

Unit 2 Geographies of interconnection

The effects of global connections

The increased movement of goods, services, people and ideas across the world has the potential to improve the lives of millions of people and bring people and cultures closer together. It also has the potential to degrade natural environments and to deepen the divide between the wealthy and the poor.

These men are employed as ship breakers at the Chittagong ship breaking yard in Bangladesh, south of the capital Dhaka. They pull apart old container ships and oil tankers by hand so the steel can be recycled and reused. Many of the ships are owned by the wealthiest multinational companies in the world. It is dirty and dangerous work and there are virtually no health and safety regulations to protect workers.



chapter 5

Source 1 Bangladeshi ship breakers at the Chittagong ship breaking yard pull apart old container ships and oil tankers by hand so the steel can be recycled.

5A

How does global trade affect people?

- 1 There are about 100 000 people in Asia employed as ship breakers. In what ways do these workers benefit from their employment?
- 2 Brainstorm the threats to health and safety for the workers at the Chittagong ship breaking yard.

5B

How does global trade affect places?

- 1 What do you think the impacts of ship breaking on the coastal environment are?
- 2 The ship breaking industry was once concentrated in Europe but moved to India and Bangladesh after the 1970s. Why do you think the industry moved?

5C

How does global tourism affect people and places?

- 1 Tourism is one of the world's largest industries. What areas of Australia and the world are most visited by tourists?
- 2 In what ways does tourism change the natural environment in these places?

5.1 An interconnected world

As you have learned, we live in an increasingly interconnected world. Ideas, people, goods and services move more quickly, more often and in larger quantities than ever before.

Benefits and drawbacks of globalisation

As with all changes, there are winners and losers. Consumers are obvious winners. We now have access to goods produced all around the world. Our homes are filled with goods made by people we will never meet in places we may never visit. We now have access to the skills, expertise and labour of billions of people to supply our needs and wants. Some companies, industries and countries are also winners. China, for example, has become increasingly wealthy and powerful by making and supplying goods and services for the global marketplace. Many people believe that having better trade between nations also spreads the world's wealth.

Despite the many winners, there are also clear losers. Workers in developing countries are sometimes exploited for their cheap labour and are paid much less than those in the wealthier countries who are buying the goods they produce. Their working conditions are often much worse as well.

Globalisation can also lead to the loss of traditional skills and customs. Additionally, small local businesses can find it difficult to compete with large multinational companies. The closure of these businesses can lead to job losses for local workers and negative effects for societies and communities.

The environment is also often a loser when it comes to globalisation. As more and more raw materials such as timber, land and minerals are used to feed the world's factories, natural environments are changed forever (see Source 3). The need to transport these goods to countries all around the world also adds to major environmental problems such as air and water pollution, deforestation and climate change.



Source 1 Sharing culture, food and language are just some ways global trade has influenced the experiences of people around the world.



Source 2 Cartoonists often portray a complex issue using a simple image, employing the device of humour to do so.



Source 3 Steven, a Mooi child, squats in front of what used to be the forest that supported his community. The Mooi are one of the Indigenous people who live off the forests of West Papua. Their ancestral lands are being devastated by logging and taken away for palm oil plantations. Palm oil is used in many processed foods in Australia.

From 'riding on the sheep's back' to 'riding on the dragon's tail'

Australia today is part of the global marketplace. Billions of dollars' worth of goods and services are traded between Australia and the rest of the world every year. For much of the last century, most of Australia's exports came from the farming sector and our major trading partner was the United Kingdom. Products such as wool, butter and meat were shipped around the world and sold to British consumers. Australia was known as 'Britain's farm', and because our prosperity largely came from the sale of wool, Australia was said to be 'riding on the sheep's back'.

This century has seen dramatic changes in our main exports and trading markets. Less than 10 per cent of our total exports now come from the farming sector and the United Kingdom is only our fifth biggest trading partner. Over half of our total exports now come from the mining sector (mainly iron ore, coal and gold) and our two biggest trading partners are China and Japan. China is by far our leading supplier of imported goods (A\$41 billion a year) and buyer of our exports (A\$64 billion a year). This change has led many observers to remark that Australia is no longer riding on the sheep's back – instead we are riding on the dragon's tail.

Check your learning 5.1

Remember and understand

- 1 How has Australia's place in the global marketplace changed over the last 50 to 60 years?
- 2 What Australian products make it important in the global marketplace?

Apply and analyse

- 3 Examine Source 1. Can you imagine how you might feel if you went to a McDonalds or other fast-food store in another country? What similarities and differences might you find?
- 4 Examine Source 3.
 - a Do you think the child shown in this picture has benefited from global trade in any way?
 - b What possible local benefits could there be from the logging that takes place in this area?
- 5 Examine Source 2. What point is the cartoonist making about the relationship between China and Australia?

Evaluate and create

- 6 Design a political cartoon based on the phrase 'riding on the sheep's back' or 'riding on the dragon's tail'. Before you begin, think about the message you want to convey about this phrase.
- 7 What benefits do you experience from the global increase in trade links between people and places? In what ways are you worse off because of these links? Are you a globalisation winner or loser?

5.2 Benefits of global trade for people

Benefits for individuals

Global trade means that you are now linked to manufacturers all over the world. This means that you can buy a wider range of products at cheaper prices than ever before. You are not restricted to paying for services or buying goods made in your local area, or even in your own country. Because of an intricate web of connections involving people from many countries you now have access to the global marketplace.

Online trade is spreading fast. As just one example, Australians have embraced online shopping for clothes at a remarkable rate. A single company, the British fashion site ASOS, racks up a purchase from Australia every six seconds, and is flying four jumbo jets of clothing into Australia every single week.

Not only do the buyers of goods and services benefit from global trade – there are also enormous benefits for the people that supply them. Employment and wealth has been created for hundreds of millions of people. This has improved living standards and life expectancies in many places and helped to pull people out of poverty. It is estimated, for example, that there are 600 million fewer people living in poverty in China today than was the case 30 years ago. This is largely because China has been transformed from an economy based on farming, supplying itself, to one based on manufacturing, supplying the world.



Source 2 Nike employs more than 1 million people in 777 factories in 43 countries, including China. It began as a single factory in the United States but now only one per cent of its workers are employed in that country.

Benefits for businesses

Businesses are now linked to buyers from around the world. This means they may be able to sell more products to more people. They may also be able to access cheaper raw materials such as coal, iron and cotton from other places. These interconnections allow them to keep their costs down and sales up which creates higher profits.

As well as accessing cheaper materials from other countries many companies have moved much of their manufacturing base to other countries. This is often done to take advantage of lower labour costs in these countries. Many products in Australian stores carrying the labels of Australian companies, for example, are made in places such as Vietnam, China, Bangladesh and Fiji.

Benefits of global trade for nations

Most nations around the world have welcomed the opportunities that closer links between nations have brought. Many have found that the benefits are greater if they specialise in a particular product or service. This is known as comparative advantage.

If, for example, you can buy cheap cars from other places then you don't have to make your own. You can focus on producing another product such as clothing or electronics. If you are able to make these better or cheaper than any other country then you will capture the market.

There is also movement of money, ideas, knowledge and technology between countries. Ideas and advances in medicine, education and business can move quickly around the world. This can help to remove cultural barriers that often exist between countries, including language and religious differences. Sharing knowledge and ideas in this way also helps us move towards what is known as the 'global village'.

Some aspects of globalisation benefit people, businesses and entire nations. Bollywood, the Hindi-language part of the Indian film industry, is an example of this. The volume of movies produced means that individual actors (both Indian and international), dancers, musicians, and other film professionals benefit



Source 3 The Indian film industry, part of which is known as Bollywood, is the largest in the world. India has a comparative advantage in film-making based on its large population, technical knowledge and fine weather.

from employment in the industry. Businesses reap the rewards on both small and large scales. Supporting businesses (catering, or lighting businesses for example) enjoy employment and, on a wider scale, the film industry at large benefits from the continued success of Bollywood films. The nation benefits, too, in many ways, just one of which is the increased awareness of Indian culture on a global level.

Check your learning 5.2

Remember and understand

- 1 What are some of the ways in which you benefit from global trade?
- 2 In what ways does the increasing globalisation of trade benefit other people?

Apply and analyse

- 3 Explain how global trade can help to reduce poverty.
- 4 What is comparative advantage? In which goods or services do you think Australia has a comparative advantage?
- 5 How does the Indian film industry help to break down cultural barriers?
- 6 In what ways has the Chinese economy transformed over the last 40 years?

Evaluate and create

- 7 Many businesses that use cheaper labour in developing countries are often reluctant to reveal this.
 - a Explain why you think this is the case.
 - b Nike is a notable exception to this trend. Explore the interactive map at <http://nikeinc.com/pages/manufacturing-map> to find out where Nike products are made. Which country has the largest number of Nike employees, which has the most Nike factories and how many Australians are employed in Nike factories?
- 8 Draw a diagram or find an image that sums up the concept of a global village to be displayed on your classroom wall. Examine the range of images submitted by your class and discuss the different ways you and your classmates have chosen to represent the idea.



Source 1 Australian shoppers have access to goods from all over the world.

