

Past-paper walk-through

Agricultural Production Regions ■ 5.6

eXercise

Questions in this set

- 2025 Set 1 Q3
- 2023 Set 1 Q2
- 2023 Set 2 Q3

Reading the mark scheme

- **B1** a mark that stands on its own – the point is either made or not.
- **M1** a *method* mark: the right approach, even if the number is wrong.
- **A1** an *answer* mark, and it usually needs its M mark first.
- **C1** a working mark on the way to the answer.
- **//** separates answers the examiner accepts equally.
- **ecf** = error carried forward: a later part is marked on your own earlier answer.
- **owtte** = “or words to that effect” – the wording need not match.

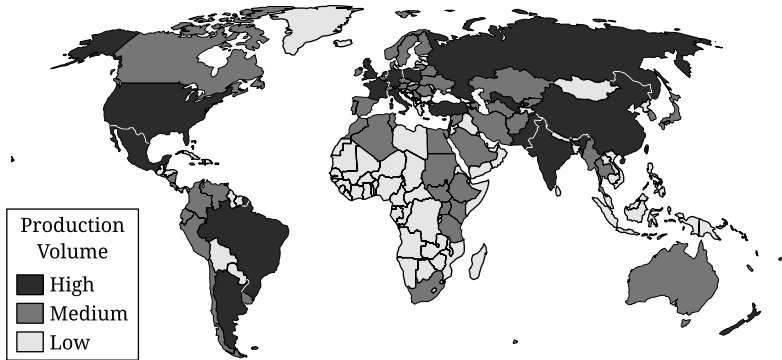
Question 3

2025 Set 1 ■ Q3

The global production of cow's milk and pork results in distinctive spatial patterns of contemporary agriculture and land use.

- (a)** Identify an example of a culture trait.
- (b)** Describe the spatial pattern of cow's milk production in Africa, shown in Map 1.
- (c)** Based on Map 1 and Map 2, compare the spatial patterns of cow's milk production and pork production in Asia. (Response must include both maps in the comparison.)
- (d)** Describe one environmental effect of agricultural land use such as commercial animal farms.
- (e)** Explain how the globalization of agriculture may affect local culture traits.
- (f)** Explain why regions of agricultural production may become interdependent.
- (g)** Explain how domesticated animals such as pigs spatially diffused to create the spatial pattern shown on Map 2.

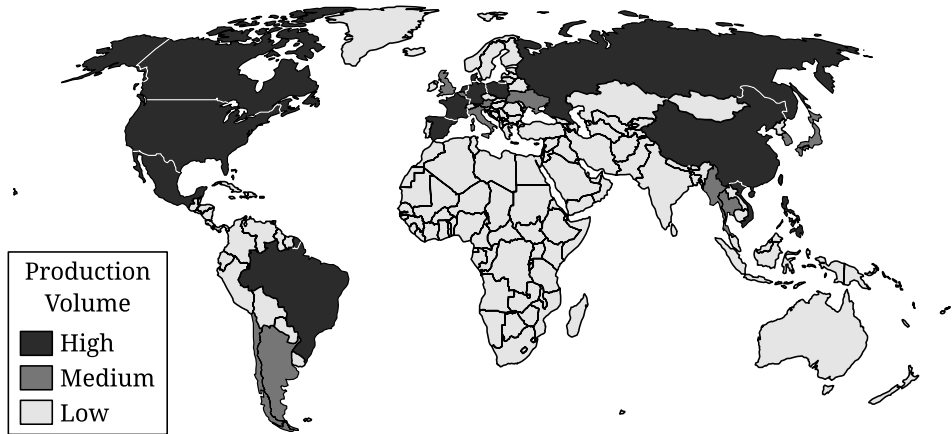
Question 3



Source: Food and Agriculture Organization

Map 2: Pork Production, 2018

Question 3



Solution 3

(a)

Mark scheme

- - Culture traits include such things as food preferences, art, architecture, language, religion, music, clothing, media, technology, and/or land use.

