
AP[®] Human Geography

Sample Student Responses and Scoring Commentary

Set 2

Inside:

Free-Response Question 2

- Scoring Guidelines**
- Student Samples**
- Scoring Commentary**

Question 2: One Stimulus**7 points****(A)** Describe ONE reason a country's percentage of forest cover may change. **1 point**

Accept one of the following reasons for forest loss:

- A1. Forests may be cleared for buildings (e.g., houses, businesses), or urban development, or recreational sites (e.g., golf courses), or industrial land use, or infrastructure projects (e.g., roads, powerlines, hydropower projects).
- A2. Forests may be cleared for agriculture (e.g., farms, pastures) or mining.
- A3. Environmental impacts (e.g., fires, floods, salinization, desertification, climate change, pests, disease, coastal erosion, drought, extreme heat, landslides, rising sea levels) may result in forest loss.
- A4. Practices that are not sustainable allow forest loss due to logging for lumber, paper products, and/or energy use.
- A5. Geological forces (e.g., tsunamis, earthquakes, volcanoes) may destroy forests.
- A6. Forest loss may occur in less developed countries as they industrialize, urbanize, and their economies grow.

Accept one of the following reasons for an increase in forest cover:

- A7. Climate change (e.g., climatic shifts) may result in increasing forest cover (e.g., from increasing rainfall).
- A8. Depopulation (e.g., of rural and/or urban areas) may allow a return of residential, industrial, or agricultural land to forest.
- A9. Increasing quantity and/or size of parks or recreation areas may restore forests.
- A10. Tree plantations (e.g., Christmas trees, rubber, eucalyptus) may be counted as forest cover.
- A11. Governments, non-governmental groups, women's groups, indigenous tribal organizations, and/or private citizens may implement forest restoration policies or practices that result in net afforestation.
- A12. Forest may return as less land is needed for agriculture due to better crop yields.

Accept one of the following reasons for either an increase or decrease in forest cover:

- A13. Inconsistencies in remote sensing data (e.g., gaps, misinterpretation) may lead to incorrect estimates of forest cover. Better data and/or improved interpretation may result in revised estimates that increase or decrease forest cover.
- A14. A country's land area may increase or decrease (e.g., Sudan losing area of South Sudan, land reclamation), resulting in loss or gain of forest cover.
- A15. Political conflicts (e.g., wars) may result in gain (e.g., in no-go zones such as DMZs and areas with land mines) or loss (e.g., defoliation) of forest cover.
- A16. Cultural practices that protect forests (e.g., protection of sacred groves in West Africa, protection of Indigenous sacred sites in Australia) may increase in scope, resulting in net gain of forest cover. The opposite can also happen, resulting in net loss of forest cover.

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- (B)** Using the data shown in the graph, compare the trends in forest cover change between more developed countries and less developed countries from 1990 through 2015. **1 point**

Accept one of the following:

- B1. Developing countries lost forest cover while developed countries remained stable or slightly increased forest cover, described in relative terms between example countries from the graph.
- B2. Developing countries lost forest cover while developed countries remained stable or slightly increased forest cover, described using numbers from the graph between example countries.

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- (C)** Using the data shown in the graph, explain ONE reason for the global trend in forest cover over time. **1 point**

Accept one of the following:

- C1. Global forest cover has remained steady or has declined only very slightly because forest cover losses in some regions or countries have been offset (e.g., mitigated) by forest cover gains in other regions or countries.
 - C2. Global forest cover has remained steady or has declined only very slightly because destruction of forests (e.g., of rain forests) has been mitigated by regrowth of forests due to farm abandonment or increasing urban afforestation.
 - C3. Global forest cover has remained steady or has declined only very slightly because forest cover losses have been offset by large-scale tree planting (e.g., reforestation) in certain areas (e.g., in China, in parts of Africa) and/or because of improved practices in forest management (e.g., using sustainability principles).
 - C4. Global forest cover has remained steady or has declined only very slightly because global warming (e.g., climate change) is allowing the tree line to change (e.g., forest can now grow at higher elevations and at higher latitudes, so alpine and Arctic tundra is shrinking), offsetting forest cover losses elsewhere.
 - C5. Global forest cover has remained steady or has declined only very slightly because less developed countries are still experiencing high rates of natural increase requiring increased resource and/or land use, while developed countries have low or negative rates of natural increase enabling them to maintain current levels of forest cover.
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- (D)** Explain the degree to which Wallerstein’s world system theory explains changes in the pattern of forest cover since 1990. **1 point**