5.3 Benefits of global trade for people in Australia

Australia is an active participant in the movement of goods and services around the world. We are the 55th largest country in terms of our population but the 23rd biggest exporter and the 21st biggest importer. Each year, around \$500 billion worth of goods and services move between Australia and other countries. This trade brings many benefits to Australian individuals and businesses and to the country as a whole.

Benefits for individuals

Millions of Australians are employed in industries that export goods and services. These include agriculture, mining and tourism. Many others work in industries such as retail and manufacturing that rely on imported goods and services. This trade creates wealth and prosperity for these people and for the nation as a whole.

Australia's largest service export is education. There are more than 400 000 citizens of other countries enrolled in Australian universities and other education providers. This generates more than \$16 billion of export earnings for Australia every year. As well as the financial benefits, Australia also receives other benefits. Many of these students apply to stay in Australia when they have finished their education and this leads to an increased number of people in many occupations, including medicine and education. Those that return to their home



Source 1 These overseas students are studying at the University of Sydney. Chinese students are the largest group of overseas graduates there followed by those from India, South Korea, Malaysia and Brazil.

countries improve the level of skills in those countries and often help to improve levels of wellbeing.

Benefits for Australian businesses

Many Australian businesses have been able to take advantage of the increasing trade connections between people and places to become major players on the world stage. This includes Australian mining companies that have dominated world trade in minerals such as iron ore, coal and gold, as well as smaller companies that have developed uniquely designed products. Australian surf wear brands are a good example of this.

Case study: Crumpler

The Australian brand, Crumpler, most famous as the designer and supplier of distinctive messenger bags, is an example of an Australian business that has benefited from the interconnections of global trade. The Crumpler business had humble beginnings in a shed in Ballarat, outside Melbourne, where the first prototype bag was made by Stewart Crumpler himself. From there, the company grew rapidly and achieved success and has sold millions of products all over the world, reaching a wide global marketplace.

Crumpler has stores across Australia and all over the world, including in Japan, the United States, Canada, the



Source 2 Crumpler is an example of an Australian company that has achieved global success.

Philippines, Singapore and China. The head office is in Berlin, Germany. A key factor of the brand's success has been the high level of international sales, with stores supported by online sales and distributors in many other countries as well.

Crumpler has 1500 Twitter followers and almost 10 000 likes on Facebook, extending its global reach and consolidating its urban 'street' image.

Benefits of global trade for the Australian nation

It is difficult to work out exactly how much individual countries benefit from increasing trade links. Most researchers, however, agree that Australia has gained much from our greater interconnections since the 1970s. From this time we began to expand our range of trading partners from traditional markets such as the United Kingdom and New Zealand to markets throughout the world, particularly in Asia. Australian governments continue to try and reduce barriers to trade around the world and have done so for decades.

About one in every seven Australian workers is now employed in the production of exports. The figures are particularly high for those in mining (seven in every 10), farming (four in every 10) and manufacturing metal products (three in every 10). This brings extra revenue to the whole country through taxes and levies on workers and companies and has the potential to improve the wellbeing of many Australians. This has been particularly significant for many Indigenous Australians who have traditionally worked in agriculture. Many have also found employment in the booming mining sector.

Multiculturalism

The interconnections that come with global trade can bring many benefits apart from financial ones. As people move to or communicate with those from other places, there is a natural sharing that occurs. This can enrich the cultural landscape, as aspects of life such as language, religious tradition, art and food are shared and integrated with or added to the existing culture.

Sharing a different range of experiences and learning about different ways of doing things can have many positive results. Multiculturalism can broaden our outlook, lead us to interests or hobbies we wouldn't have otherwise heard about, or create opportunities to do further study or travel. This kind of sharing can do more than just provide an interesting experience – it also has the benefit of promoting mutual understanding and accepting others' differences (see Source 3). This in turn may lead to a more harmonious society which is accepting of diversity.

From an economic perspective, a successful multicultural society makes Australia an attractive destination for tourism, education and business.



Source 3 There are many benefits that come with the interconnection that accompanies global trade. Learning about other cultures and food traditions are just a couple of them.

Check your learning 5.3

Remember and understand

- 1 In what ways can Chinese citizens studying in Australia bring benefits to both countries?
- 2 How did Australia's global trade connections change during the 1970s?

Apply and analyse

- 3 Australia has a comparative advantage in providing a university education when compared to many other countries. Work with a partner to brainstorm the reasons for this and then discuss this with your class.
- 4 Read the case study about Crumpler.
 - a Use the key concept of 'interconnection' to explain the business operations of Crumpler.
 - b List five ways that Crumpler benefits from being interconnected with places all around the world.
- 5 Examine Source 3.
 - a Can you think of other examples of the positive effects of multiculturalism apart from the ones shown?
 - b Have you ever had an exchange student from another country visit your school? If so, what did you learn about their country?

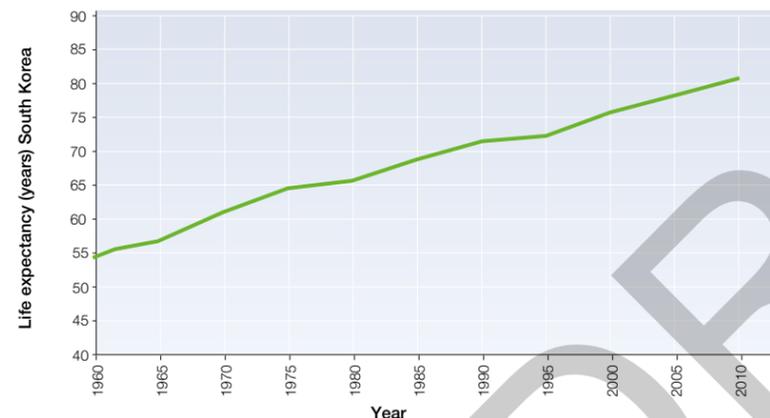
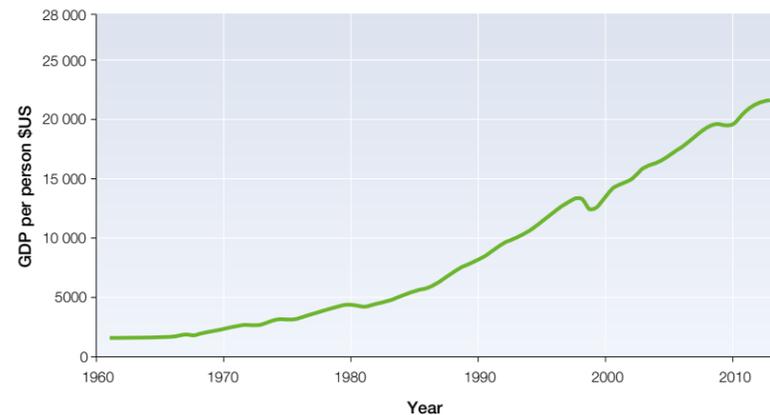
5.4 Benefits of global trade for people in the Asia–Pacific region

Trade in the Asia–Pacific region is thriving, and interconnection with other countries through trade has brought many benefits to the region. The boom in the demand for information and communications technology equipment in particular (such as smartphones, tablets and computers) has accounted for much growth, while places such as Indonesia and Vietnam have driven exports of manufactured goods such as clothes and shoes. Machinery and transport are strong growth areas, and industries such as shipbuilding are expected to provide continued benefits to some Asia–Pacific economies, such as South Korea. Benefits that accompany global trade activity include a buoyant economy, higher employment levels, a higher standard of living, better access to health care and increased life expectancy.

Case study: South Korea

South Korea is an example of a nation that has embraced global trade and the benefits that it can bring. It has transformed itself from a poor nation with a large rural peasant population 50 years ago to a modern, urbanised society with one of the highest levels of wellbeing in the world. Along with Hong Kong, Taiwan and Singapore it is known as an Asian Economic Tiger. These four countries are now seen as a role model for other expanding economies including Indonesia, Malaysia, the Philippines, and Thailand (known as the Tiger Cub Economies).

In 1960, South Korea was considered one of the world's poorest nations. It is now Asia's fourth largest economy and the world's 15th largest. South Koreans



Source 1 The increase in the average life expectancy of South Koreans presents an interesting picture when compared to the Gross Domestic Product (GDP). These graphs, which show the data for the country from 1960, could be used as secondary sources for a geographical inquiry.



Source 2 Samsung is one example of a South Korean company that has achieved massive global success. Samsung Electronics is the largest company in South Korea and the world's largest producer of smart phones, computer chips and televisions.

enjoy an average wealth greater than the average European citizen, as measured by the Gross Domestic Product (GDP) per person. Since 1960, the average life expectancy in South Korea has increased from 54 years to 81 years.

This amazing transformation is due largely to the country's growing importance as a trading nation. It has chosen to concentrate on those industries such as electronics and motor vehicles that require a large, highly skilled labour force. The nation invests heavily in educating young people and providing them with the skills they need in these industries. As a result, South Korea is now the world's sixth largest exporter of cars and the fourth largest manufacturer of electronic goods.

The Korean Wave

Riding the crest of increased prosperity and electronic communication via the Internet, South Korean culture is spreading around the world. The push to promote local culture actually began in the 1990s, when the South Korean government became concerned that cultural traditions were in danger of being over-run by influences from China, Taiwan and Japan. They began to encourage the growth of local cultural expression in movies, television programmes and music.

