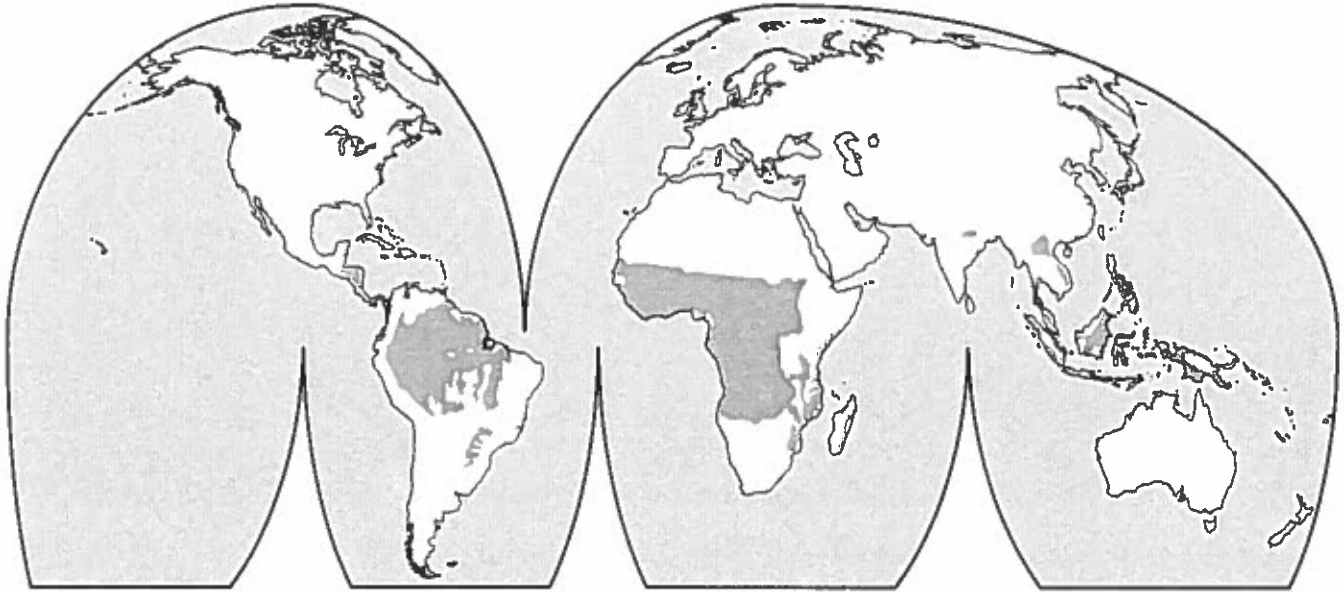


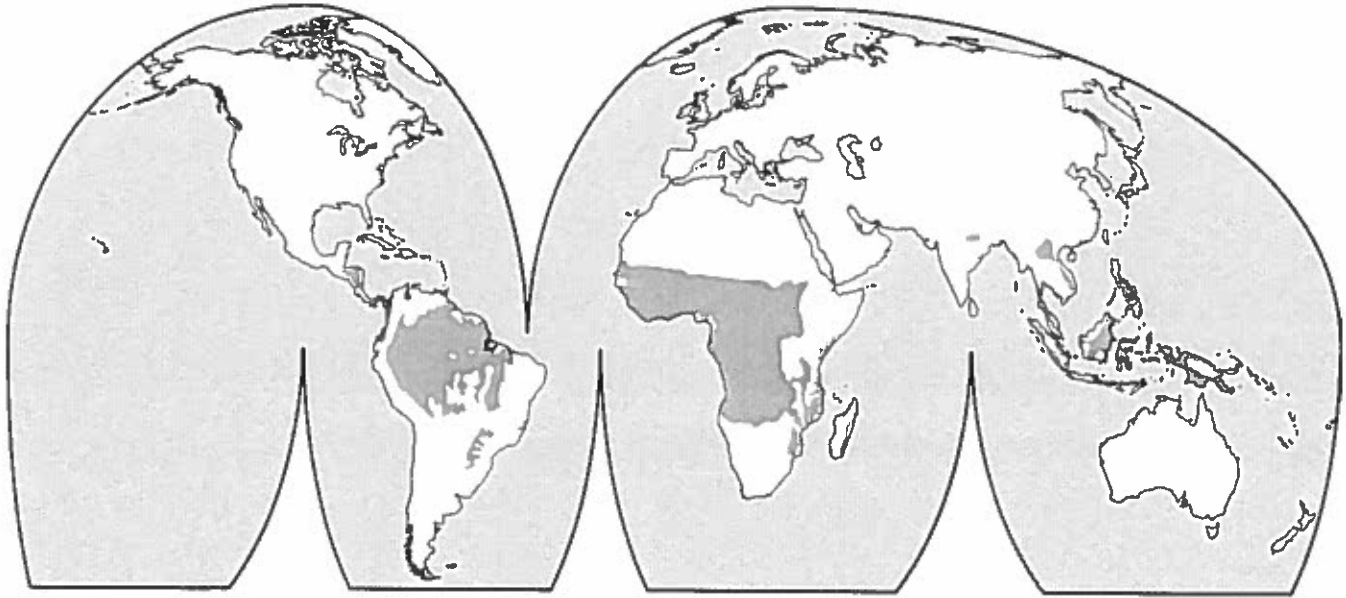
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2. The map above shows areas of shifting cultivation, a form of subsistence agriculture.
- A. Define subsistence agriculture.
  - B. Describe the practice of shifting cultivation.
  - C. Explain one reason why shifting cultivation was sustainable in the past.
  - D. Explain two reasons why shifting cultivation is expected to diminish during the twenty-first century.

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Question 2



The map above shows areas of shifting cultivation, a form of subsistence agriculture.

**Part A (1 point)**

Define subsistence agriculture.

Any of the following is a correct response:

- Food grown for the farmer or farmer's family/kin
- Food grown for *local consumption* for village/community market
- Food NOT grown for commercial purposes/sold for revenue

*Note:* Students cannot earn this point by explaining the market alone.

**Part B (1 point)**

Describe the practice of shifting cultivation.

Students must describe all three of the following processes to earn this point:

<b>Clearing</b> (e.g., slash-and-burn swidden, milpa, patch, chitemene, ladang)	→	<b>Farming</b> (until land is no longer fertile because of nutrient depletion)	→	<b>Moving</b> (shifting) to another plot of land <i>Note:</i> Referencing "crop rotation" is incorrect.
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## Question 2 (continued)

### Part C (1 point)

Explain one reason why shifting cultivation was sustainable in the past.

Either of the following is a correct response:

- Must link *lower/smaller/less* population AND *more* available land/cultural adaptation/environmental adaptation. *Note:* References to global land are incorrect.
- Lower *physiologic/nutritional/agricultural* density. *Note:* References to lower population density are incorrect.

### Part D (4 points)

Explain two reasons why shifting cultivation is expected to diminish during the twenty-first century.

Reasons (2 points)	Explanation (2 points)
Technological advancements (e.g., fertilizers, hybrid seeds, pesticides)	<ul style="list-style-type: none"> <li>• Leads to increased yields/food quantity</li> <li>• Leads to sedentary farming</li> <li>• NOT just "Green Revolution"</li> </ul>
Expanding/growing population (NOT just "world population")	<ul style="list-style-type: none"> <li>• Less available land</li> <li>• Higher physiologic/nutritional/agricultural density</li> <li>• Reduced soil fertility owing to shortened fallow period</li> </ul>
Commercial agriculture	<ul style="list-style-type: none"> <li>• Profitable</li> <li>• Efficient</li> <li>• Plantation/agribusiness/cash cropping/ranching</li> </ul>
Competing land-use activities (e.g., logging, corporate investment, other employment opportunities)	<ul style="list-style-type: none"> <li>• Students must state that these occur at the expense of shifting cultivation (e.g., that they lead to environmental degradation)</li> </ul>
Government/environmental policy	<ul style="list-style-type: none"> <li>• Controls on deforestation</li> <li>• Restrictions on land rights or usage</li> <li>• Limiting carbon dioxide emissions</li> </ul>

*Note:* Two reasons and two explanations must come from two different boxes but need NOT be connected only in the manner shown above.

