Revision and Assessment Pack 1

Junior Secondary

# Exploring Geography

Third Edition

Sample

# Revision Worksheets

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# Contents

# 3 Food problems

## 1 Where does our food come from?

### 1.1 Is the Mainland a major supplier of our food?

Textbook pp. 3–4

In Hong Kong, most of the food we consumed is ___imported___, for example, fresh vegetables from the Mainland. The Mainland is one of our major food suppliers.

### 1.2 What is farming? What is a farming system?

Textbook pp. 5–7

1 Complete the chart below to find out the meaning of farming.

**Farming**

(Also known as ___agriculture___)

includes

The growing of ___crops___

The rearing of ___livestock___

2 Crops and livestock produced from farms are called ___farm produce___. They can be used as food for people or ___raw materials___ for industries.

3 Complete the flow chart below to show the farming system of a vegetable farm.

**Inputs**

Physical

- Sunlight
- Air temperature
- Rainfall
- Seeds
- Land
- Soil nutrients

Cultural /Human

- Capital
- Fertilizers
- Technology
- Labour
- Pesticides
- Irrigation system
- Machines

**Farming processes**

- Ploughing
- Irrigating
- Fertilizing
- Harvesting

**Outputs**

- Farm produce, e.g. tomatoes and lettuce
- Crop residues
- Pollutants

Food for farmers ← Subsistence crop

Cash crops sold on markets

Money → Feedback

(Credit: Saarctour/Wikimedia Commons)

## 1.3 What are the major types of farming?

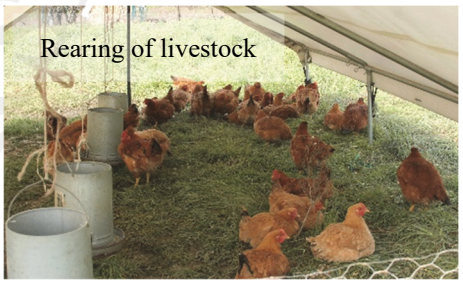
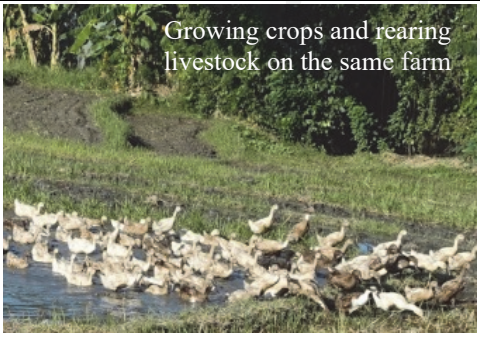
Textbook pp. 8–9

Fill in the tables below to show different types of farming based on the following criteria.

### 1 Amount of inputs/outputs per unit area of land

| a ___Intensive___ farming | b ___Extensive___ farming |
|---|---|
|  <br>(Credit: Brad Collis/Flickr)<br>• ( High / Low ) inputs (e.g. labour, capital) and outputs per unit area of land<br>• Farms can be large or small |  <br>(Credit: USDA NRCS Texas/Wikimedia Commons)<br>• ( High / Low ) inputs (e.g. labour, capital) and outputs per unit area of land<br>• Farms are usually ( large / small ) |

### 2 Types of outputs

| a ___Arable___ farming | b ___Pastoral___ farming |
|---|---|
|  <br>Growing of crops |  <br>Rearing of livestock<br>(Credit: Bob Zoller/Wikimedia Commons) |
| c ___Mixed___ farming | |
|  <br>Growing crops and rearing livestock on the same farm | |

## 3 Uses of outputs

| a ___Subsistence___ farming | b ___Commercial___ farming |
|---|---|
|  |  |
| Farm produce is used as food for the ___farmers___ and their ___families___ | Farm produce is for ___sale___ |

## 4 Level of technology

| a ___High___-technology farming | b ___Low___-technology farming |
|---|---|
|  |  |
| (Credit: Jolin/Dreamstime.com) | (Credit: Jayaseerlourdhurai/Wikimedia Commons) |
| • Uses ___modern___ and advanced farming technologies, e.g. biotechnology<br>• Relies on ___machines___ and uses a lot of ___fuel___ to run the farm | • Uses simple and ___traditional___ farming methods<br>• Relies on ___animals___ and ___human___ power to do the farm work |

# 1.4 What farming activities are practised in different parts of the world?

Textbook pp. 10–11

| Farming activity | Characteristic |
|---|---|
| **1** Market **gardening** in the Netherlands<br>  <br>(Credit: -JvL-/Flickr) | • Farm size: ( Small / Large )<br>• Typical cultural inputs: Technology (such as computers) and irrigation systems<br>• Farm produce: Cash crops, mainly vegetables and flowers |
| **2** Rice **cultivation** in upland areas of Laos<br>  <br>(Credit: wuttichok/iStock.com) | • Farm size: ( Small / Large )<br>• Typical cultural inputs: Labour and simple farm tools<br>• Farm produce: Rice, mainly for ( sale / own consumption ) |
| **3** Wheat-sheep **farming** in South-east Australia<br>  <br>(Credit: bhojman/Flickr) | • Farm size: ( Small / Large )<br>• Typical cultural inputs: Technology, large farm machines and irrigation systems<br>• Farm produce: Wheat, wool and mutton, mainly for ( sale / own consumption ) |

| Farming activity | Characteristic |
|---|---|
| **4** Dairy **farming** in New Zealand<br>  <br>(Credit: Dave Young/Flickr) | • Farm size: ( Small / Large )<br>• Typical cultural inputs: Technology and machines<br>• Farm produce: Milk and dairy products, mainly for ( sale / own consumption ) |
| **5** Wheat **farming** in central USA<br>  <br>(Credit: Montgomery County Planning Commission/Flickr) | • Farm size: ( Small / Large )<br>• Typical cultural inputs: Technology, large farm machines and irrigation systems<br>• Farm produce: Wheat, mainly for ( sale / own consumption ) |
| **6** Beef cattle **rearing** in Argentina<br>  <br>(Credit: JohnnyGreig/iStock.com) | • Farm size: ( Small / Large )<br>• Typical cultural inputs: Labour and technology<br>• Farm produce: Beef, mainly for ( sale / own consumption ) |

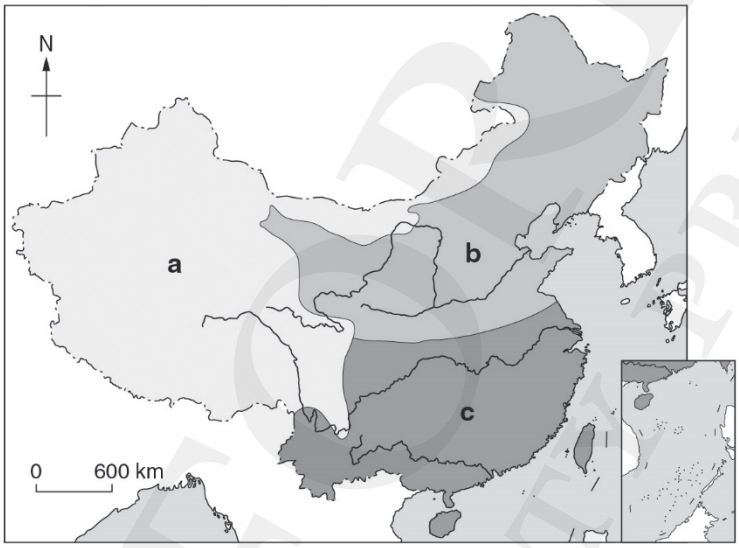
# 2 Where are the farming activities in China?

## 2.1 Where are the major farming regions in China?

Textbook pp. 14–15

1 A farming region is an area where farmers grow the same major types of ___crops___ or raise the same major types of ___livestock___, using similar ___farming___ methods.