Some of the nation's largest businesses, including LG, Hyundai and Samsung, were encouraged to invest in these industries and continue to do so. Korean television dramas have become the most watched programs throughout much of Asia and Korean pop (K-Pop) bands have become hugely popular throughout much of Eastern Europe and the Middle East. In 2011, K-Pop YouTube clips were viewed 2.28 billion times, with Japan, United States and Thailand topping the list of most frequent viewers.

The South Korean government has continued to encourage the spread of Korean culture (known as the Korean Wave) as it is seen as a way of promoting South Korean views and encouraging a positive view of the country. This is regarded as important in continuing to build South Korea's reputation as an important player on the global stage.



Source 3 Korean pop, known as K-Pop, is growing in popularity. The musical sensation Psy had a massive worldwide hit in 2012. His single, *Gangnam Style*, topped the music charts in more than 30 countries around the world, including Australia.

Check your learning 5.4

Remember and understand

- 1 What social and economic changes have occurred in South Korea since 1960?
- 2 What links do you have to South Korea?
- 3 What are the 'Asian Economic Tigers'?

Apply and analyse

- 4 Examine Source 1.
 - a Describe the change over time in life expectancy and GDP per person in South Korea.
 - b Explain the links between these two measures of South Korean society.
- 5 What is K-Pop? Explain how it is an example of the growing interconnection of people around the world.

Evaluate and create

- 6 Draw a flow map that shows the movement of goods and services between South Korea and other nations. Use arrows to show the direction of these movements.
- 7 K-Pop is an example of the ways in which one country's culture can influence cultures in other places. Can you think of other examples of this principle?

5.5 Drawbacks of global trade for people

Global trade has the potential to bring benefits to people and to places. It is a leading contributor to reducing poverty and provides wealth and prosperity for countless people. However, these benefits often come at significant economic and social cost to other people in other countries. This takes place at individual, business and national levels.

Drawbacks for individuals

Many companies that are based in developed countries actually manufacture their goods in developing countries. This is usually to take advantage of the cheaper labour that is available in these developing countries. While this provides jobs and income for millions of people, manufacturing in developing countries does come at a cost. Workers are paid much less than those who perform similar tasks in developed countries and they often work in appalling conditions.



Source 1 Workers in a clothing factory in Dhaka, Bangladesh

The demand for cheap labour and high levels of poverty means that child labour is used in some countries. There are estimated to be over 200 million children working in the world. Most of these children work on small family farms in developing countries but around 160 000 of them work in manufacturing.

Countries with high levels of child labour tend to share similar characteristics. These include:

- high fertility rates and a large percentage of the population being under the age of 15
- low rates of school attendance and low levels of literacy
- low levels of technology in comparison to other countries with whom they are competing
- a lack of government policies to deal with child labour
- large numbers of people living in poverty.

Drawbacks for businesses

The interconnections that link the consumer to the person who made their product have, in some cases, become so complex that businesses lose control of the process. In Asian countries such as India and Bangladesh, for example, it is common practice for manufacturing plants to 'outsource' parts of their operations to smaller factories. They, in turn, may also outsource parts of the operations. The company executives in an office on the other side of the world then have little idea of the factories they are actually using, or whether they are involved in unsafe work practices. It also makes it difficult to maintain quality controls on the products. Additionally, there may be a backlash from consumers in the developed world once these practices become known to them.

Drawbacks for nations

Many critics of the growth in trade between countries believe that it benefits the people and businesses of the developed world at the expense of those in developing countries. These poorer countries are seen only as a source of cheap raw materials and labour. This, they argue, tends to widen the gap in wellbeing between wealthy and poor countries.

Another criticism of increased globalisation in trade is that problems in one place can affect many other places very quickly. In 2008, a dramatic fall in house prices in the United States triggered a global financial crisis and caused banks and investment companies to collapse throughout the developed world. Many companies were forced to close and spending on consumer goods fell dramatically. As developed countries reduced their consumer spending, imports went down and hundreds of thousands of people in developing countries were also plunged into poverty.

Financial problems are not the only things to spread quickly. Greater global trade may also result in the spread of infectious diseases between regions of the world as people travel more frequently for trade. In 2002–2003, a respiratory disease, SARS, was spread by tourists from its origins in China to many other countries. By the time the epidemic finished it had killed more than 8000 people in 17 countries. Outbreaks of bird flu and other health concerns like norovirus can also be spread quickly by people who are travelling around the world for business.



Source 2 These protesters in South Korea are campaigning against a G20 meeting of the leaders of the world's wealthiest nations. Many people are concerned that increasing global trade results in a widening gap between rich and poor countries.

Check your learning 5.5

Remember and understand

- 1 Why do many children in developing countries work rather than go to school?
- 2 What is outsourcing? How can it negatively affect people and businesses?
- 3 Factories such as the one in Source 1 are often called 'sweat shops'. Why do you think this is the case?

Apply and analyse

- 4 Examine Source 1.
 - a Estimate the number of workers in this room.
 - b Estimate the percentage of women workers.
 - c What are the roles of men in this factory? What does this tell you about gender roles in this place?
- 5 Imagine that you work in the clothing factory in Source 1. Describe a day at work.

Evaluate and create

- 6 Examine Source 2 showing a protest group in South Korea. Create a table listing both the benefits and the costs of global trade. Discuss which groups in society are likely to be opposed to globalisation and which would support it.
- 7 Research the global financial crisis (GFC) or the SARS epidemic and construct a flow diagram showing its spread within and between countries. How were global trade connections involved?

5.6 Drawbacks of global trade for people in Asia

Asia is the world's largest continent and home to three-fifths of the world's people. Its 48 countries contain a wide diversity of cultures, languages and ways of life. In some Asian countries, most of the population live in small villages and depend on their food-growing skills for their livelihood and to feed their families. In other parts of Asia, more and more people are working in industries such as agriculture, tourism and manufacturing. This growing involvement in industry has led to some alarming work practices. These include using child labour, unsafe working conditions and working hours that include factory shifts of up to 19 hours a day.

Case study: Clothing factories in Bangladesh

The clothing industry is the largest in Bangladesh, accounting for about 80 per cent of all exports. It employs about 3.5 million people, most of them young women. Working conditions and wages vary a great deal within the Bangladeshi clothing industry but a worker can typically earn about \$50 a month. Workers officially usually work 10-hour days, but there are many reports of workers being locked into factories for much longer hours, sometimes from 7.00 a.m. to well past midnight, seven days a week.

American clothing manufacturers began to outsource to Bangladesh in much greater numbers in 2005, following the end of an agreement that had kept a percentage of clothing production in the United States. In the rush, clothing factories were hastily installed in Bangladesh. Building regulations were overlooked and poorly controlled and factories were set up in buildings unsuitable for thousands of workers and their heavy machinery. Many lacked suitable fire exits and ventilation, making conditions in them both dangerous and uncomfortable. Hundreds of workers have died in fires in these factories as a result.

Perhaps most disturbingly, a survey by engineers found that three-fifths of the clothing factories are vulnerable to collapse. In 2013, concrete pillars supporting an eight-storey building on the outskirts of Dhaka collapsed (see Source 1). The building was home to five clothing factories and thousands of workers. More than 1100 people were killed, making this one of the world's worst industrial accidents. The building's owner only had permission to construct a five-storey building but illegally added three more floors to fit in more workers. He also installed heavy generators to counter the frequent disruptions to the electricity supply.

Case study: Ball stitching in India

Many Australian companies that supply the leather and synthetic balls you use for sport have their balls stitched in India. A newspaper investigation in 2012 found that many of the balls are being stitched by children who have been taken out of school by their parents to help earn money to support the family (see Source 2).

While Australian companies use factories that have signed agreements stating they will not use child labour, the reality is that many of them do. During busy times, when the factories are overloaded with work they use other smaller companies to help meet the labour demand. These companies employ children, most of them young girls, to stitch the balls.

Ten million balls are made in India and shipped to Australia every year in an industry worth about \$1 billion. Each worker in India receives about eight cents per ball. It takes about an hour to hand stitch each ball, a task that is hard on fingers and eyes.

For people living in poor villages, however, sending their children to work doing such intense labour – at the expense of an education – is often the only option for the family's income.



Source 2 Twelve-year-old Reena works five hours a day, seven days a week to stitch together balls for Australian children. She thinks she has fallen three years behind her classmates in her schoolwork as a result.



Source 1 Rescue workers search for survivors in the rubble of the collapsed Rana Plaza building – Dhaka, in Bangladesh.

Check your learning 5.6

Remember and understand

- 1 Why did the Rana Plaza building collapse?
- 2 Calculate how much workers in Bangladeshi clothing factories are paid a week. Compare this to the minimum wage in Australia which is \$656.90. How does this help to explain why more clothes are made in Bangladesh than in Australia?

Apply and analyse

- 3 Examine Source 2. Explain how Reena is linked to people in Australia. How has this interconnection impacted on her?
- 4 Why do you think workers in developing countries such as India and Bangladesh are more vulnerable to low wages and poor working conditions than those in developed countries?