Solution 3

(b)

Mark scheme

- - Medium and/or high amounts of cow's milk production are concentrated or clustered in the north, east, and/or south.
- - Low amounts of cow's milk production are concentrated or clustered in west, central, and/or southwest Africa.

Solution 3

(c) Mark scheme

- - Map 1 shows that cow's milk is produced in most Asian countries at high or medium volumes, whereas Map 2 shows that pork is produced at high or medium volumes in East Asia and/or parts of Southeast Asia, or in low volumes in South and/or Southwest Asia.
- - Cow's milk is produced in most Asian countries, whereas pork is not produced in regions with large Islamic populations, such as the Middle East (Southwest Asia), Central Asia, South Asia, and/or parts of Southeast Asia.
- - Cow's milk production and pork production are low in insular Southeast Asia (e.g., Indonesia, Malaysia, East Timor, Papua New Guinea).

Solution 3

(d) Mark scheme

- - Environmental effects of agriculture land use include pollution (e.g., air, water, waste), land cover change (e.g., soil erosion), nutrient depletion, desertification, and/or soil salinization.
- - The reduction of water supplies for agricultural purposes, such as depleting reservoirs, lowering the local water table, and/or draining aquifers.
- - The reduction of biodiversity from changes in land cover (e.g., deforestation, grassification, feed-crop monoculture).
- - The spread of disease between domestic and wild animal populations or between animal populations and humans.

Solution 3

- - Climate change and/or global warming because such farms produce greenhouse gases (e.g., carbon dioxide, methane, water vapor).
- - Agricultural land use can promote the survival or the growth of environmentally beneficial species (e.g., pollinators, working animals, heirloom varieties).

Solution 3

(e) Mark scheme

- - Globalization of agriculture and/or the global system of agriculture may lead to changes in food preferences.
- - Globalization may lead to people preferring to eat foods imported from other countries that were not previously available to them (e.g., tropical fruits in temperate climates).
- - Globalization may lead to the availability of less expensive imported foods that are substituted for more expensive local foods (e.g., imported wheat replacing locally grown corn).

Solution 3

- - Consumers may resist the globalization of the food supply and in response buy domestically produced food, local food, and/or purchase food from community-supported agriculture.
 - - Globalization of agriculture may lead to a reduction in the number of small family farms, which can affect local cultural traits (e.g., settlement patterns by prompting rural-to-urban migration, social roles by having fewer people working in agriculture).
 - - Globalization may lead to changes in agricultural land use or agricultural production methods through the implementation of new technologies, architecture, and/or equipment (e.g., data analytics, drones, vertical farming, autonomous tractors), affecting local culture traits (e.g., crops, farming practices).
- F Explain why regions of agricultural production may become interdependent.

Solution 3

(f) Mark scheme

- - Some regions and/or countries have become highly dependent on one or more export commodities, which causes different regions to depend on one another for specific agricultural commodities.
- - Regions of agricultural production are connected through global food distribution networks that are affected by political relationships, infrastructure, and/or patterns of world trade.
- - Global patterns of food-processing facilities and markets, economies of scale, distribution systems, and government policies all contribute to greater interdependence among agricultural production regions.

Solution 3

- - Countries may develop comparative advantages, complementarity, specialty crops, and/or consumer markets that establish trade relationships and increase interdependence between two or more countries.
- - Countries in a region may form trade relationships that result in increased trade in farm products (e.g., EU, ASEAN, MERCOSUR).

Solution 3

(g) Mark scheme

- - Domesticated animals such as pigs diffused from their hearths of domestication through relocation diffusion (e.g., settlers bringing animals to new areas).
- - Domesticated animals such as pigs diffused from their hearths of domestication through the Columbian Exchange.
- - International trade, imperialism, and/or colonization introduced domesticated animals such as pigs that were transported to other regions of the world.
- - Domesticated animals such as pigs spread through migration or expansion diffusion, altering food preferences and/or increasing demand for diverse animal products domestically and/or internationally.

Solution 3

- - Domesticated animals such as pigs spread to areas where consumption of these animals was culturally acceptable and/or did not spread to areas where consumption of such animals was culturally unacceptable.