2 There are three major farming regions in China. Fill in the table below to show these three farming regions and their characteristics.




| | Farm size | Farming type | Major outputs |
|---|---|---|---|
| **a** ___North-west___ China | ( Large / Small ) | • ( Arable / Pastoral ) • ( Intensive / Extensive ) | ___Meat___, milk and ___wool___ |
| **b** ___North___ and North-east China | ( Large / Small ) | • ( Arable / Pastoral ) • ( Intensive / Extensive ) | ___Wheat___, corn, potato, ___millet___ and soybean |
| **c** ___South___ China | ( Large / Small ) | • ( Arable / Pastoral ) • ( Intensive / Extensive ) | ___Rice___, vegetables and tropical fruits |

# 2.2 What factors affect the distribution of farming regions in China?

Textbook pp. 16–20

Complete the table below to show the major factors affecting the distribution of farming regions in China.

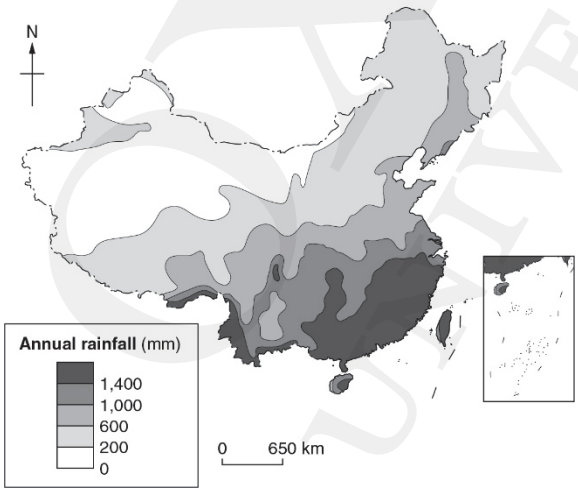
**Factors affecting the distribution of farming regions**

## A Climate

- It refers to the average ___weather___ conditions of a place over many years
- Rainfall and air temperature affect the ___length___ of the growing season. Growing season refers to the ___period of a year when crops can be grown.___

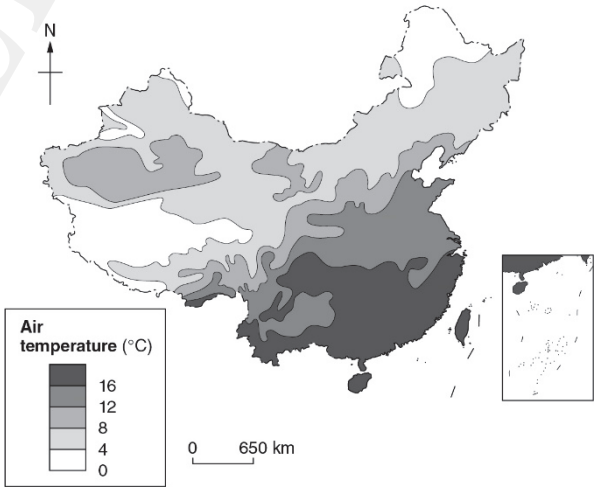
### a Rainfall

- Rainfall generally ( decreases / increases ) from south-east to north-west in China
- South China: ( High / Low ) rainfall, paddy is grown
  North China: ( Higher / Lower ) rainfall than South China, wheat is grown
- Places with low rainfall where only grass can grow: (Arable/Pastoral) farming is practised




### b Air temperature

- In general, air temperature decreases from ( south / north ) to ( south/ north ) in China
- South China has a ( long / short ) growing season. Therefore, this region is favourable for ( arable / pastoral ) farming



**Factors affecting the distribution of farming regions**

## B Relief

- It is the shape of the land, including height and steepness
- In China, the height of land decreases from ( east / west ) to ( east / west )
- Western China

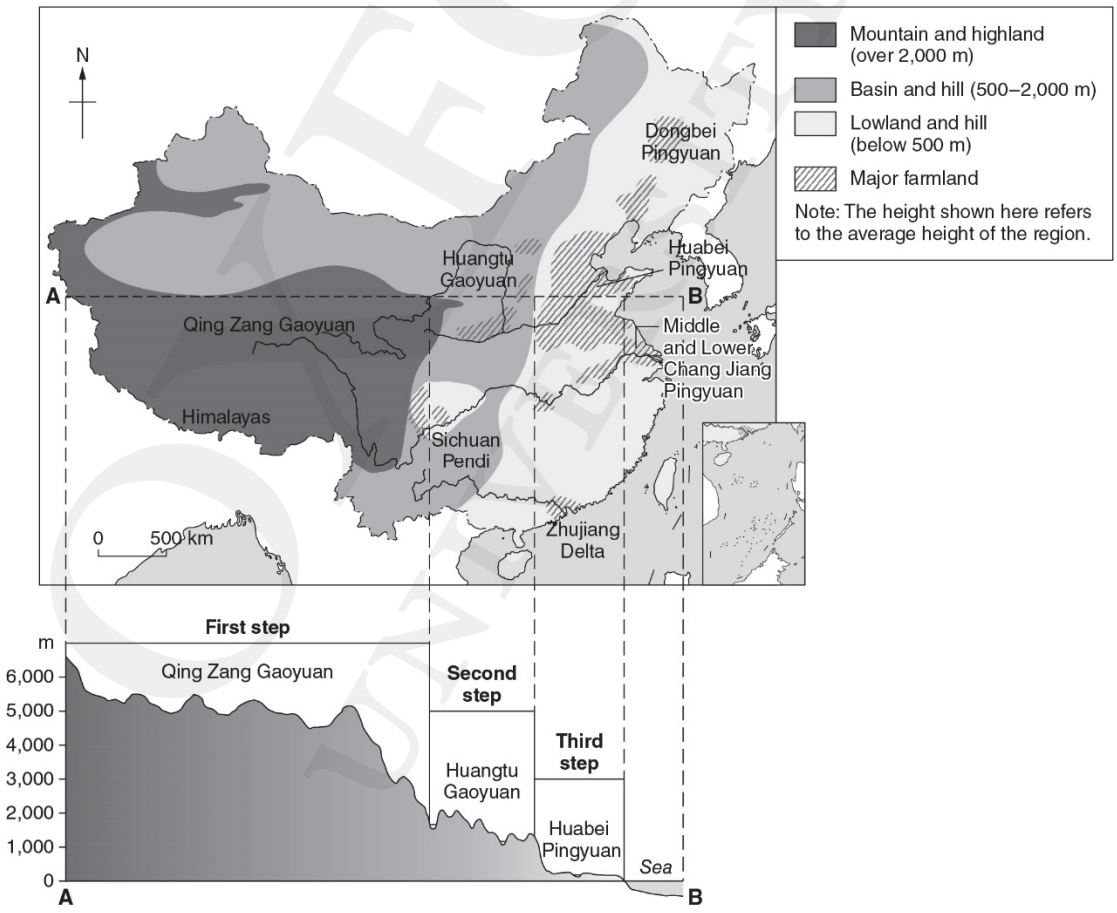
  - Mountainous, with steep slopes and rugged relief. Example of major highlands: the Himalaya/Qing Zang Gaoyuan or other relevant answers
  - Soil is ( thick / thin ) and infertile, only suitable for growing grass

  ↳ Suitable to carry out ( arable / pastoral ) farming

Eastern China

- Most areas are plains and basins. Example of major plains: Dongbei/Huabei Pingyuan/Middle and Lower Chang Jiang Pingyuan and Zhujiang Delta
- Soil is ( fertile / infertile )

↳ Suitable to carry out ( arable / pastoral ) farming. The best farmland is found along the river valleys or along the coast in this region