Evaluate and create

- 5 The people who died in the Rana Plaza collapse have been called 'victims of globalisation'. Do you think this is a fair description? Give some reasons for your answer.
- 6 Some clothing companies have decided to close their factories in Bangladesh due to poor publicity following the building collapse. Do you think this is a good thing or a bad thing for workers in Bangladesh? Discuss this with your class.

5.7 The effects of globalisation on Indigenous peoples

The original inhabitants of a region or country are known as its Indigenous people. These communities often developed a way of life suited to the natural environment in which they lived without influence and interference from the outside world.

With increased links between people and places, Indigenous peoples and their cultures have been threatened by the expansion of dominant cultures, or from the arrival of new people and cultural groups.

As people from different cultures have moved around the world and settled in new places, they have often come into contact with the Indigenous peoples. In some cases this first contact has been friendly, while in other cases conflict has broken out. Whatever the nature of the first contact, the long-term effects are largely negative for Indigenous peoples. They often

become a minority in their own country and suffer from widespread prejudice and discrimination. As a result, their unique culture is threatened and may become extinct.

The United Nations estimates that there are almost 5000 Indigenous groups in the world today. In total, this accounts for about 370 million Indigenous peoples living in 70 countries. Australia is home to two groups of Indigenous peoples – Aboriginal Australians and Torres Strait Islanders.

The world map (see Source 1) and the information provided in on the following page give examples of some of the Indigenous cultures currently threatened by new global links, and explains how they have been affected.

WORLD: INDIGENOUS PEOPLES



Source 1

Source: Oxford Atlas



The Saami are facing other environmental threats from dam building, logging and the effects of climate change.

1 The Saami

The Saami are the Indigenous people of Northern Europe, living in parts of Norway, Sweden, Finland and Russia. The Saami are traditionally semi-nomadic reindeer herders, but today, many Saami have modernised and now use snowmobiles and helicopters to herd the reindeer. However, pasture land for the reindeer is becoming limited as oil and gas mining are developed on traditional Saami lands.



they find themselves in refugee camps, or in villages where they are little more than a tourist attraction.

3 The Karen

The Karen is an Indigenous group from Myanmar (Burma) who have long fought for their own homeland. Located in a political hotspot, the culture and lifestyle of the Karen have long been under threat from political tensions and military action in Myanmar (Burma). There are estimated to be 200 000 Karen hiding in the jungle from the Burmese army, and many Karen have fled across the border to Thailand. Here,



way of life that blends Western technology with traditions that have been passed through generations.

5 The Yolngu

Arnhem Land, in the Northern Territory of Australia, is owned solely by the Indigenous Yolngu people. They are attempting to balance the needs of their traditional Aboriginal heritage with the demands of the mining industry, an industry which is a huge business for Australia. Some argue that while there are serious problems within their own communities – health, poverty and substance abuse – Yolngu manage a



large-scale private farms and game parks for international tourists has made nomadic grazing impossible for the Masai. Many Masai now live in towns or depend on tourism for survival.

2 The Masai

The Masai are the semi-nomadic people of East Africa, and live in southern Kenya and northern Tanzania. The Masai have been subjected to eviction and to opposition to their semi-nomadic lifestyle over many years. Masai lands in Kenya were reduced by 60 per cent at the beginning of the 20th century, when the British took the lands to build ranches, then later, wildlife reserves and national parks. Today, loss of land to



Those who do still try to hunt risk being arrested or even shot by park guards.

4 The Veddha

The Veddha people are Indigenous to Eastern Sri Lanka, and were originally forest-dwellers. The Veddha people have been exploited for centuries by outsiders wanting their land. This land has been turned from forest to housing developments and government parkland. The Veddha have been banned from the parkland areas.



ways. They now suffer high rates of poverty and disease.

6 The Mentawi

The Mentawi are the native people of the Mentawai Islands in Indonesia. The Mentawi have traditionally relied on the rainforests of the Mentawai Islands for all their needs. Today, rapid change has led to the clearance of forests, replacing the forests with profitable palm oil plantations. As a result, the Indonesian government has relocated many Mentawi to villages where they are unable to follow their traditional

The Mentawi have found themselves the unlikely beneficiaries of Internet connections via groups like Surfaid, which aims to help people in isolated areas Surfaid's members are connected to through surfing.

Check your learning 5.7

Remember and understand

- 1 Why do Indigenous populations often decline when settlers from other places arrive?
- 2 In what type of environment do the Saami live?

Apply and analyse

- 3 List one forest-dwelling Indigenous group. What threats to their way of life do forest-dwelling Indigenous groups face?
- 4 What do the Masai and the Mentawi have in common?

- 5 Give an example of how technology has changed the way of life of one Indigenous group.

Evaluate and create

- 6 Make a list of the ways in which Indigenous cultures are changing. Construct a flow diagram showing how some or all of these changes are connected to each other.
- 7 Select one of the Indigenous groups described on these pages. Research the issue described and report back to your class on the ways in which this group is changing.

5A rich task

The global coffee trade

Coffee is one of the world's most traded commodities. About \$17 billion worth of coffee is traded between producing and importing countries every year. This makes it the second most valuable commodity (after oil) in the world. It is a particularly important crop to many developing countries as it accounts for as much as one-third of their entire export earnings. More than 25 million people are employed in the coffee industry, many of them small farmers.

The overall demand for coffee is growing rapidly and this is causing many changes in its production and processing. Many small farmers in developing countries are finding it difficult to compete with large plantations which are often owned by companies from developed countries. The demand for coffee is also creating environmental problems, particularly the clearing of rainforest to make way for new plantations and an increased demand for fresh water.

The coffee that ends up in your cup begins as a bean grown on plants in tropical countries, often on hillsides. The beans are picked, washed, dried, sorted and packed into 60 kilogram bags for export. Once transported the beans are roasted and ground before being packaged and sold to the consumer.



Source 1 Brazil is the world's largest coffee producer and exporter. Coffee farms range from large plantations owned by transnational companies, such as this one, to small plots owned by a single farmer.

skilldrill: Data and information

Describe, explain and compare patterns on maps

Geographers often use maps to interpret and analyse complex information and reach some conclusions. While a single map is a useful tool for describing a pattern, we can compare several maps to help explain these patterns. Follow these steps to describe, explain and compare the patterns on maps.

Step 1 Examine the first map carefully. Look at the title and the legend so that you know precisely what the map is showing. Take note of any patterns that you notice. These may be a cluster of similar features located close together or other patterns such as features in a rough line (lineal pattern) or spreading out like spokes on a wheel (radial pattern).

Step 2 Repeat Step 1 for the next map and for any other maps you are using.

Step 3 Look for similarities between the maps. You can do this by using your notes and by scanning the maps with your eyes. You are looking for sets of data on the maps that seem to roughly follow similar patterns. Make a note of these similarities.

Step 4 Use your observations to find a logical explanation for these similarities. For example, when comparing maps of altitude and temperature it is logical that temperatures will fall as altitude increases. Similarly, it is logical that tropical rainforests are found in warm areas with high rainfall.

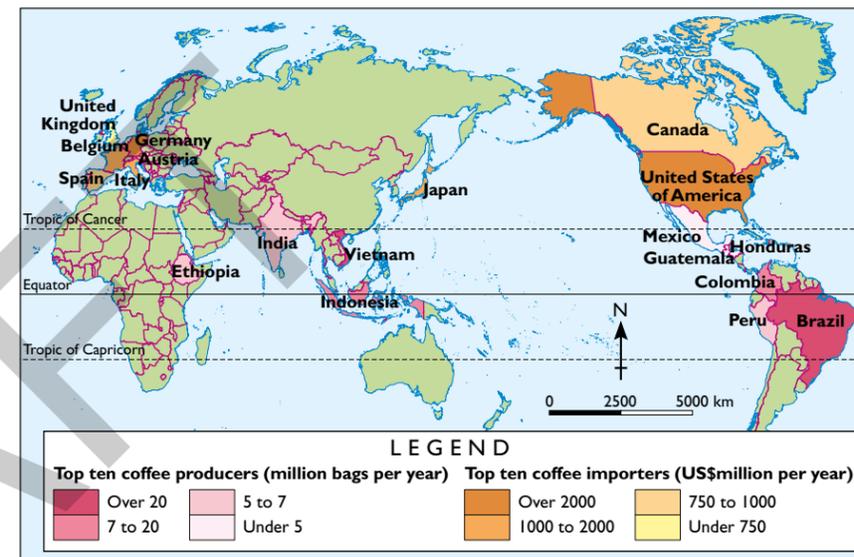
Apply the skill

- 1 Examine Source 2, showing the world's top coffee producers and coffee importers. Describe the distribution of the world's top coffee producers. Pay particular attention to the Tropics of Cancer and Capricorn.
- 2 Examine Source 4, showing the world's climates. Describe the main climate types found in the tropics.
- 3 Compare your answers to the previous questions and explain the distribution of the world's top coffee producing countries.
- 4 Use Source 2 to describe the distribution of the world's top coffee importers.
- 5 Having examined the maps in Sources 2 and 4, what climate factors do you think influence the growing of coffee? What climate factors are apparent in the areas that import large amounts of coffee?