Accept one of the following:

Statement indicating a high or significant degree

AND

Supported by the following:

- D1. Wallerstein’s theory (world system theory) states that production and extraction (e.g., of resources such as timber) in peripheral and semi-peripheral countries support the core, which explains why countries such as Honduras, Brazil, and Indonesia are decreasing in forest cover and countries such as Germany, the US, and Japan are not.

OR

Statement indicating a moderate degree

AND

Supported by the following:

- D2. Wallerstein’s theory may be correct in suggesting that the production and extraction of forests may be more prominent in the peripheral and semi-peripheral countries, but that does not necessarily impact the production and extraction of forest resources in core countries in the twenty-first century.

OR

Statement indicating a slight degree or no degree

AND

Supported by one of the following:

- D3. Wallerstein’s theory does not account for overall world forest cover staying essentially the same due to non-economic factors (e.g., environmental factors such as climate change leading to forest advances in tundra regions).
 - D4. Wallerstein’s theory does not account for international agreements (such as REDD+, Payment for Ecosystems, Cash for Conservation) and efforts to protect forest cover in developing countries.
 - D5. Wallerstein’s theory does not account for forest cover conservation goals, policies, or strategies a semiperipheral or peripheral country may have in place, but which are undermined by land-use decisions made by private landowners.
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- (E)** Explain what the data shown on the graph imply about sources of energy in less developed countries. **1 point**

Accept one of the following:

- E1. Many people in less developed countries rely on firewood for energy (e.g., for heating and/or cooking) to an unsustainable extent (e.g., they have used trees for firewood and/or charcoal faster than forests can regrow).
- E2. Many people in less developed countries lack access to or cannot afford non-wood sources of energy for their households (e.g., for heating and/or cooking), so they have degraded their forest resources for this purpose.
- E3. More sustainable energy sources are not widely available due to a lack of available capital, a lack of infrastructure, and/or technicians to support these, and therefore people turn or continue to use wood as a source of energy.

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- (F)** Explain how the global demand for ONE of the following commodities may be driving local changes in forest cover. **1 point**

1. Palm oil
2. Soybeans
3. Beef

Accept one of the following:

- F1. Palm oil: Because there is high or growing global demand for palm oil used in foods and for other purposes (e.g., for cosmetics, soap, detergents, biofuel), forests in some countries (e.g., Indonesia, Honduras) are being destroyed and replaced with oil palm plantations.
 - F2. Soybeans: Because there is high or growing global demand for soy (e.g., from China) used in foods and for other purposes (e.g., oils, animal feed, industrial products), forests in some countries (e.g., in Brazil, Argentina, Paraguay) are being destroyed and replaced with soybean fields.
 - F3. Beef: Because there is high or growing global demand for beef used for food, forests in some regions (e.g., in the Amazon basin) are being destroyed and replaced with cattle pastures.
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- (G)** Explain ONE consequence of forest cover change for environmental sustainability in more developed countries. **1 point**

Accept one of the following:

- G1. Environmental sustainability is affected as biodiversity and ecosystem services are reduced due to deforestation or increased due to afforestation and/or reforestation (e.g., habitat improvement).
- G2. Environmental sustainability is diminished due to the climate change impacts of forest cover loss (e.g., less carbon storage and/or more carbon release (CO₂), increased greenhouse gas emissions, conversion to industrial land uses) or may be increased (e.g., mitigate climate change, shift to alternative energy sources) due to the role of forests in carbon storage.
- G3. Forest cover loss diminishes environmental sustainability by creating environmental justice concerns because, in some cases, marginalized groups are disproportionately affected by forest loss (e.g., by resultant climate change, by loss of access to forest resources), or in some cases, marginalized groups may support forest use as a method of economic development.
- G4. Environmental sustainability is affected because loss of forest cover results in higher prices, increased demand, and/or reduced supply for housing and consumer products in more developed countries.
- G5. Environmental sustainability is diminished because loss of forest cover may result in loss of soil and/or water quantity and quality (e.g., due to erosion, water pollution, runoff).
- G6. Environmental sustainability is diminished when wildfires in more developed countries create airborne dust particles that pollute the atmosphere.
- G7. Environmental sustainability is diminished when deforestation creates airborne dust particles due to fires set by humans or from soil erosion.

Total for question 2: 7 points

Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

A. A reason that a country's percentage of forest coverage may change is that people are cutting down trees for the lumber or natural resources in the trees. This results in the trees of forests being cut down; thus resulting in forests shrinking and less forest coverage in a country.

B. Between 1990 and 2015, according to the graph, MDCs saw little change in their forest coverage, while LDCs saw a great decrease. This means that MDCs hardly lost any forests between the years of 1990 and 2015. On the other hand, LDCs lost a lot of their forests because of things like deforestation. For example, the graph shows that the US, ^{an MDC} did not lose any forest coverage, while an LDC, like Honduras, lost nearly 40% of their forest coverage.

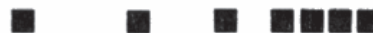
C. A reason for the slow decrease in the global forest coverage, is that much of the world has been focusing on sustainability and protecting the environment such as for preventing deforestation. There is still a decrease present because many LDCs deforest a lot, but it is balanced by larger countries and MDCs, hardly losing any forest coverage such as the USA.

D. Wallerstein's World Systems theory explains changes in the pattern of forests to a high degree. According to Wallerstein, MDCs are in the core and they exploit the periphery countries, such as LDCs, to gain success. This explains the pattern of MDCs hardly having any forest loss, while LDCs have a lot of forest losses. ~~the core~~

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● **Important:** Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

D. The core MDC countries are exploiting the forests of periphery LDC countries, so that they hardly have any forest losses, as shown by the graph.

E. The data shown on the graph implies that LDCs get a lot of their energy from wood. Since ~~the~~ the graph shows that LDCs deforest a lot, it can be implied that the LDCs are deforesting partly for the wood from the trees. ~~the~~ Furthermore, LDCs typically have more carbon emissions, so it can be inferred that LDCs are deforesting for wood to use as an energy source, thus explaining their high deforestation rates and CO₂ emission rates.

F. The global demand for beef has been increasing, which has led to more deforestation on the local scale. This is because to supply the demand for beef, many farmers in LDCs are using slash and burn tactics to clear away forests, so that they can make more room for raising cattle. This leads to less forest coverage because forests are being cleared to meet the global demand for beef, as more space is needed to raise cattle.

G. A consequence of the overall global decrease in forest coverages ~~and MDCs~~ for MDCs is that as forests shrink, it removes ways for greenhouse gases to exit the atmosphere. This results in more greenhouse gases, which cause climate change through global warming. This impacts MDCs by melting ice caps and flooding cities, causing wildfires, and biodiversity loss in MDCs, which harms the environment.

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Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

A. A reason for a country's percentage of forest cover decreasing is due to deforestation from agriculture. Activities such as slash and burn clear forests ~~area~~ for agricultural reasons (production of crops) This leads to the coverage of forests decreasing.

B. The trends shown in forest change between less developed and more developed is that the less developed areas ~~are~~ are losing the cover of forest at a much faster rate than developed areas.

C. One reason for the global trend of forest cover decreasing over time is that as ^{world's} population grows (as it did between 1990 and 2015) the need for resources grows as well. ~~This is the reason~~ They fulfill this need of more resources by clearing more trees.