# 3 Can we produce enough food for our growing population?

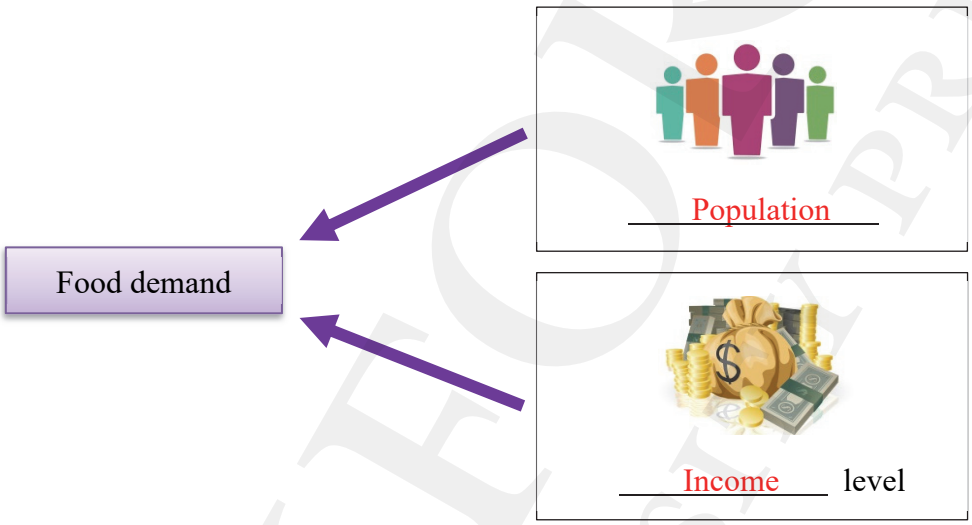
## 3.1 What affects food demand and supply?

Textbook pp. 22–4

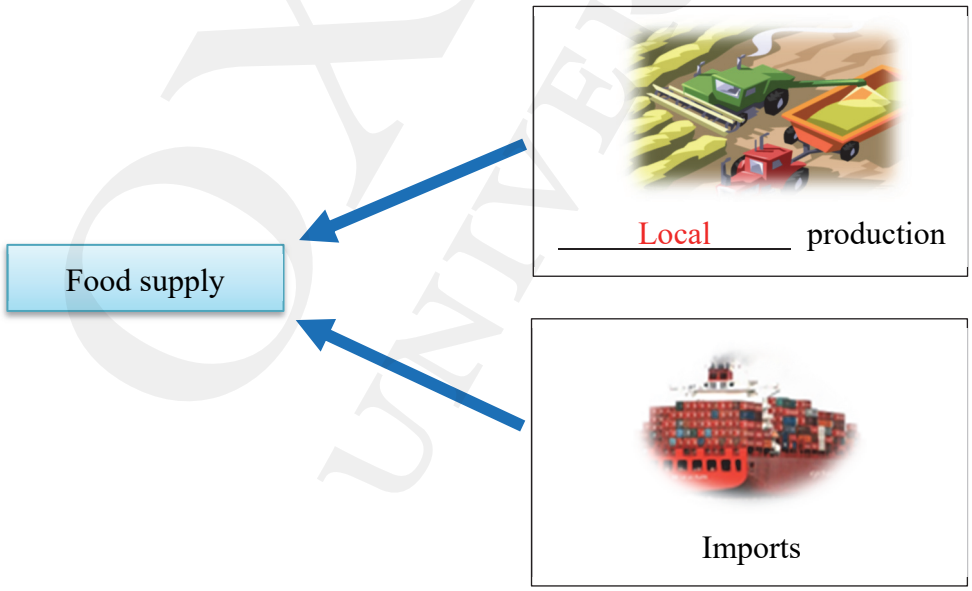
1 Food is important for the security and development of a country because

- enough food provides energy for people to work, this enhances ___economic___ growth;
- insufficient food will lead to food shortages. This will slow down economic development, or even result in ___social unrest___.

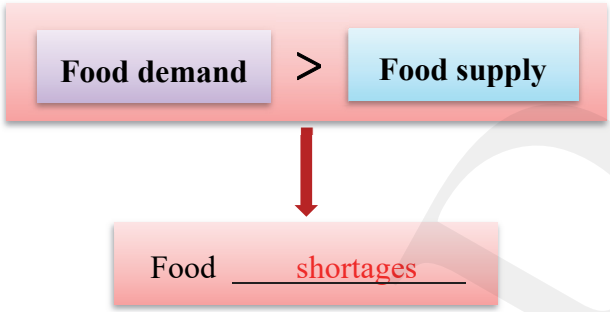
2 What factors affect food demand? Write your answer in the blanks below.




3 What factors affect food supply? Write your answer in the blank below.



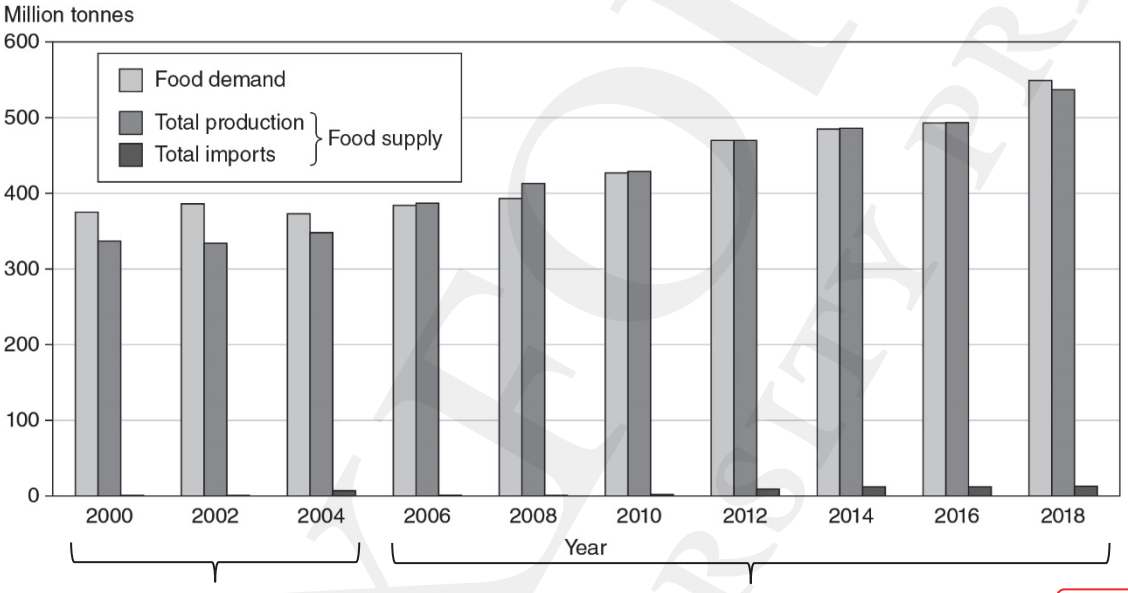
4 What will happen when the food demand is greater than the supply? Write your answer in the blank below.




## 3.2 Are we producing enough food for our people?

Textbook pp. 25–6

The bar graph below shows the food demand and supply of China between 2000 and 2018.




Between 2000 and 2004, food supply was ( larger / smaller ) than food demand

- Between 2006 and 2018, food supply was ( larger / smaller ) than food demand
- Most of the food came from ___local production___, only a small amount of food came from ___imports___.