Extend your understanding

- 1 Many coffee producing countries rely very heavily on this single crop for their export income. What are the possible dangers for countries in this situation? What kinds of risks does relying on a single crop expose them to?
- 2 Do some further reading or use the Internet to research the coffee industry in one of the top producing countries. How has this changed in the last 10 years and who has been impacted by these changes?

WORLD: TOP TEN COFFEE PRODUCING AND CONSUMING COUNTRIES



Source 2

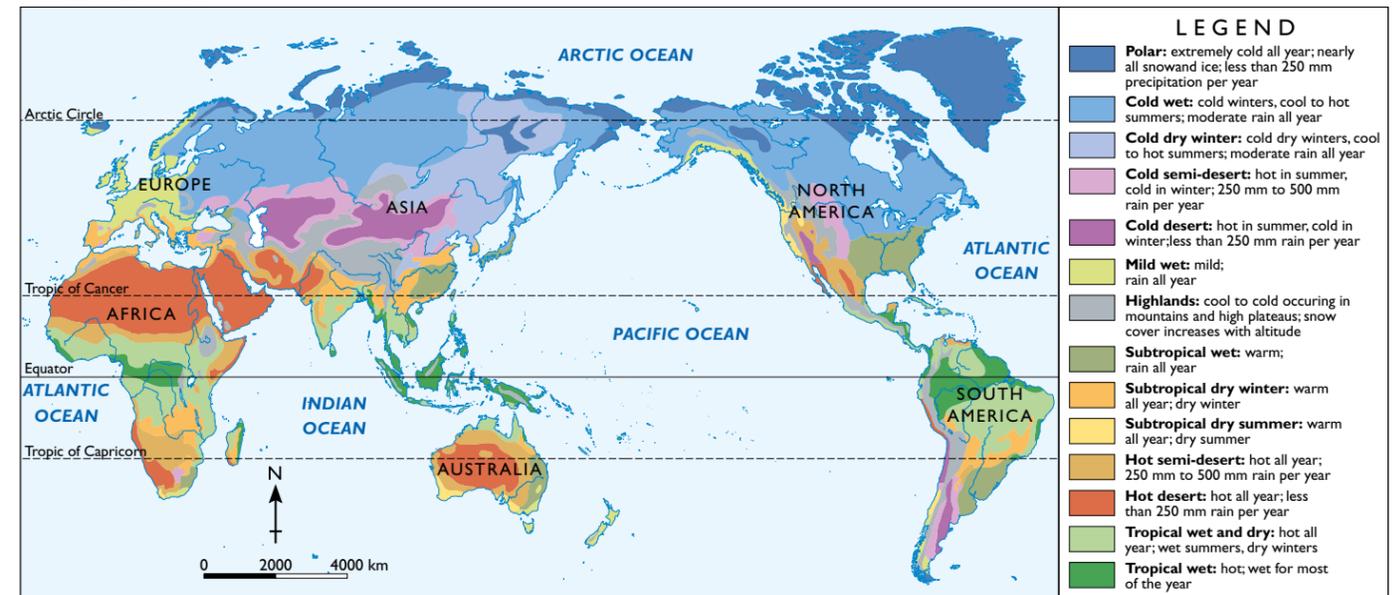
Source: Oxford University Press

Source 3 This table shows the top ten coffee-producing and importing nations in the world

Country	Annual production (in 000s of bags*)	Country	Annual imports (in US \$ 000s)
Brazil	43 484	USA	4 121 228
Vietnam	20 000	Germany	3 344 098
Indonesia	8 250	Italy	1 382 895
Colombia	7 800	France	1 381 309
Ethiopia	6 500	Japan	1 272 614
Peru	5 443	Belgium	1 204 122
India	5 333	Canada	789 431
Honduras	4 500	Spain	752 415
Mexico	4 300	United Kingdom	631 785
Guatemala	3 750	Austria	454 791

* 1 bag weighs 60 kilograms. Figures, 2008

WORLD: CLIMATES



Source 4

Source: Oxford Atlas

5.8 Stages of production and consumption

As you have learnt, the production and consumption of goods around the world has brought change in both expected and unexpected ways to the lives of countless people. It has also changed the natural environment in many places and in many ways.

To help make sense of these changes geographers use a simple flow model known as the supply chain. Put simply, a **supply chain** is the journey of a product from its source to the consumer and then its disposal once it is used. You are surrounded by objects that have followed a series of supply chains to reach you. The main stages in supply chains are shown in Source 1.

Stage 1: Extracting or growing raw materials

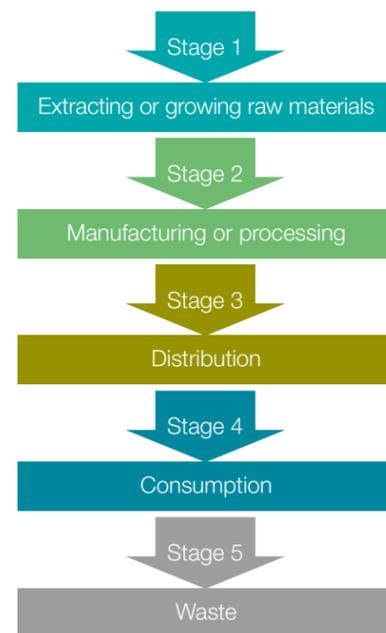
All consumer goods begin as **raw materials**. They are dug from the ground, grown in farms and forests or taken from rivers and oceans. Raw materials include substances like oil, wood, water, metals and minerals. Most goods that we consume are made up of a combination of raw materials. A laptop computer, for example, contains at least 30 different minerals (see 'The global connections inside your laptop' in Unit 4.11) and even simple items such as a chair may contain three or four different materials. The processes involved in taking these raw materials impact on the natural environment at a range of scales from local to global.

Stage 2: Manufacturing or processing

Most raw materials are processed in some way to transform them into useful consumer products. This may be as simple as washing, sorting and packaging tomatoes or other foods from farms, or it may be a very complex and intricate series of processes. An increasing trend is for different parts of the manufacturing process to occur in different places, often in different countries. This requires the movement of materials and partly manufactured goods around the world.

Stage 3: Distribution

The manufactured goods must be transported to the consumer. The largest volumes of goods are moved by ships but planes, trains and trucks are also used. Goods are often taken to warehouses for storage and then to shops where they are accessed by the consumer, who then transports them to the place they will be used.



Source 1 The main stages of the supply chain of production and consumption.



Source 2 Growing produce is part of the first stage of production.



Source 3 Manufacturing or processing is the second stage of the supply chain.

Stage 4: Consumption

The use of goods and services is known as consumption. The volume of goods and services being consumed is growing rapidly. This is largely due to the growth of the world's total population and to increases in people's level of wellbeing. As more and more people are moving out of poverty they are able to access more goods and services. This growth in consumption is bringing about great change to the natural environment, including supplies of fresh water and fertile soil. Perhaps most disturbingly, our consumption patterns are damaging the atmosphere and causing global changes to the climate.

Stage 5: Waste

We often forget what happens to goods once we have finished with them. While some are treated and recycled, others are simply dumped. As consumption increases the amount of waste does, too. The availability of cheap replacements for many consumer goods means that broken or faulty goods are more likely to be thrown away than repaired. China generates an estimated 150 million tons of rubbish per year, and this is predicted to rise to 400 million tons by 2020, the equivalent of the world's entire rubbish production in 1997.



Source 4 Stage 3 is distributing goods from one place to another.



Source 5 Consuming goods is a stage we are all familiar with.



Source 6 After the consumption of goods, waste follows.

Check your learning 5.8

Remember and understand

- 1 Name the five stages of the supply chain.
- 2 Why is the consumption of goods increasing in many places around the world?

Apply and analyse

- 3 How does the global increase in consumption of goods impact on the amount of waste produced? Give some examples in your response.
- 4 Name three raw materials that go into a product that your household uses every day.
- 5 What are some of the ways in which people try to reduce the amount of waste they generate?

Evaluate and create

- 6 Rank the five stages in the supply chain from the one that causes the greatest impact on the natural environment to the one that causes the least. Explain your rankings to a partner and then discuss them with your class.
- 7 Select a common consumer item such as a toothbrush, chocolate bar or packet of biscuits. Look carefully at the item and write down all the materials in it. Use your research skills to trace the supply chain of these materials back to their sources.

5.9 The effects of extracting or growing raw materials on places

The first stage in the supply chain of production and consumption is extracting or growing raw materials. Extracting includes activities such as mining (of gold, minerals, uranium, etc) or taking natural gas or petroleum to use for energy (to heat, cook and generate electricity) and fuel from the Earth.

We also grow crops to provide the raw materials to produce food (wheat which is used to make bread) or clothing (such as cotton).

Accessing the raw materials that are used to supply our needs and wants can bring about many changes in the natural environment. Extracting raw materials from the Earth, such as the minerals that go into many everyday items we use, can cause erosion, a loss of biodiversity and contamination of soil and waterways.

If the raw materials are grown, fresh water and soil systems can be impacted. Intensive farming can cause soil degradation, water scarcity and salinity in places.