#2

Write in the box the number of the question you are answering on this page as it is designated in the exam.

- (A) Subsistence agriculture is a type of agriculture used only to sustain the person, family, or village engaged in it and is not for the use of selling the crops to make a profit.
- (B) Shifting cultivation is when all the vegetation in an area is removed and burned. The burning of the vegetation provides a fertilizer for the land. Crops are then planted on this area for a couple of years, and then they are left fallow for about 10-20 years until it's used again. This gives time for the vegetation to come back.
- (C) Shifting cultivation was sustainable in the past because there weren't as many people, so there was plenty of land that was available for the practice.
- (D) Shifting cultivation is ~~now~~ expected to diminish now because many new agricultural techniques and inventions such as genetically enhanced seeds, plows, tractors, irrigation systems, and many other things have made other types of agriculture more efficient. Also due to the growing population of the world there isn't as much farmland, and shifting cultivation is not a practical use of land. There's also many places especially forests that are being protected from cutting down vegetation,

Write in the box the number of the question you are answering on this page as it is designated in the exam.

2

A) Subsistence agriculture is a method of agriculture in which the products and food produced are consumed by the farmers and their families, feeding themselves.

B) Shifting cultivation is the process of using one area of land as farmland and moving onto another area of land to farm once the first is no longer as beneficial to the farmers. As farmers move from one area of land to another, they usually dispose/clear the old farmland in some way and come back later once the land has recovered. Slash and burn agriculture is one example of shifting cultivation; as a certain area of land is used and then burned, farmers will move onto other areas.

C) In the past, shifting cultivation was sustainable because there was a larger amount of farmland available. Farmers could farm in these vast amounts of land without thinking of possible consequences. There was also a fewer amount of people to feed in general, so this type of farmer was appropriate. The once clear farmland is now

2

Write in the box the number of the question you are answering on this page as it is designated in the exam.

inhabited, and it is harder to feed a larger amount of people with a limited amount of farmland.

P) Currently, shifting cultivation is expected to diminish because it is simply no longer sustainable or appropriate. For one, population in areas that practice shifting cultivation has increased dramatically to the point where the food harvested from shifting cultivation is no longer enough to feed the population. A second reason for the predicted decline in shifting cultivation is the overall less unoccupied, farmable land. Once uninhabited land is now inhabited, therefore, shifting cultivation cannot be carried out in those areas, and shifting cultivation is heavily dependant on large amounts of land.

Write in the box the number of the question you are answering on this page as it is designated in the exam.

2

a) Subsistence agriculture is an agricultural activity generally associated with the production of agricultural goods to sustain one's self and family or local community. It is usually practiced in Africa, parts of Asia, and South America.

b) Shifting cultivation is a method of agricultural production after a land has been cleared. This land is called swidden. It commonly occurs after a forested area or a region with dense vegetation has been cut down and ignited (slash and burn agriculture). The land is used for cultivation for some period of time (until the nutrients deplete) and are then left alone while the farmers move on to new areas of cultivation.

c) In the past shifting cultivation provided a sustainable way of agricultural that was essential to subsistence means of life. They provided a food supply that could withhold a limited population and occurred in mostly tropical areas (where a diverse range of crops could be grown). As populations started to grow these methods began to

Write in the box the number of the question you are answering on this page as it is designated in the exam.

diminish

d) As the world's population continues to grow at a rapidly increasing rate, the issues of sustainability are brought into question. Older and more traditional methods of agriculture are being exchanged for mechanization, and rapid growth favors these new technological methods in their means of supporting a geometrically growing population. Esther Boserup's theory also proposed an idea of how technological innovation improves human needs of sustenance. Shifting agriculture is also the victim of globalization and popular trends in which the more developed countries help the lesser developed ones by attempting to spread their ideas and increase agricultural production. In some regions of the world, more countries are adopting these processes through diffusion and are therefore decreasing the use of shifting agriculture.