Question 2

2023 Set 1 ■ Q2

One stimulus.

PER CAPITA PRODUCTION OF STAPLE FOOD CROPS IN HEARTH-OF-DOMESTICATION COUNTRIES

Country	Corn/maize (lb per capita)	Potato (lb per capita)	Rice (lb per capita)	Yam (lb per capita)	Cassava/manioc (lb per capita)
Brazil	1,056	39	108	3	183
China	412	145	333	0	52
Mexico	471	31	4	0	0
Nigeria	121	15	93	549	618
Peru	107	362	216	0	13

Question 2

Hearths of domestication: corn/maize = Mexico; potato = Peru; rice = China and Mali; yam = Niger River basin; cassava = Amazon River basin. Source: Food and Agriculture Organization of the United Nations.

Staple food crops provide most of the carbohydrates in people's diets, and some staples are also used as animal feed or in the distillation of ethanol. Cassava is a root crop (tuber) that is the source of farinha, tapioca, and the pearls in bubble tea.

- (a)** Describe the concept of an early hearth of domestication.
- (b)** Identify the crop listed in the table that has diffused the least from its hearth of domestication to the countries listed in the table.
- (c)** Explain how food preferences can be a culture trait.
- (d)** Explain how the Columbian Exchange contributed to a crop's diffusion beyond its hearth of domestication.

Question 2

- (e) Explain how the data in the table support the concept of a crop's consumption pattern being the result of globalization.
- (f) Explain why a crop may be farmed intensively in a less developed country and be farmed extensively in a more developed country.
- (g) Explain ONE way the global supply chain links crops such as those listed in the table to consumers in other countries.

Solution 2

(a)

Mark scheme

- Describe an early hearth of domestication (1 point) — accept any: a location where new (agricultural) practices develop and/or from which they spread; a place where a plant or animal was first domesticated; sites of early civilizations that domesticated plants/animals (e.g., Fertile Crescent, Indus Valley, SE Asia, China, Andean Highlands, Amazonia, Central America); an ancient society whose farmers converted wild species into domesticated varieties over time via selective breeding.

Solution 2

(b)

Mark scheme

- Identify the least-diffused crop (1 point): Yam (yams) — it shows high production only at/near its Niger River basin hearth (Nigeria) and near-zero production in the other countries listed.

Solution 2

(c)

Mark scheme

- Explain food preference as a culture trait (1 point) — accept any: many foods have distinct ingredients/preparations indicative of a specific culture group; culture groups identify with national dishes representing their food culture; foods contain ingredients/crops local to a culture's region; foods are part of a way of life or are forbidden, as expressed in belief systems, religion, artifacts, calendars, or holidays.

Solution 2

(d)

Mark scheme

- Explain the Columbian Exchange's role in crop diffusion (1 point) — accept any: it relocated crops between world regions through conquest, ecological imperialism, colonization, and/or trade routes; it moved crops due to changing food preferences, cultural assimilation, or changing agricultural practices; it may have accidentally/unintentionally introduced a crop beyond its hearth (e.g., seeds as "stow-aways" in cargo).

Solution 2

(e)

Mark scheme

- Explain how the data show globalization of consumption (1 point): high per-capita production/consumption of a crop far from its hearth (e.g., Brazil produces 1,056 lb of corn per capita; rice grown/consumed outside China) shows the crop is globalized. Accept links to globalized food culture/media/preferences; multicultural societies and global migration; globalized trade/transport (free-trade or neoliberal policies, comparative advantage, containerization, bulk shipping); or a growing global middle class of consumers — each evidenced by production away from the hearth.

Solution 2

(f)

Mark scheme

- Explain intensive (LDC) vs extensive (MDC) farming (1 point) — accept any: LDC subsistence/intensive farming on small plots to feed a household vs MDC extensive/commercial farming on large farms for a company's consumers; LDC intensive manual labor (hand tools, animal power) vs MDC mechanized, low-labor extensive production; LDC farmers lack capital/equipment/inputs so rely on intensive human labor while MDC farmers can invest in extensive inputs; LDC farms use local resources to feed families/communities while MDC farms exploit economies of scale for large populations.