Case study: Grasberg mine, Papua, Indonesia

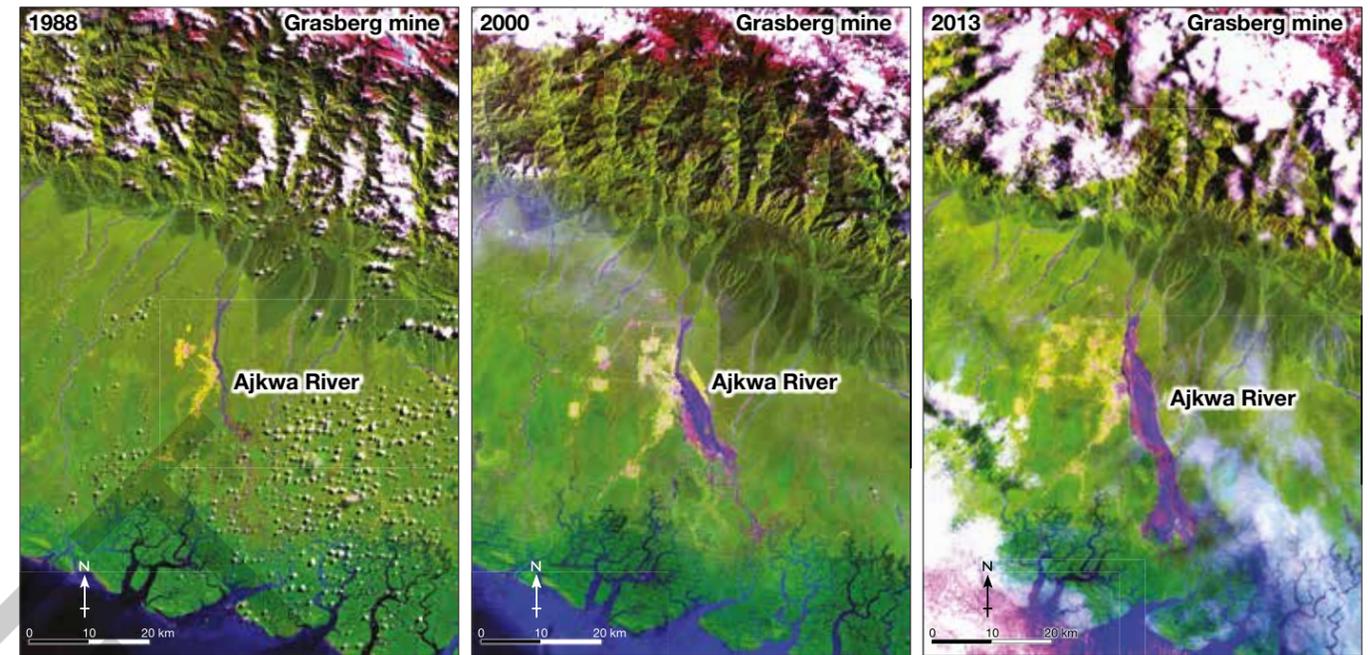
The Grasberg mine is located in the Indonesian province of Papua on the island of New Guinea. It is the third-largest copper mine and the largest gold mine in the world. Its gold reserves are estimated to be worth over \$20 billion and it also contains the world's largest deposit of copper.

The mine is located high in the mountains that run the length of the island. The mining company also controls much of the land between the mine and the coast, a distance of 80 kilometres. This land is used to house the miners and to grow food for them.

In the mining operation vast amounts of water are used and the refuse from the mining process (known as **tailings**) washes into the river systems. These tailings



Source 1 The Grasberg mine in Papua, Indonesia, is an example of how the process of extracting raw materials can affect places.



Source 2 These satellite images, taken in 1988, 2000 and 2013, show changes to Ajkwa River over time. In these false colour images pink shows areas of dry tailings and bare soil, and blue shows tailings of waste deposits. Black shows areas of water while light green areas are disturbed vegetation.

contain silt, and this silt is changing the patterns of river flow below the mine. Most of the sediment flows into the Ajkwa River. This river system naturally carries up to 20 000 tonnes of sediment a day but the mining operation is dumping an additional 238 000 tonnes a day into the river. This extra sediment is collecting in the lower reaches of the river, greatly altering the river system. Much of the sediment has ended up as a large plain, which has now grown to 166 square kilometres.

One billion tonnes of sediment have already been added to the river system. There is so much sediment that the river has ceased to flow in some places. The mining company has built a series of levees in an attempt to contain the sediment and to channel it towards the sea.

Independent reports have found that the mine is creating many other environmental problems. These include:

- dissolved copper, acids and sediments in the water supply at more than 100 times the legal limit
- unstable rock piles up to 270 metres high that sometimes collapse
- landslides due to the changing shape of hillsides
- poisoning and death of fish from polluted rivers
- risk to animals and birds that rely on the fish as a food supply
- loss of shellfish in the river estuary
- loss of mangroves along the coast and rainforest in the plain below the dam
- large areas of rainforest destroyed for settlement, agriculture and tailings.

Check your learning 5.9

Remember and understand

- 1 What minerals are mined at the Grasberg mine?
- 2 Where is this mine? Locate this region in your atlas.

Apply and analyse

- 3 Explain the sediment problems caused by the Grasberg mine in your own words.

Evaluate and create

- 4 Create a sketch map of the area shown in Source 2. Use a legend to show:
 - areas of disturbed vegetation in 1988
 - areas of disturbed vegetation between 1988 and 2013
 - tailings in 1988
 - tailings in 2013.
- 5 List the environmental effects of the Grasberg mine, ranking them from greatest impact to smallest.
- 6 Explain why this case study is an example of the key concept of interconnection.

5.10 The effects of manufacturing and processing on places

Once raw materials have either been extracted from the Earth or grown, they go through the next stage of production. This is the manufacturing or processing stage.

Virtually every product you use or consume has been processed in some way, or is entirely manufactured. This includes the food you eat, the clothes you wear, the transport you use and the things you consume such as paper, plastic, furniture and appliances. The processing of raw materials into these and millions of other consumer items impacts on the natural environment in many ways.

The impact this has on places depends on the type of product manufactured. Manufacturing car tyres, for example, may result in chemical emissions to air, water and soil. Manufacturing aluminium – used in products ranging from bottle tops and soft drinks to outdoor furniture and building construction – produces greenhouse gases that are released into the environment.



Source 1 A paper mill in the United States. For decades, the USA was the world's largest producer of paper but it has recently been overtaken by China.

The manufacturing process

Different processing industries have varying levels and kinds of environmental impact. Here we will examine the examples of woodchip processing for paper production, and iron-ore processing for steel, and the effects they have on the environment.

Case study: Woodchip processing for paper production

On average every Australian consumes about 200 kilograms of paper each year, two-thirds of which is imported. Paper is usually manufactured from trees. The trees are cut down and transported to a mill where they are converted into woodchips. The chips are then ground and cooked in a chemical solution to produce pulp. Chemicals such as bleaches and titanium oxide as well as fillers such as clay and chalk are added to the pulp, which is then filtered and squeezed between giant rollers to produce paper.

“What a coincidence, this letter complaining about our paper mill polluting the river is written on notepaper printed there.”



Source 2 What does this cartoon say to you about the effects of manufacturing and processing?

These processes impact the environment in several ways. Removing trees contributes to global climate change, as does transporting them to the paper mill. Mills use large amounts of electricity, which often comes from burning fossil fuels, another climate change contributor. Mills use thousands of litres of water to produce paper, and they release chemicals such as sulphur dioxide into the air. Chemicals used in the process may also be released into nearby streams and rivers.

Studies in the United States have found that the paper industry is the largest consumer of water per tonne of finished product in the country. It is also the third-largest user of energy. The industry is the fourth-largest water polluter and the third-largest air polluter. It has been estimated that each tonne of recycled paper saves 13 trees, more than 30000 litres of water and

2.5 barrels of oil.

Case study: iron ore processing for steel production

Steel is used in thousands of products, from fine surgical blades to skyscrapers and massive ships. More than 1.5 billion tonnes of steel is consumed every year and this amount is growing. It begins as iron ore, which occurs naturally in some rocks, many of them in Australia. The ore is crushed and then melted at very high temperatures. Limestone and coke (processed coal) are added as the iron heats and becomes a liquid known as pig iron. This is melted once again in giant furnaces and impurities are removed to produce molten steel, which is poured into moulds, cooled and hardened.

It is estimated that about five per cent of the world's greenhouse gases come from the production of iron and steel. Producing a tonne of steel can produce up to two tonnes of carbon dioxide, the leading greenhouse gas. This figure varies a great deal around the world depending on processes. Many steel manufacturers in developed countries are using new technologies to reduce their emissions but manufacturers in developing countries are less likely to do this because of the added cost.

Case study: Manufacturing in China

China is now the world's leading manufacturer, having taken the top spot from the United States since 2010. Manufacturing has grown in China due to a range of factors, including opening up the country to foreign trade, the modernisation of Chinese factories and transport networks, and the movement of Chinese people from farms to cities in search of work. This has led to improved levels of wellbeing for hundreds of millions of people living in China. These rapid changes have, however, come at a cost to the natural environment.