D. The degree Wallerstein's World system theory explains the changes in forest coverage is very significant. ~~This~~ This system has three categories periphery, core, semiperiphery. Core countries such as the U.S. trade for resources from periphery countries such as Honduras. This trade for resources cause more deforestation and less tree coverage in these periphery countries rather than the core countries.

Page 5

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Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

E. The data on the graph show us that in less developed countries they use energy sources of wood frequently. You see this pattern because countries not using wood as a energy source are more developed and have more coverage of forests. On the other hand less developed countries have the opposite.

F. The production of palm oil in parts of Africa greatly affect the coverage of forests. This is because they receive profit from the product and to continue the production they must expand the areas where palm oil is produced. In doing this they clear more forests and lead to less forest coverage.

G. The consequence of forest cover change for environmental sustainability in developed countries is that the forests help greatly with CO₂ admissions. They are the "lungs of the earth" without them developed countries atmosphere suffers and harms environmental sustainability.

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Important: Completely fill in the circle that corresponds to the question you are answering on this page.

Question 1

Question 2

Question 3



Begin your response to each question at the top of a new page. Do not skip lines.

- A) Forest area may change over time due to urbanization which is a factor to deforestation.
- B) Forest area is decreasing more rapidly in less developed countries due to the fact that they are developing more rapidly which also causes deforestation. Manufacturing and extracting natural resources in those LDC's also causes forest ~~are~~ to decrease in area. Pollution is also a factor.
- C) Globally, forest area is declining because of urbanization.
- D) Wallerstein's world theory states that natural resources we have now are not going to sustain the human population which reflects in the decrease of forest area over time.
- E) The graph implies that less developed countries have more energy sources because it shows so much forest area being extracted in the LDC's.
- F) A high global demand for beef may cause forest area to decline due to forests being cleared out to make room to raise cows to meet the beef demand. Overgrazing and pollution from animal waste may also cause a decline in forests.
- G) The decline of forests in more developed countries may make it so that ~~the~~ environmental sustainability will take a toll. With not as many trees, greenhouse gases will rise and cause disastrous effects because there are not enough trees to keep up with the pollution.

Page 4

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Question 2

Note: Student samples are quoted verbatim and may contain spelling and grammatical errors.

Overview

This question was expected to demonstrate students' abilities across several aspects of the course, requiring students to draw from two units of the course—agriculture and economic development. In terms of skills, responses required students to make use of four skill areas, with Skill Category 3 Data Analysis used the most.

In part A responses required students to describe one reason why forest cover may change. While many students responded by describing forest cover loss, fewer students realized that in some countries forest cover had increased.

In part B responses required students to use data analysis to compare patterns in quantitative data to draw a conclusion, again with content from environmental consequences of land cover change.

In part C students were expected to explain trends (the global trend) in quantitative data to draw a conclusion about environmental consequences of land cover change. In this case, students needed to explain the global trend line in the graph (rather than a generalized global trend), explain whether the global forest cover has remained steady or has declined slightly and provide an explanation for that trend that speaks to both forest cover gain and loss.

In part D students needed to explain the degree to which a geographic model, in this case Wallerstein's world systems model, effectively explains geographic effects in different regions of the world. The different regions in this case were core, semi-periphery, and periphery countries. Many students were unable to indicate the degree to which Wallertstein's world system model explained forest cover change in different regions of the world.

In part E students were expected to demonstrate the ability to explain what data implies about geographic principles. In this section, the focus was on what the data shown implies about sources of energy in less developed countries. In other words, what does the type of energy use say about levels of development? In part F students were asked to move to Skill Category 5 Scale Analysis to explain spatial relationships across various geographic scales using geographic concepts. The geographic scales in this section were global demand and local changes while the geographic concept was land cover change (i.e., changes in forest cover). Students who focused their answers on soybeans or beef did better than those students that focused on palm oil, revealing some misconceptions about the relationship between palm oil and forest cover change.