Solution 2

(g) Mark scheme

- Explain ONE global-supply-chain link (1 point) — accept any: crops are transported internationally to consumers via storing, processing, packaging, wholesaling, and/or retailing; crops feed the global restaurant/fast-food industry, cultivated/processed in one country then distributed to restaurants in another; growing global consumption of frozen/dried/canned/dehydrated foods means crops are processed into preserved forms and distributed abroad for long-term storage; crops are processed into other forms (e.g., corn for ethanol or animal feed) then shipped to wholesalers, retailers, or consumers in other countries.

Question 3

2023 Set 2 ■ Q3

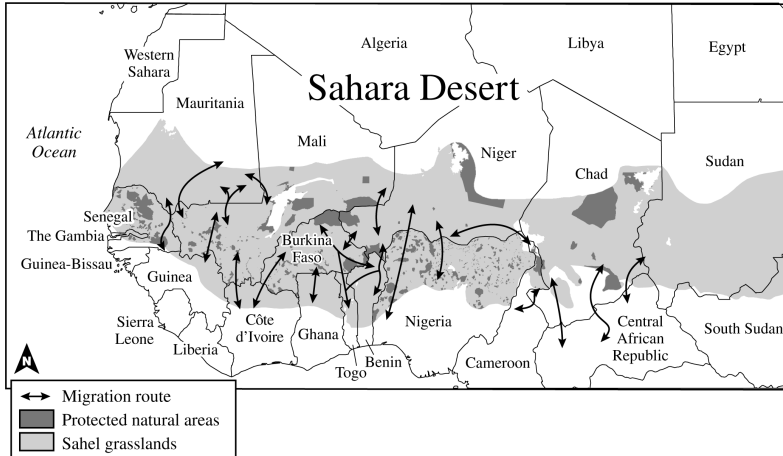
Pastoral nomadism is widely practiced in the Sahel region of Africa. The map and table provide information about spatial patterns and social tensions associated with this type of agriculture.

- (a) Describe ONE reason for the migration patterns shown on the map.
- (b) Describe ONE cause of desertification in the Sahel region.
- (c) Explain how pastoral nomadism may affect the cultural landscape of the Sahel region.
- (d) Explain ONE way mixed-crop farming could be affected by climatic conditions.
- (e) Using the map and table, explain why expanding protected natural areas may affect the migration routes of nomadic herders in the Sahel region.
- (f) Using the information in the table, explain why farmers' increased use of irrigation may increase conflicts with nomadic herders.

Question 3

(g) Explain the degree to which increased access to communication technologies may create cultural convergence among nomadic herders. and fill in the appropriate circle at the top of each page to indicate the question number.

Question 3



Solution 3

(a)

Mark scheme

- - Seasonal migration (transhumance) to move herds to grazing lands and/or water sources.
- - Migration to areas with more rainfall during the dry season.
- - Migration because the region's climate (arid or semi-arid) is too dry to support grazing year-round and/or to reduce stress on land that has been grazed.
- - Movement southward during the dry season and/or northward during the wet season.
- - Migration patterns based on cultural or agricultural practices.

Solution 3

(b)

Mark scheme

- - Overgrazing has removed the grass cover and/or damaged the soil.
- - Human population growth and the use of arid land for growing food and/or demand for water have placed the land under added stress.
- - Runoff, wind, and/or erosion has removed fertile topsoil.
- - Soil erosion caused by climate change, natural drought, increasingly dry climate and/or human activities.
- - The use of wood for fuel and building materials has removed natural scrub or shrub landscapes.

Solution 3

(c) Mark scheme

- - Pastoral nomadism affects land use patterns in the region, with much land used for grazing, leaving an imprint of agricultural patterns (e.g., migration routes, traditional sites for seasonal settlements, watering sites, market locations, corrals, animal pens) on the cultural landscape.
- - Pastoral nomadism contributes to specific cultural identities and/or shared practices in groups with migrant lifestyles, leaving an imprint on the landscape (e.g., types of temporary settlements, meeting places, market locations) and/or infrastructure that supports communication (e.g., signs, cell phone towers).