Air pollution

About two-thirds of China's energy for producing electricity, heating and cooking comes from burning coal, the cheapest but most polluting way to get energy. China is now home to 16 of the 20 most air-polluted cities on the planet. A third of China's urban residents are exposed to harmful levels of pollution resulting in a rise in cancers, asthma and birth defects. A UN study found that outdoor air pollution is associated



Source 3 A worker at a Chinese steel mill checks the blast furnace. China is the world's leading steel producer. Most Chinese steel is made from Australian iron ore.

with some 300 000 deaths and 20 million cases of respiratory illness in China each year.

Water scarcity

Many communities in China face water scarcity due to the over-extraction of water for industry or from water

pollution. Some studies have found that more than 70 per cent of China's rivers and lakes are polluted and that more than 300 million people nationwide have no access to clean water. This drastically affects their wellbeing as they are more susceptible to water-borne diseases and food insecurity.

CHINA: POPULATION DENSITY AND ENVIRONMENTAL ISSUES



Source 4

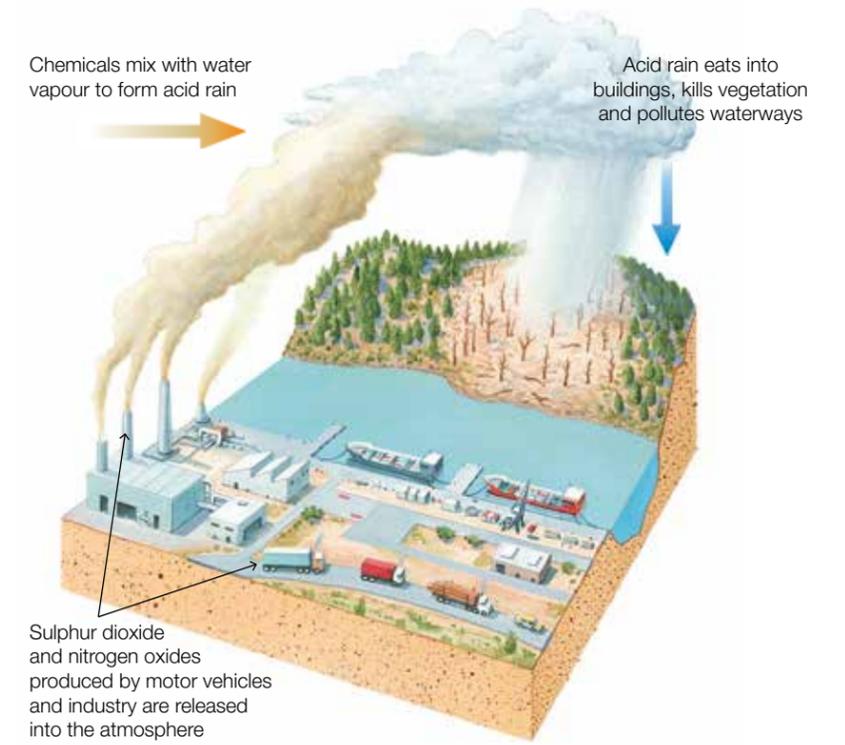
Source: Oxford University Press

Source 5 Chinese cities with the highest levels of air pollution, measured by the amount of small particles considered dangerous to health in the air (a reading of 20 is considered the safe limit).

Cities with between 4 to 5 times the safe limit of air pollution		Cities with more than 5 times the safe limit of air pollution			
Changchun (85)	Shanghai (81)	Beijing (121)	Hefei (111)	Shenyang (110)	Urumqi (140)
Changsha (92)	Yinchuan (90)	Chengdu (111)	Jinan (123)	Shijiazhuang (104)	Wuhan (105)
Hangzhou (97)	Zhengzhou (99)	Chongqing (105)	Lanzhou (150)	Taiyuan (106)	Xi'an (113)
		Harbin (101)	Nanjing (100)	Tianjin (101)	Xining (141)

Acid rain

The burning of coal during the manufacturing and processing stage releases large clouds of sulphur dioxide, producing acid rain over 30 per cent of the country. Acid rain is caused when certain pollutants in the atmosphere mix with the moisture (water vapour) in clouds and become acidic. The clouds may carry the dangerous cocktail many kilometres, and when rain falls it poisons the water and soils, killing fish populations and forests. It also affects the yields of crops grown by farmers to feed China's millions. Sulphur dioxide produced by cars and nitrogen oxides from farming fertilisers also contributes to the problem. Acid rain falls on one-third of China's territory and 70 per cent of China's rivers and lakes are so full of toxins that they can no longer be used for drinking water.



Source 6 Acid rain is a direct result of air pollution.

Check your learning 5.10

Remember and understand

- 1 How does paper production impact on the natural environment?
- 2 Examine Source 1. List the impacts on the natural environment that you can identify.
- 3 What is acid rain?
- 4 Why are some communities in China suffering from water scarcity? How can this lead to lower levels of wellbeing?

Apply and analyse

- 5 Why is the environmental impact of manufacturing often greater in developing countries?
- 6 Examine Source 2. Cartoons such as this are often used to make a serious point. What point is this cartoonist making?
- 7 Consider Source 3 which shows a Chinese steel mill. List five ways in which you will use steel today.
- 8 Examine Source 4.
 - a Describe the distribution of China's population.
 - b Describe the distribution of areas affected by acid rain.

- c What association do you notice between population density and acid rain? Account for this association.

Evaluate and create

- 9 What steps could you take to reduce your use of paper and steel? Design a poster encouraging others to take one of these steps.
- 10 Use the Internet or do some further reading to research the process of making concrete. What are the main ingredients in concrete, where do they come from and how does this impact upon the environment?
- 11 The head of the World Coal Association has stated that 'Coal played a key role in reducing poverty in China. During the period 1980–2008 Chinese annual coal consumption increased by more than 400 per cent from 626 million tonnes to 2.7 billion tonnes.' Discuss why burning coal has advantages and disadvantages for China and its people.
- 12 Do you consider the economic revolution in China to be environmentally sustainable? Give some reasons for your answer.

5.11 The effects of distribution on places

After raw materials have been grown or extracted, then processed or manufactured, the resulting products are distributed. This is stage 3 in the supply chain. Distribution – transporting a product from one place to another – is a by-product of the way we frequently purchase and use things from all around the world. A product may travel many thousands of miles before it reaches us, by means including freight train, truck, aeroplane, shipping container and courier. The effects of distribution are many, and include direct impacts (like emissions of carbon dioxide from fuel, and indirect impacts (like traffic congestion and urban sprawl).



Source 1 Oil from the grounded Exxon Valdez ship affected 1770 kilometres of coastline and 28000 square kilometres of ocean – an area approximately 10 times the size of the ACT.

Case study: Shipping

About 8 billion tonnes of goods are transported on ships every year. This represents more than 90 per cent of all global trade. Ships are the most efficient form of moving large amounts of goods because of their large carrying capacity, and the lower ratio of emissions they produce. Cargo ships produce one-tenth of the greenhouse gases (GHG) for every tonne of goods carried compared to trucks.

Shipping does, however, impact on the natural environment in other ways. Shipping accidents that result in oil spills have the potential to cause great damage to the natural environment. One of the worst shipping disasters occurred in 1989, when an oil tanker, the Exxon Valdez, ran aground in Prince William Sound, Alaska. Eight of its 11 tanks were damaged, spilling more than 40 million litres of crude oil into the sea. This resulted in the deaths of up to half a million seabirds, 1000 sea otters, 300 seals and 250 bald eagles. Billions of salmon and herring eggs were also destroyed.

To remain stable ships carry water in their holds. Known as ballast water, it is pumped into the ship's hold from the sea at the start of its journey and then carried to the next port where it is discharged back into the sea. Between 3 and 5 billion tonnes of ballast water is moved

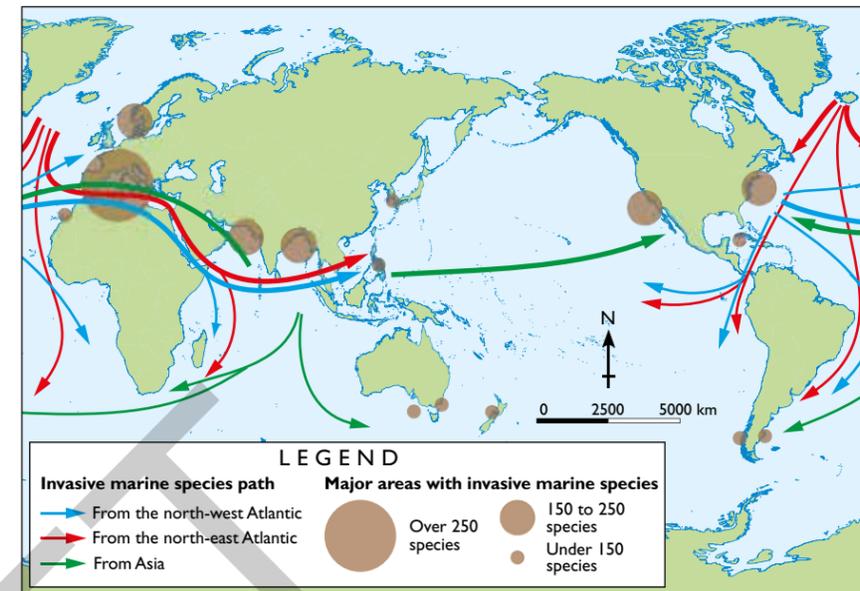
around the world every year. The ballast water keeps ships and sailors safe but it also carries marine organisms, including starfish and molluscs. It has been estimated that at least 7000 different species are carried in this way and this can cause great environmental damage (see Source 2). For example, the Northern Pacific seastar arrived in Tasmania in ballast water from Japan in 1992 and was then carried to Victoria's Port Phillip Bay. Within two years the population had reached 12 million and had begun to ravage the native shellfish.