In part G students were challenged to shift back to Skill Category 2 Spatial Relationships to explain a likely outcome (a consequence of forest cover change) in a geographic scenario (more developed countries) using geographic concepts (environmental sustainability). Students were generally successful in linking environmental sustainability to forest cover change.

The seven parts of this question combined to ask students to complete data analysis as they interpreted a graph showing forest cover as a percentage of total land area from 1990 to 2015 for selected countries and the world. In addition to interpreting the graph, students were asked to explain reasons for the forest cover change, both when forest cover change increased as well as when it decreased. Further, they were asked to apply world system theory to the trends seen in the graph.

Question 2 (continued)

Lastly, they needed to be able to explain how global demand for one of three commodities (palm oil, soybeans, or beef) drives change in forest cover at the local scale, which was not shown in the graph. Thus, they needed to apply economic understanding within the context of environmental sustainability.

Sample: 2A

Score: 7

The response to part A earned 1 point because it describes one reason a country's percentage of forest cover may change with the example of forest loss due to logging for lumber.

The response to part B earned 1 point because it compares trends in forest cover change between more developed and less developed countries from 1990 through 2015 and describes using numbers from the graph between example countries.

The response to part C earned 1 point because it explains how global forest cover has declined only very slightly, because forest cover losses in some regions have been offset by forest cover gains in other regions or countries.

The response to part D earned 1 point because it explains the high degree to which Wallerstein's world system theory explains how production and extraction in peripheral countries support the core, which explains why peripheral countries are decreasing in forest cover and core countries are not.

The response to part E earned 1 point because it explains that many people in less developed countries rely on firewood for energy to an unsustainable extent.

The response to part F earned 1 point because it explains how the growing global demand for beef has led to forests being destroyed and replaced with cattle pastures.

The response to part G earned 1 point because it explains one consequence of forest cover change for environmental sustainability in more developed countries with the example of how environmental sustainability is diminished due to the climate change impacts of forest cover loss.

Sample: 2B

Score: 5

The response to part A earned 1 point because it describes one reason a country's percentage of forest cover may change with the example of forest loss due to forests being cleared for agriculture.

The response to part B did not earn a point because it does not use data from the graph to compare the trends in forest cover change between more developed countries and less developed countries from 1990 through 2015.

The response to part C did not earn a point because it does not use the data shown in the graph to explain one reason for the global trend in forest cover over time.

Question 2 (continued)

The response to part D earned 1 point because it explains the high degree to which Wallerstein's world system theory explains how production and extraction in peripheral countries support the core, which explains why peripheral countries are decreasing in forest cover and core countries are not.

The response to part E earned 1 point because it explains that many people in less developed countries rely on firewood for energy to an unsustainable extent.

The response to part F earned 1 point because it explains how the growing global demand for palm oil used in foods and for other purposes has led to forests being destroyed and replaced with palm oil plantations.

The response to part G earned 1 point because it explains one consequence of forest cover change for environmental sustainability in more developed countries with the example of how environmental sustainability is diminished due to the climate change impacts of forest cover loss.

Sample: 2C

Score: 3

The response to part A earned 1 point because it describes one reason a country's percentage of forest cover may change with the example of forest loss due to forests being cleared for buildings or urban development.

The response to part B did not earn a point because it does not use data from the graph to compare the trends in forest cover change between more developed countries and less developed countries from 1990 through 2015.

The response to part C did not earn a point because it does not use the data shown in the graph to explain one reason for the global trend in forest cover over time.

The response to part D did not earn a point because it does not explain the degree to which Wallerstein's world system theory explains changes in the pattern of forest cover since 1990.

The response to part E did not earn a point because it does not explain what the data shown on the graph implies about sources of energy in less developed countries.

The response to part F earned 1 point because it explains how the growing global demand for beef has led to forests being destroyed and replaced with cattle pastures.

The response to part G earned 1 point because it explains one consequence being that environmental sustainability is diminished due to the climate change impacts of forest cover loss.