↳ China produced enough food for its people. It had a ( high / low ) self-sufficiency rate of food

# 4 What are the major farming problems in China?

## 4.1 Why is there insufficient arable land in China?

Textbook pp. 30–5

1 Complete the flow chart below about the causes of limited arable land in China.

a Harsh climate

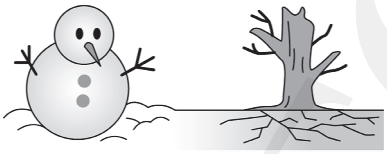
North-west, North and North-east China:

Very cold and long winters

→ ( Short / Long ) growing season

+

( Low / High ) rainfall



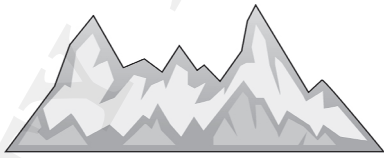
b Hilly relief

Western China:

( Gentle relief / Rugged relief ) with many highlands and mountains

+

Soil erosion is serious on steep slopes → Soil is thin and infertile



Limited amount of arable land in China

Further reduces

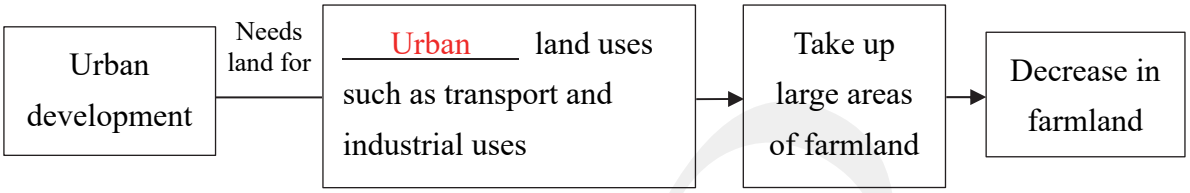
c Loss of farmland due to:

i Urban development

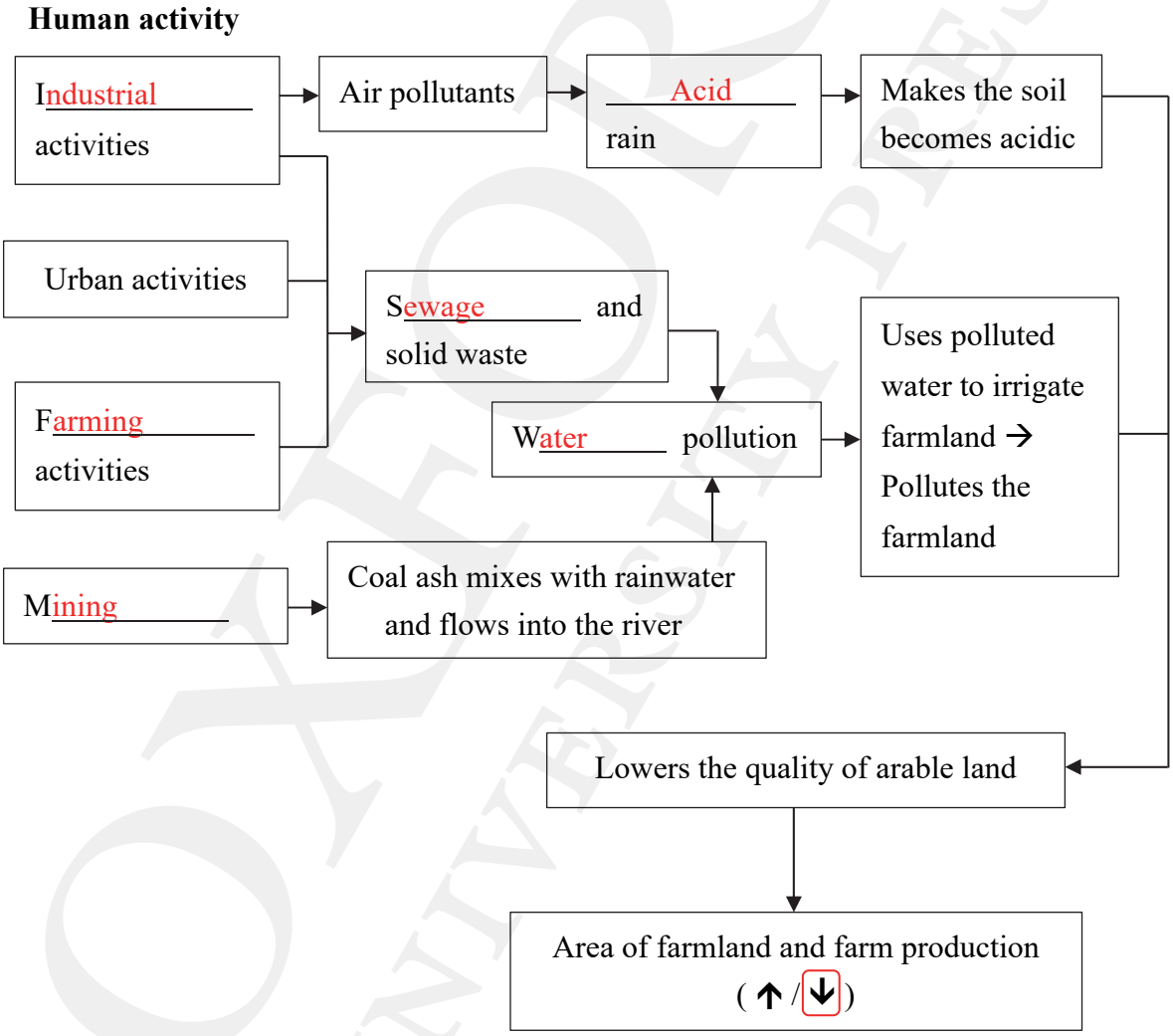
ii Environmental pollution

iii Improper farming methods

2 a Complete the flow chart below to show how the human factor c(i) listed on p. 12 causes a loss of farmland in China.




b Complete the flow chart below to show how human activities cause environmental problem mentioned in c(ii) listed on p. 12, which lead to a loss of farmland in China.



c Complete the flow chart below to show how improper farming methods c(iii) mentioned on p. 12 cause a loss of farmland in China.

Areas with poor soil, e.g. areas around deserts

People remove natural ___vegetation___ for farming

People cut trees to obtain ___fuelwood___

Grow too many crops

Without vegetation cover, wind and water easily carry away the ___topsoil___

Over-___cultivation___ occurs

Soil ___erosion___ occurs

In the long run

Soil ___nutrients___ and moisture are used up quickly

Land productivity ( ↑ / ↓ )

In the long run

___Desertification___

(Credit: Richard Allaway/Flickr)

Land becomes unproductive

Loss of farmland

## 4.2 What natural hazards do farmers face in China?

Textbook pp. 36–7

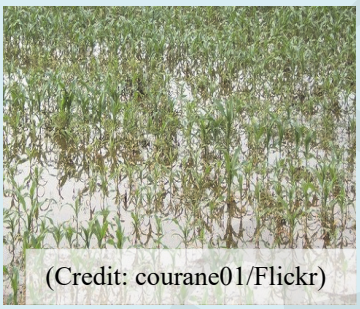
The following are natural hazards (1–5) that Chinese farmers have to face. Fill in the blanks to show the hazards and how they affect farming.