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## 2012 SCORING COMMENTARY

### Question 2

#### Overview

The first half of this question was designed to allow students to demonstrate their knowledge of subsistence agriculture, using the practice of shifting cultivation as an example. In the second half of the question, students were expected to show an understanding of the concept of sustainability within the context of shifting cultivation. The question asked students to define subsistence agriculture and to describe the processes involved in shifting cultivation in parts A and B. In part C students were asked to provide an explanation of how shifting cultivation was sustainable in earlier times. In part D they were asked to explain two reasons why shifting cultivation is expected to decline in the future.

#### Sample: 2A

**Score: 7**

This response earned full credit and demonstrates a comprehensive understanding of subsistence agriculture and the sustainability of shifting cultivation in the past and for the future. It received 1 point in part A for correctly defining subsistence agriculture as sustaining "the person, family, or village engaged in it and is not for the use of selling the crops to make a profit." The response received 1 point in part B by describing how shifting agriculture occurs when "vegetation in an area is removed and burned[,] ... [c]rops are then planted," and then the land area is "left fallow for about 10–20 years until it's used again." The response received 1 point in part C for explaining that "[s]hifting cultivation was sustainable in the past because there weren't as many people, so there was plenty of land that was available for the practice." Four points were earned in part D for a complete explanation of why shifting cultivation is expected to diminish in the twenty-first century: 2 points for explaining that the availability of "many new agricultural techniques and inventions ... have made other types of agriculture more efficient"; 1 point for explaining that there is not as much farmland available today; and 1 point for explaining that "many places especially forests ... are being protected from cutting down vegetation."

#### Sample: 2B

**Score: 5**

This response earned full credit (1 point) in part A, full credit (1 point) in part B, full credit (1 point) in part C, and partial credit (2 points) in part D. It received 1 point in part A for correctly defining subsistence agriculture as "a method of agriculture in which the products and food produced are consumed by the farmers and their families, feeding themselves." The response earned 1 point in part B by describing shifting cultivation as "the process of using one area of land as farmland and moving onto another area of land to farm." Slash-and-burn agriculture is then offered as an example of shifting cultivation. The response received 1 point in part C for explaining that shifting cultivation was sustainable in the past "because there was a larger amount of farmland available" and there were fewer people. Two points were earned in part D for an explanation of why shifting cultivation is expected to diminish in the twenty-first century: 1 point for citing the expanding/growing population in areas that practice shifting cultivation and 1 point for explaining that, overall, there is "less unoccupied, farmable land." No additional reason or explanation points were awarded in this part.

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**Question 2 (continued)**

**Sample: 2C**

**Score: 3**

This response earned full credit (1 point) in part A, full credit (1 point) in part B, no credit in part C, and partial credit (1 point) in part D. It received 1 point in part A for correctly defining subsistence agriculture as "the production of agricultural goods to sustain one's self and family or local community." The response earned 1 point in part B by describing shifting cultivation as "a method of agricultural production after a land has been cleared[,] ... called swidden." When "the nutrients deplete [sic], ... farmers move on to new areas of cultivation." No point was awarded in part C, as the discussion is mainly about subsistence agriculture. The response earned 1 point in part D for explaining that shifting cultivation is expected to diminish in the twenty-first century because "[o]lder and more traditional methods of agriculture are being exchanged for mechanization." No additional reason or explanation points were awarded in this part, as the student merely continues the discussion of technology's impact.