Solution 3

- - Pastoral nomadism affects the built environment, with many nomadic herders constructing portable and/or seasonal (temporary) dwellings.
- - Pastoral nomads follow long-established seasonal migration routes or seasonal temporary settlements, thus maintaining local traditions and/or agricultural practices (e.g., animal husbandry, dairying, celebrations) that leave an imprint on the cultural landscape.

Solution 3

(d) Mark scheme

- - The availability of annual or seasonal rainfall (e.g., drought) results in crop or animal losses.
- - Variables and/or extremes in annual and/or seasonal temperatures may prevent or enable the cultivation of certain plant crops or animals.
- - Farming is affected by floods in areas where there are seasonal monsoons, hurricanes, and/or intense storms.
- - Farming is affected by changes in temperature or rainfall which may cause farmers to substitute one crop for another, and/or change farming techniques.

Solution 3

- - Changes in temperature, precipitation, frequency, and/or the intensity of storms may limit plant crops or impact the overall health of animals.

Solution 3

(e) Mark scheme

- - Nomadic herders may have to make detours to avoid crossing protected natural areas, or use corridors established by governments, thus altering their traditional migration routes.
- - Newly expanded protected natural areas may disrupt established migration routes traditionally used by nomadic herders.
- - Protected natural areas may bring nomadic herders into conflict with conservation organizations or forestry services as they may differ on the use of protected areas for grazing, and/or concern about the impact of herding on natural habitats.

Solution 3

- - Nomadic herders who travel through or graze animals in protected areas may risk legal consequences (e.g., fines) and begin to avoid those routes.
- - Protected areas may preserve grassland habitat and/or prevent the loss of potential grazing lands, allowing nomadic herders to continue their traditional migration routes.
- - Protected areas may conserve traditional migration routes for herders under agreements with governments or conservation organizations.
- - Nomadic herders who cross international borders may encounter tensions with government officials who enforce migration policies and/or inspect for contraband items.

Solution 3

(f) Mark scheme

- - Increased use of irrigation may increase the amount of land that can be cultivated for crops, cutting off migration routes and/or limiting the use of such lands for transporting or grazing herds during seasonal migrations.
- - Increased use of irrigation may increase the amount of land that can be cultivated for crops and eliminate areas where nomadic herders could set up temporary settlements and/or corrals or pens.
- - Increased use of irrigation may deplete water supplies used by nomadic herders and/or cause competition between herders and farmers to water livestock and/or crops during pasturing or seasonal migrations.

Solution 3

- - Overuse of irrigation in dryland (arid) environments may lead to soil salinization that could reduce the amount of food for animals (forage) or land for grazing that is available for migrating herds.
- - Irrigation may lead to runoff carrying chemical fertilizer or pesticides into bodies of water where herders drink and/or water their livestock, increasing tensions between nomadic herders and farmers.

Solution 3

(g) Mark scheme

- To earn the point, state a DEGREE (high, moderate, or low) to which communication technologies affect the cultural pattern AND support it with a valid justification.
- For a HIGH degree (technology erodes indigenous culture):
 - - Increased use of mobile phones, television, and/or the internet may expose herders to outside cultural influences and make herder culture less unique, or expose nomadic herders to the norms of external communities.
 - - Increased use of global communication systems may push herders toward more widely spoken languages, making indigenous language use less common.

Solution 3

- - Increased consumption of external music, literature, art, and/or holidays may diminish herders' interest in maintaining indigenous traditions.
- For a MODERATE or LOW degree (culture is protected or unchanged):
- - Increased exposure to outside influences may instead mobilize nomadic herders to unite to protect their culture, strengthening cultural identity.
- - Limited access to communication technologies (cost or connectivity) may hinder cultural convergence.
- - Nomadic herder communities may reject communication technologies to resist globalization and/or maintain traditional lifestyles.