**1** Droughts

(Credit: Marufish/Flickr)

- Occurs when there is a long period without any rain or when rainfall is much lower than normal
- Soil too dry → Crops cannot grow

**2** Floods



(Credit: courane01/Flickr)

- Usually occurs on flat land after a long period of rain
- Floodwater drowns crops

**3** Extreme cold weather

- Occurs when air temperatures are extremely low
- Hinders plant growth, damages crops or even kills them

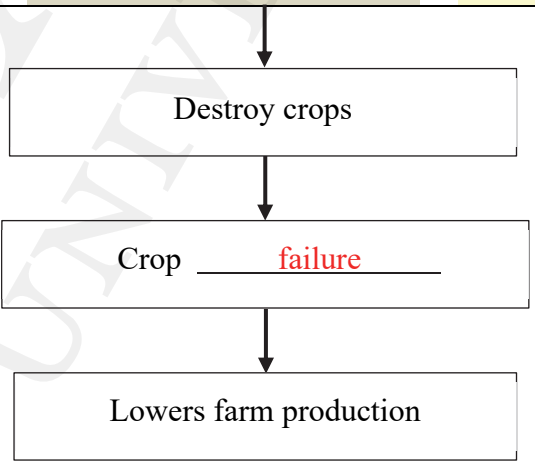
**4** Typhoons

- Brings strong winds and heavy rain
- Strong winds damage crops and heavy rain drowns crops

**5** Pests (such as locusts/fruit flies)

(Credit: Vvoevale/Dreamstime.com)

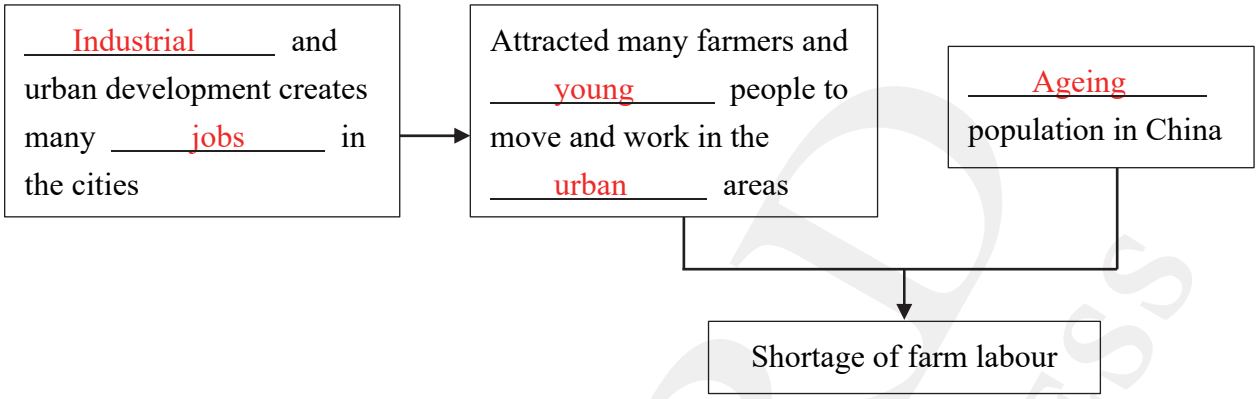
They eat up and damage crops



## 4.3 What has caused the shortage of farm labour in China?

Textbook p. 38

Complete the flow chart below to show the causes of shortage of farm labour in China.




# 5 Are scientific farming methods effective to solve the farming problems in China?

## 5.1 What are scientific farming methods?

Textbook p. 41

Scientific farming methods refer to the use of technology in farming. By adopting scientific farming methods, some of the farming problems can be solved so as to increase crop yields.

## 5.2 What are the advantages and negative impacts of using irrigation systems?

Textbook pp. 42–3

1 Complete the flow chart below to show the advantages of irrigation.

**Irrigation system**

Irrigation water from surface water (e.g. reservoirs and rivers) and groundwater

Sprinkler irrigation

(Credit: Federico Rostagno/Shutterstock.com)

Increases water supply in dry areas

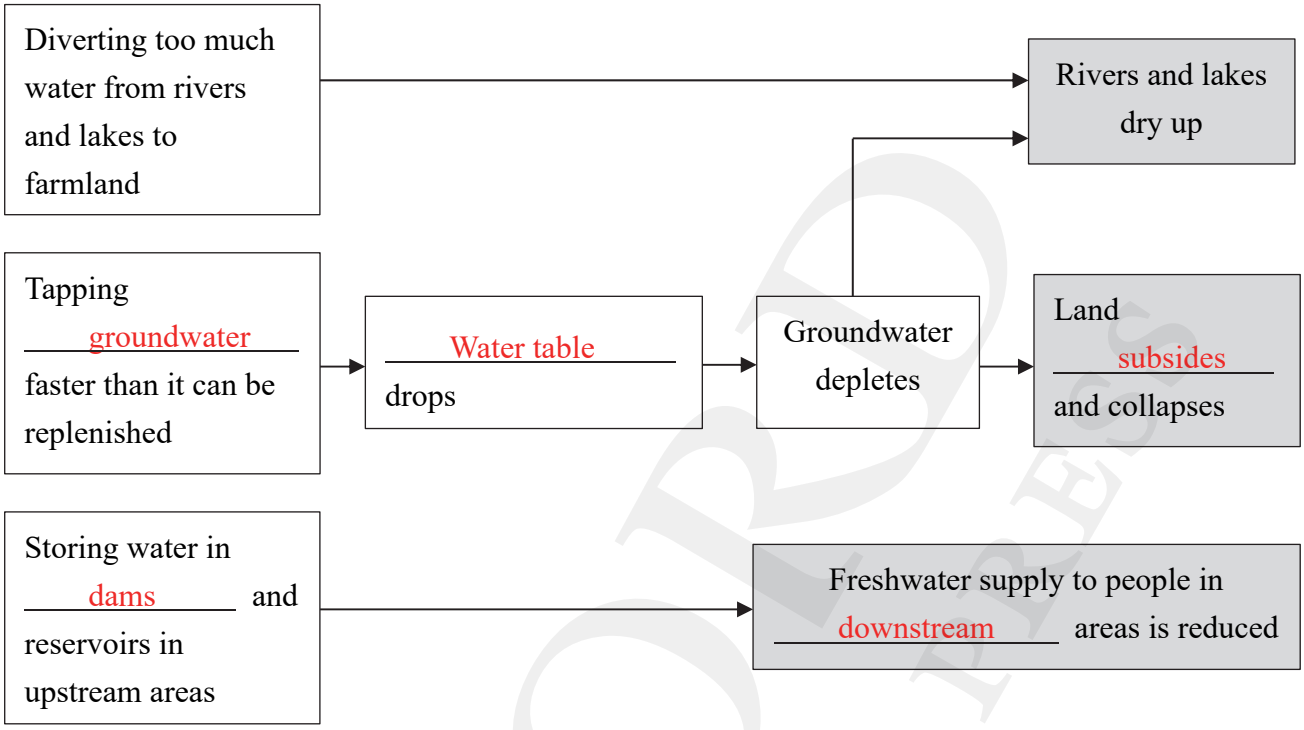
Increases farming area

Higher crop yields

Provides a stable supply of water all year round

- Lengthens the growing season
- More choices of crop
- (More / Fewer ) crops can be grown in a field

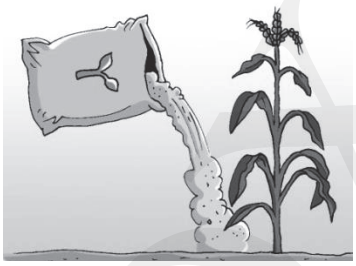
2 What are the negative impacts of using irrigation systems? Complete the flow chart to show.




## 5.3 What are the advantages and negative impacts of using chemicals?

Textbook pp. 44–6

1 Complete the table below to show the advantages of using chemicals.

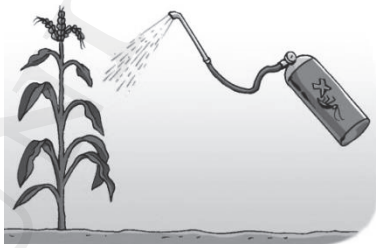


a Chemical fertilizers

- Makes the soil fertile/rich
- Increases crop yields
- Improves crop quality

b Pesticides

- Controls pests
- Reduces the risk of crop failure



c Herbicide/Weedicide

- Controls weeds
- Increases crop yields

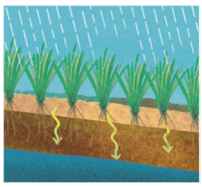
2 Complete the flow chart below about the negative impact of overusing chemical fertilizers on the natural environment and people's health.

