order to make an overall assessment of extent in relation to the statement. eg Whilst there may be more variety of impacts at a local scale, especially when linked to poverty and more vulnerable people, at the national scale the impacts can be more severe, especially with politics and civil wars developing from some cases. Civil wars can then be long lasting with more wide-spread and devastating impacts as has been shown through examples such as Sudan and Syria.

Question	Part	Marking guidance	Total marks
08		<p>Evaluate the environmental impacts caused by energy resource development.</p> <p>AO1 – Knowledge and understanding of environmental impacts such as those of a major energy resource development, eg an oil, gas or coal field and associated distribution networks. Strategies to increase energy supply (oil and gas exploration, nuclear power and development of renewable sources). Knowledge and understanding of key factors involved in energy security, including energy supplies in a globalising world and strategies to increase energy supply.</p> <p>AO2 – Application of knowledge and understanding to evaluate the environmental impacts of resource development.</p>	<p>20</p> <p>AO1=10 AO2=10</p>

Level	Marks	Descriptor
4	16 – 20	<p>AO2 – Detailed evaluative conclusion that is rational and firmly based on knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Detailed, coherent and relevant analysis and evaluation in the application of knowledge and understanding throughout.</p> <p>AO2 – Full evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Detailed, highly relevant and appropriate knowledge and understanding of place(s) and environments used throughout.</p> <p>AO1 – Full and accurate knowledge and understanding of key concepts and processes throughout.</p> <p>AO1 – Detailed awareness of scale and temporal change which is well integrated where appropriate.</p>
3	11 – 15	<p>AO2 – Clear evaluative conclusion that is based on knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Generally clear, coherent and relevant analysis and evaluation in the application of knowledge and understanding.</p> <p>AO2 – Generally clear evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Generally clear and relevant knowledge and understanding of place(s) and environments.</p> <p>AO1 – Generally clear and accurate knowledge and understanding of key concepts and processes.</p>

		AO1 – Generally clear awareness of scale and temporal change which is integrated where appropriate.
2	6 – 10	<p>AO2 – Some sense of an evaluative conclusion partially based upon knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Some partially relevant analysis and evaluation in the application of knowledge and understanding.</p> <p>AO2 – Some evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Some relevant knowledge and understanding of place(s) and environments which is partially relevant.</p> <p>AO1 – Some knowledge and understanding of key concepts, processes and interactions and change.</p> <p>AO1 – Some awareness of scale and temporal change which is sometimes integrated where appropriate. There may be a few inaccuracies.</p>
1	1 – 5	<p>AO2 – Very limited and/or unsupported evaluative conclusion that is loosely based upon knowledge and understanding which is applied to the context of the question.</p> <p>AO2 – Very limited analysis and evaluation in the application of knowledge and understanding. This lacks clarity and coherence.</p> <p>AO2 – Very limited and rarely logical evidence of links between knowledge and understanding to the application of knowledge and understanding in different contexts.</p> <p>AO1 – Very limited relevant knowledge and understanding of place(s) and environments.</p> <p>AO1 – Isolated knowledge and understanding of key concepts and processes.</p> <p>AO1 – Very limited awareness of scale and temporal change which is rarely integrated where appropriate. There may be a number of inaccuracies.</p>
0	0	No creditable content.

Indicative Content

The question links different parts of the Resource Security part of the specification, specifically within the energy security section, with reference to resource development. The question requires evaluation of the environmental impacts.

AO1

- Knowledge and understanding of environmental impacts of energy resource development such as oil, gas or coal field or renewable energy. Environmental impacts may include land clearance, pollution associated with leaks or ecosystem disruption as sometimes associated with wind farms.
- Strategies to increase energy supply (oil and gas exploration, nuclear power and development of renewable sources).
- Knowledge and understanding of key factors involved in energy security, including energy supplies in a globalising world and strategies to increase energy supply.

AO2

- Evaluation of the negative environmental impacts of energy resource development. eg The petroleum industry's oil extraction and pipeline networks in the Niger Delta have caused huge amounts of environmental destruction at drilling sites, but also major environmental impacts linked to oil leaks caused by corrosion or sabotage of distribution pipelines. In Canada, tar sand energy extraction has caused large scale boreal forest felling as part of land clearance for strip mining, as well as river pollution due to chemical involvement. Fracking in the USA has caused water pollution at drill sites, as well as increased noise and air pollution linked to transport and distribution.
- Evaluation of the environmental remediation to energy resource development. eg Shell energy have undertaken remediation actions in the Niger Delta based on the impacts of energy production and supply. These have included clean-up activities, land management and laboratory testing of sites, as well as community involvement in land and resource management. Based on recommendations from the UN, the Nigerian government has also launched a \$1 billion clean up and restoration programme to involve communities, local businesses and NGOs. In the case of fracking, this required limited landscape damage because energy can be extracted from ground level without extensive mining of the land. In a number of European countries fracking has required environmental sensitivity analysis and test drilling to minimise impacts before being allowed.
- Evaluation of the negative impacts of renewable energy resource development and its associated distribution networks. eg The Three Gorges Dam involved large-scale flooding of Yangtze river valleys, with resultant destruction of ecosystems and vegetation damage which has led to increased methane emissions. The disruption to the river flow has also threatened key animals, such as the rare Baiji dolphin, due to restricted movement and food sources. Wind power development in the UK has led to visual impacts on landscapes, habitat and ecosystem damage through noise pollution and been seen to specifically affect bird populations. Whilst they are seen as a carbon zero form of energy, there is still carbon use required within the manufacture, assembly and maintenance of wind turbines, as well as extraction of raw materials to create components.
- Evaluation of the positive impacts of renewable energy resource development and its associated distribution networks. eg The Three Gorges Dam has replaced the need for power stations, many of which would have been coal fuelled, therefore preventing further emissions leading to global warming, acid rain and localised smog. Wind power development in the UK has helped to reduce the need for polluting power stations and does not need the associated raw material transportation impacts that power stations have. Wind power also does not require the water use, resource extraction and large-scale building that power stations require.

- Evaluation of the overall environmental impacts of major energy resource development and its associated distribution networks. eg Overall there have been more negative impacts in the Niger Delta with the damage to wildlife shown by the oil spills. Clean up is only responding to the negative issues and more sustainable management of the area is needed to secure the future. The tar sand extraction in Canada is environmentally destructive and although developing technology is attempting to mitigate this, most environmental monitors agree that technology is not enough. Wind power in the UK has been seen as mainly positive, especially since more has moved offshore to minimise some of the negative impacts, with the UK hugely reducing the need for coal fuelled power stations especially.

Candidates can reach level 3 with reference to energy efficiency and general impacts of energy resources on the environment. These could include factors such as energy efficiency and home improvements, as well as general issues like air pollution and global warming. To reach level 4 there need to be detailed examples that are applied to places and the development of an energy resource.

Assessment Objective grid

	AO1	AO2	AO3	Total
Section A				
01.1	1			1
01.2	1			1
01.3	1			1
01.4	1			1
01.5	1			1
02			6	6
03	4	5		9
04	10	10		20
Section B				
05.1	1			1
05.2	1			1
05.3	1			1
05.4	1			1
05.5	1			1
06			6	6
07	4	5		9
08	10	10		20
Unit total	38	30	12	80