**Using too many chemical fertilizers**

Excessive chemical fertilizers are

In the long run

Washed down into groundwater



Washed into rivers and lakes by rainwater

Alter the acidity of the soil

Nitrogen in chemical fertilizers are released into the air as nitrous oxide (a greenhouse gas)

Water pollution

More nutrients for algae

Contaminate soil, making it unsuitable for farming

Intensifies the greenhouse effect and causes global warming

Rapid growth of algae

(Credit: eutrophication&hypoxia/Flickr)

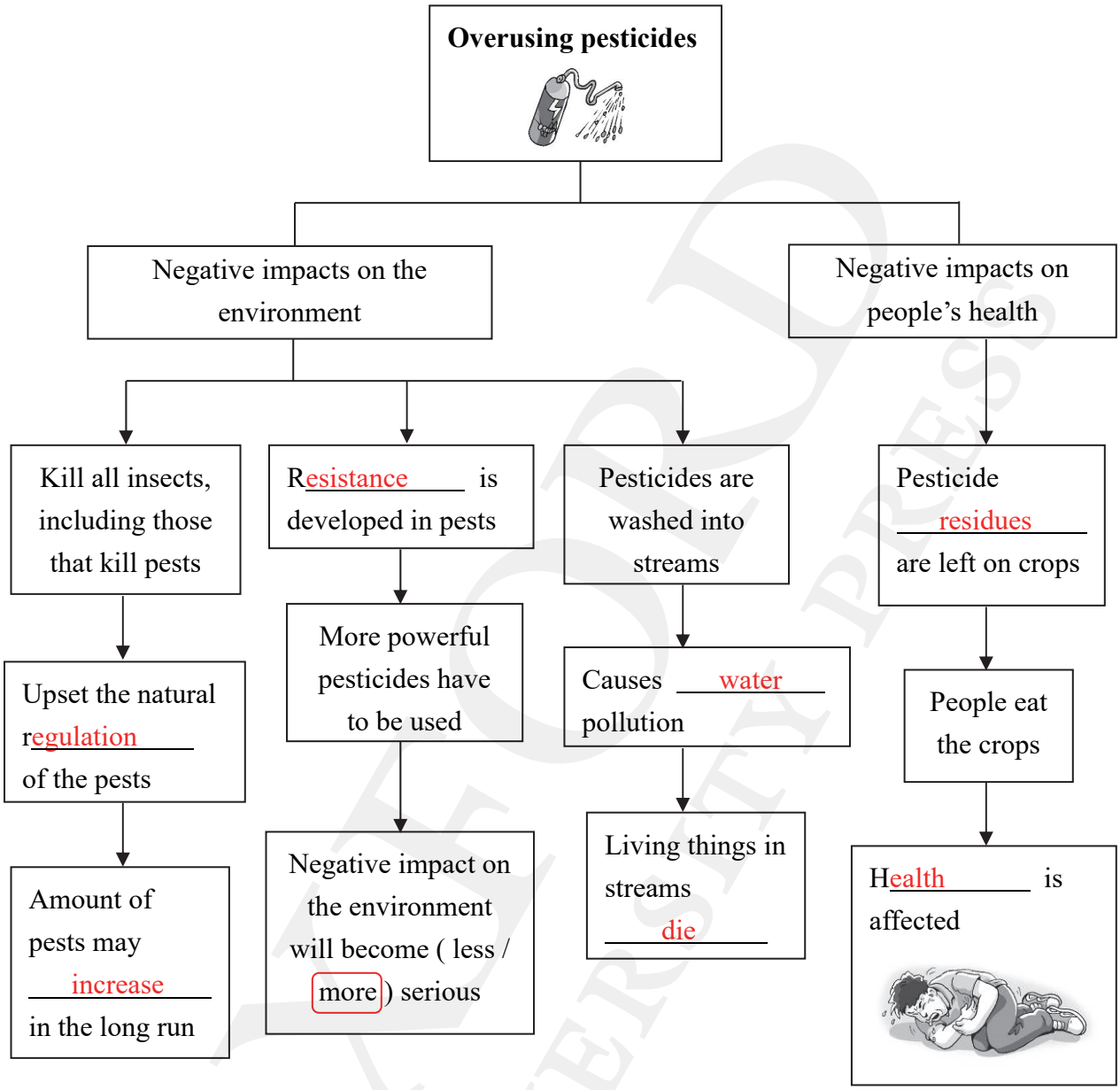
People consume farm produce with high levels of chemicals

Cause diseases, such as harming kidneys and livers

Use up oxygen in the water

Death of living things in the rivers and lakes

3 What are the negative impacts of overusing pesticides? Complete the chart below to show.




## 5.4 What are the advantages and negative impacts of using machines?

Textbook p. 47

Complete the table below about the advantages and negative impacts of using machines.

| Advantages | Negative impacts |
|---|---|
| Using farming machines, such as tractors, to do farm work helps solve the problem of labour shortage and improve farming efficiency | Combustion of fossil fuels in farming machines → Releases greenhouse gases → Intensifies the greenhouse effect and causes global warming |

## 5.5 What are the advantages and negative impacts of growing crops in greenhouses?

Textbook pp. 48–9

Complete the table below to show the advantages and negative impacts of using greenhouses to grow crops.

(Credit: Verbal.noun/Wikimedia Commons)

| Advantages | Negative impacts |
|---|---|
| • In a greenhouse, the environmental conditions (e.g. air temperature and water supply) are controlled<br>• Helps lengthen the growing season and increases the choices of crops<br>• Reduces the risk of crop failure caused by extreme weather conditions and pests<br>→ Ensures high crop yields and profits | • ( High / Low ) construction and operation costs of advanced greenhouses<br>• Heating requires the combustion of fossil fuels → Releases greenhouse gases<br>→ Intensifies the greenhouse effect |

## 5.6 What are the advantages and negative impacts of using genetic engineering?

Textbook pp. 50–1

Complete the flow chart below to show the advantages and negative impacts of using genetic engineering.

| **Advantages** | | |
|---|---|---|
| Tolerant to higher or lower air temperatures<br>↓<br>Extends the growing season of crops | Tolerant to drought<br>↓<br>Needs less water to grow and therefore can grow in dry areas | Tolerant to pest attacks and diseases<br>↓<br>Reduces crop failure |

↑

Genetically modified (GM) crops are crops which have their genes modified

↓

| **Negative impacts** | |
|---|---|
| On the environment | On food safety |
| • Eliminates pests, weeds and other plants, species depending on them may die → Reduces biodiversity<br>• Toxins in pest-resistant GM crops may harm other organisms<br>• May contaminate other non-GM crops through pollination |  <br>(Credit: Bogdan Wańkowicz/Dreamstine.com)<br>Transferred gene in GM crops may cause allergies and other unexpected risks on humans |

## 5.7 What are the limitations of using scientific farming methods?

Textbook p. 54

When using scientific farming methods, farmers need:

- Capital: Money is needed for using scientific farming methods, such as buying chemicals and carrying out 'research and development' on new crop species.
- Technological know-how: Knowledge or high education level is needed for appropriate use of scientific farming methods.

# 6 Are there other ways to solve the farming problems in China?

## 6.1 What is sustainable farming?

Textbook pp. 59–60

Sustainable farming meets the following principles to produce food:

- e<u>conomic</u> <u>growth</u> – farmers can earn enough money to support themselves and sustain food production
- s<u>ocial</u> progress – food produced is affordable as well as safe and healthy to eat
- e<u>nvironmental</u> c<u>onservation</u> – conserve natural resources and do not harm the environment during food production

## 6.2 What are the sustainable farming methods used in China?

Textbook pp. 61–4

1 In sustainable farming, farmers have to reduce the use of <u>chemicals</u> and conserve <u>soil</u> and water.

**A Avoid the use of chemicals**

2 Farmers can adopt the natural methods listed in the table below to improve soil fertility and control pests, instead of using chemicals.

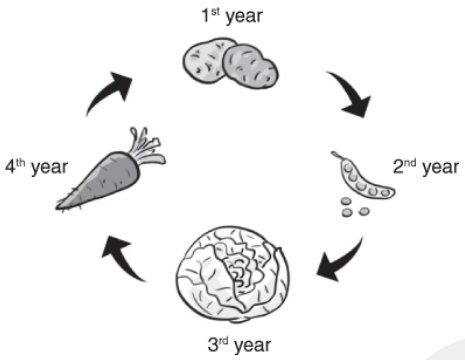
| <u>Organic fertilizers</u> | Natural <u>predators</u> | Plants with a strong smell |
|---|---|---|
| Use <u>compost</u> made from dead plants or manure from livestock to enrich the soil fertility | Have some insects to keep away pests, such as spiders to control the amount of rice pests | Grow strong smell plants, e.g. <u>chillies/spring onions</u> (name ONE example), in the same field to discourage pests from getting close to crops  |

## B Conserve soil and water

3 Complete the table below to show the farming methods that can conserve soil and water.

**a** Crop rotation

Growing different crops each year on the same field

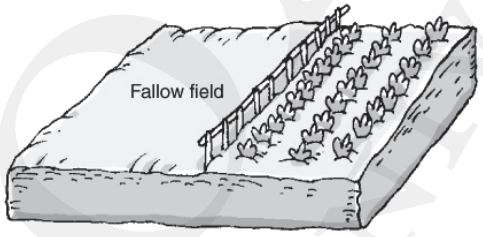



Advantages:

- Avoids using up particular nutrients in the soil
- Maintains soil fertility
- Helps control pests as it interrupts life cycle of the pests

**b** Fallowing

Leaving the field to rest for a period of time




Advantage:

Soil can have time to recover its nutrients

**c** Mixed farming

Growing crops and rearing livestock in the same field

Advantage:

Manure from livestock provides nutrients for the soil

**d** Drip irrigation

- Using suitable amounts of water to irrigate crops
- Delivering water directly to plant's roots
- Suitable amounts of fertilizers can be added in the irrigation water

(Credit: Arturoosorno/Shutterstock.com)

Advantages:

- Reduces water wastage and loss of water through evaporation
- Avoid overusing fertilizers

# 6.3 What are the other solutions to the farming problems in China?

Textbook pp. 65–6

## A Manage land uses in a better way

1 Complete the flow chart below to show the measures adopted by the central government to protect farmland.

**Maintain the total area of farmland**

- Reserved 104 million hectares of farmland as prime farmland
- Restrict development on these farmland

→ Help protect farmland from being converted to other land uses

**Restrict farming in areas with poor soil**

**Restore degraded land**

- Turning degraded farmland back to woodland or grassland
- Replanting vegetation on eroded slopes

→ Prevent soil erosion and desertification

→ Help protect productive farmland nearby

## B Encourage farm specialisation

2 Farm specialisation refers to the growing of a particular type or only a few types of crops in regions with favourable farming conditions. The advantages include:

- speeds up farm mechanisation as farm machines can be used more effectively
- increases land and farm productivity
- raises the skill levels of farmers in terms of food production

## C Provide more government support

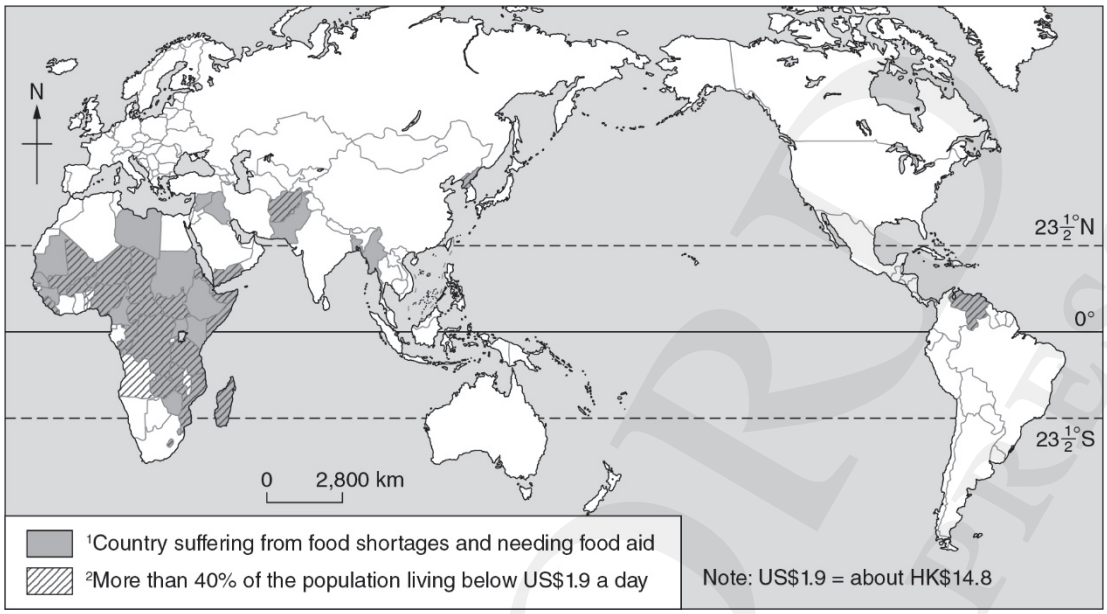
3 It is important to have government support to help improve farming productivity. Examples are:

- providing subsidies to farmers to buy suitable and advanced farming machines and improved seeds
- providing information, training and technical support to farmers on how to use farming machines and technologies
- improving infrastructure, such as irrigation systems to support the development of agriculture
- carrying out reward systems to encourage farmers to use more environmentally friendly farming practices

# 7 Are other parts of the world facing food problems?

## 7.1 Where are food shortages most likely to occur?

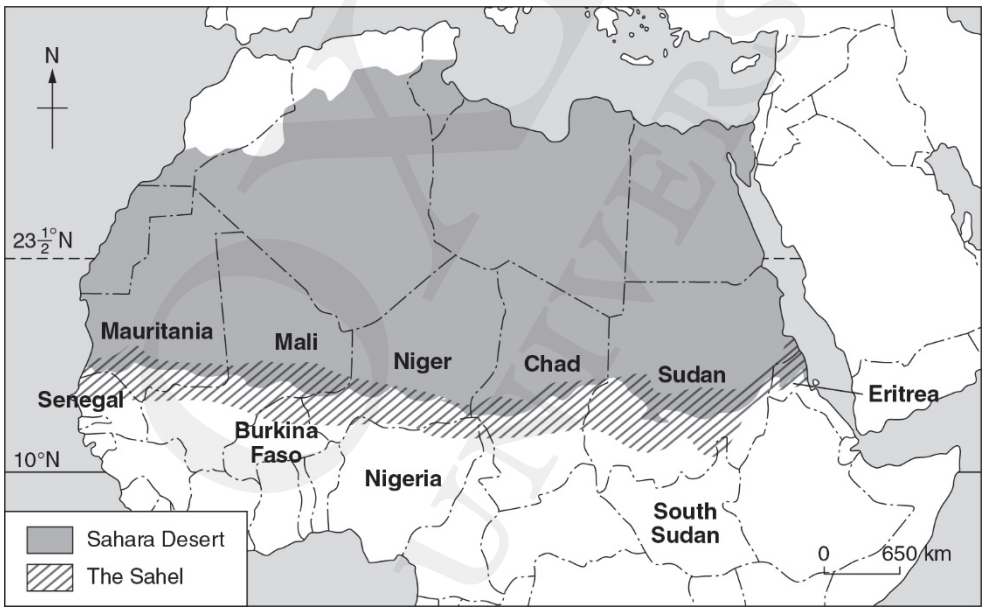
Textbook pp. 71–2




Food shortages are mostly found in the ( less / more ) developed countries. These countries have a ( high / low ) level of development.

## 7.2 What are the causes of food shortages in the Sahel? What are the solutions?

Textbook pp. 73–7




1 The Sahel is located to the south of the Sahara Desert . It is a semi-arid area.

## A Causes of food shortages in the Sahel

2 Complete the table below to show the causes of food shortages in the Sahel.

**a Harsh climate**

- ( High / Low ) temperatures
- ( High / Low ) evaporation rate
- ( High / Low ) and unreliable rainfall

→ ( Low / High ) crop yields

**b Natural hazards**

Drougths, floods and pests frequently occur in the Sahel

→ Crop failure and death of livestock

**c Poor soil**

Soil is ( thick / thin ) and infertile

→ Unfavourable for farming

**d Low farming technology**

- The education level and literacy rate of farmers are low
- They can only use simple and traditional farming methods

→ Low local food production

**e Poverty**

Many Sahel people work as farmers. Their incomes are ( high / low )

→ Not enough money to buy food from the market or import food

**f Wars and conflict**

Frequent wars and conflict disrupt the farm production

→ Destroys crops and causes low local food production

**g Poor government practices**

Some countries in the Sahel have corrupt governments

→ May sell the food aid for money or refuse food aid

**h Rapid population growth**

- ( Small / Large ) population
- ( Low / High ) population growth rate

→ Great demand for food

Factor causing low food supply

Factor causing large food demand

## B Solutions to food shortages in the Sahel

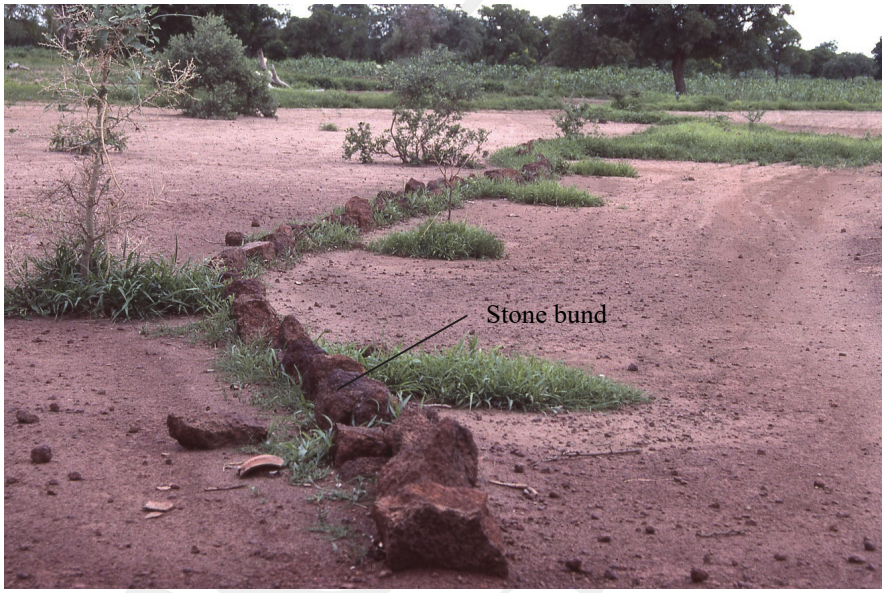
### a Provide food aid

This is the most direct and immediate solution to food shortages in the Sahel.

### b Improve farming methods

Teach local farmers farming methods that fit the local conditions as well as conserve soil and water.

| Soil conserving farming method | |
|---|---|
| | i Carry out crop rotation<br>Rotate millet with different crops to prevent depletion of certain soil nutrients |
| | ii Cover fields with crop residues<br>Leave crop residues or leaves on the field so as to protect it from soil erosion<br>  <br> |
| | iii Use compost<br>Use dung, peanut shells and vegetable matter as compost to increase soil fertility |
| | iv Grow trees and bushes in the cropland<br>Grow trees and bushes with roots that can fix nitrogen (a soil nutrient) to improve soil fertility |

| | |
|---|---|
| **Water conserving farming methods** | v Dig small ___pits___ of different shapes to catch water |
| | vi Build stone/earth bunds as barriers to slow down the flow of ___water___ over the land surface and allow rainwater to seep into the soil<br>  <br><br>(Credit: Robert_Ford/iStock.com) |

**c Reduce poverty**

- Develop the rural economy through setting up ___small___- scale industries, such as fruit-processing factories → Increases jobs and diversifies ___sources___of income
- Build/Improve rural ___infrastructure___, such as providing a reliable electricity supply to support ___economic___ development

**d Carry out birth control**

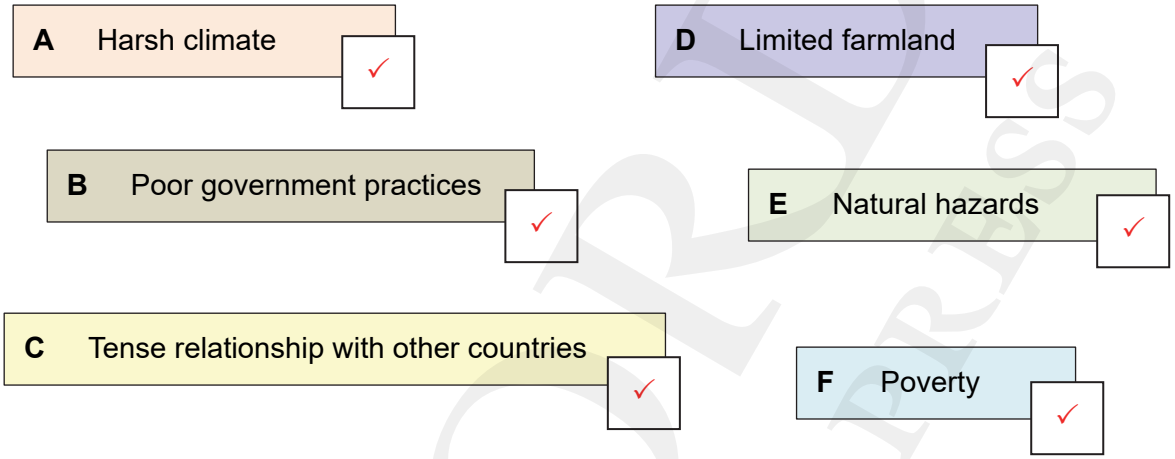
Encourage birth control to lower the ___birth rate___ → Reduce the food demand

# What are the causes of food shortages in North Korea? What are the solutions?

Textbook pp. 79–81

## A Causes of food shortages in North Korea

1 a What are the causes of food shortages in North Korea? Put a tick '✓'in the appropriate boxes.




b Classify the above causes into physical and human factors. Write down the letters in the table below.

| | |
|---|---|
| **Physical factor** | A, D, E |
| **Human factor** | B, C, F |

## B Solutions to food shortages in North Korea

2 Provide _____food aid_____, especially in times of bad harvest. The most important food supplier is _____China_____.

3 The government has adopted several methods to improve farm production so as to increase food supply:

- breed _____high-yield_____ crop species
- promote the use of advanced farming techniques, such as greenhouse farming
- encourage organic _____ farming
- allow farming household keep part of the harvest
- provide farming household a _____kitchen garden_____ to grow crops of their own choice