Case study: Aeroplanes

Aeroplanes use large amounts of fossil fuel to transport goods as well as people around the world. Burning this fuel produces gases such as carbon dioxide and nitrous oxide as well as other pollutants such as soot and sulphate particles. Because most of these are produced at altitude they tend to have greater impact on the atmosphere than those produced at ground level.

Water vapour – also a greenhouse gas – is formed by aircraft at high altitude. Water vapour condenses into droplets to form condensation trails, or contrails

WORLD: INVASIVE MARINE SPECIES AND PATHWAYS



Source 2

Source: <http://www.grida.no>

(see Source 3). Contrails are thought to contribute to global warming and climate change.

Aircraft also contribute to noise pollution levels, and they have other associated impacts on places they travel to and from. These include:

- the general level of pollution and emissions caused by energy use in airport buildings
- greenhouse gas emissions from ground airport vehicles
- carbon dioxide emissions from vehicles transporting goods to the airport for distribution.

Many people are concerned about the level of greenhouse gases produced by aeroplanes, and are becoming more aware of the issue when evaluating their purchasing habits. You may have opted for something you bought online to be delivered from overseas by express, which means it would have travelled by plane, an increasingly common practice with the popularity of Internet shopping.

As the world's population grows, and we continue to live in a global marketplace, the levels of pollution contributing to climate change will become more and more of a concern. Strategies that have been discussed to reduce the effects of aircraft on the environment include:

- increasing the price of air travel to reduce the number of planes in the air and amount of flying time
- increasing air freight costs to deter people from using airmail
- ending frequent-flyer programs that encourage people to fly as often as they can
- trialling alternative fuels
- striving for better efficiency
- discouraging the building of new airports or the expansion of existing ones.



Source 3 The white trails behind jets are formed from water vapour, a greenhouse gas.

Check your learning 5.11

Remember and understand

- 1 What is ballast water? How does it impact on the natural environment?
- 2 How did the Exxon Valdez disaster in 1989 affect the natural environment?

Apply and analyse

- 3 Examine Source 2.
 - a Which regions have large numbers of invasive marine species?
 - b Describe the movements of invasive marine species from the three main source areas around the world.
 - c Looking at the map, can you reach any conclusions about how the movement of invasive species might be interconnected with trade?

Evaluate and create

- 4 Although the number of ships has increased, the number of oil spills and shipping accidents has decreased in recent years. Brainstorm the possible reasons for this trend.
- 5 Research the environmental impacts of train travel. Which has the greatest environmental impact: trains or aeroplanes?

5.12 The effects of consumption on places

After raw materials have been grown or extracted, then processed or manufactured into a product and distributed, the stage of consumption follows. You have probably heard terms like 'consumer behaviour', 'consumer rights', and even 'consumer society'. All of these terms illustrate how much the consumption of goods and services has penetrated the way we live. You have probably been the consumer of many goods and services today. Some things you consume might be immediately obvious – a can of drink or a chocolate bar – but others, such as the gas that powered the hot water system for your shower – might be less evident.

As our levels of consumption increase, so the impact on the natural environment deepens. The way we consume products and resources has changed and damaged the Earth's **biodiversity** (the variety of living organisms on the planet) even contributing to plant and animal species disappearing.

Impacts of consumption on endangered species

Trading in wildlife is one of the largest industries in the world. Much of this trade is legal but still threatens many species: the legal forestry trade, for example, is endangering many plant species, while legal fishing poses threats for marine life. But the illegal wildlife trade is bringing many species to the point of extinction. The value of illegal trading in wildlife is second only to illegal drug trading.

Some people who are involved in the illegal trading of wildlife smuggle live birds and animals across international borders. Animal smugglers use a range of methods to hide the wildlife. Spiders are mailed in film canisters, small animals are drugged and stitched into luggage lining, and snakes are put into stockings and strapped to people's legs. Many animals don't survive the journey.

Other illegal wildlife traders smuggle animal parts across international borders. Crocodile skins, rhino horns, elephant tusks and tiger body parts all fetch huge prices on the illegal (black) market.

Case study: The black market trade in rhinoceros horn

The powdered horn of the rhinoceros is believed by many people, particularly in Asia, to be a cure for many diseases. This has resulted in rhino horn being valued at \$65 000/kilogram making it more valuable than gold. African rhino hunters, often poor villagers, hunt rhinos across borders and into reserves and national parks, shoot them, cut off their horns with a machete or chainsaw and sell the horn to traders who smuggle them to Asia, usually on ships. Wildlife patrol officers shoot to kill those who hunt protected species such as the rhino.

Of the world's five rhinoceros species, three are considered to be critically endangered. The population of the Black Rhino of Africa has declined from 850 000 in 1900 to less than 5000 today.



Source 1 A member of the Kenyan anti-poaching team guards two of Kenya's four remaining white rhinoceroses.

Case study: The online ivory trade

Many endangered species are facing a new threat brought on by increasing demand combined with Internet access. Studies by conservation groups have found that live endangered animals and body parts can be bought online. For example, a two-week study of European auction sites found hundreds of items made from ivory which comes from elephants' tusks.

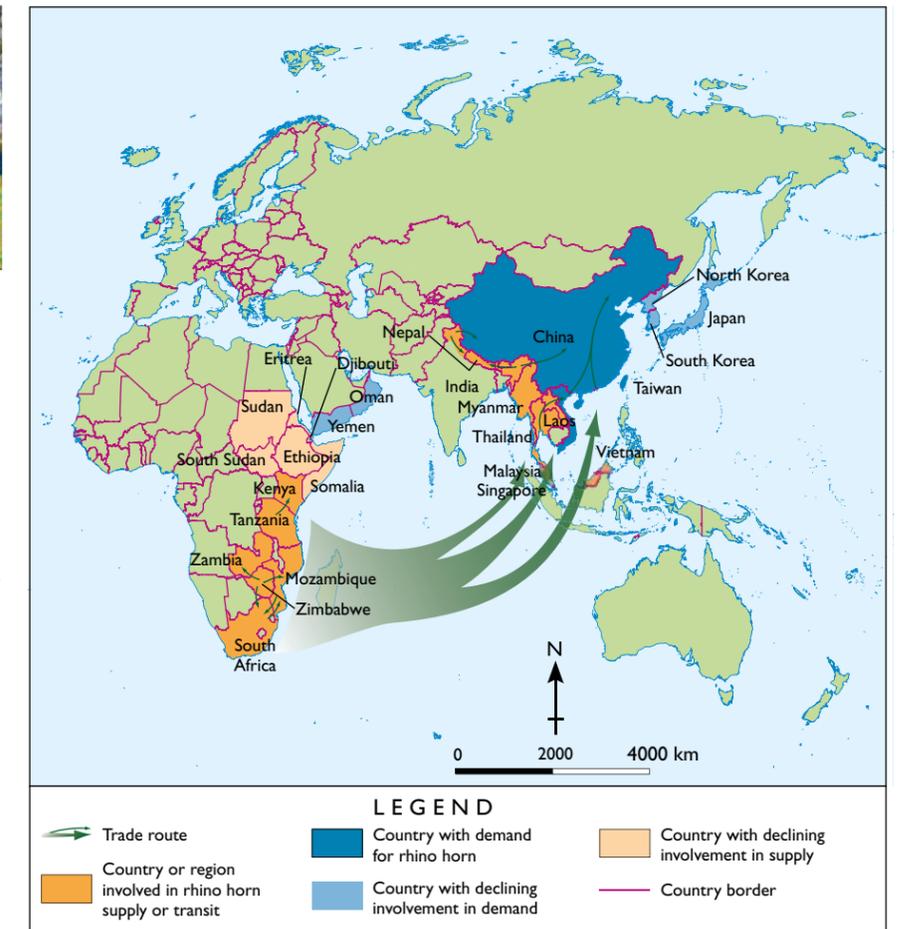


Source 2 Screenshot of the Ivory Trade app.

A similar study of Chinese sites found almost 18 000 elephant products for sale on just 13 websites.

Ivory is valued for use in carved statues and trinkets and, like the demand for rhino horn, is driven by demand in Asia. In the middle of last century there were about five million elephants in Africa, today several hundred thousand exist in the wild and they are listed as a vulnerable species. Some conservation groups estimate that up to 32 000 elephants per year have been killed in Africa for their tusks. One of these groups, the International Fund for Animal Welfare has launched a digital magazine and iPad app *Unveiling the Ivory Trade* in an attempt to bring attention to the online trade in ivory.

WORLD: BLACK MARKET TRADE IN RHINO HORN



Source 3

Source: <http://ngm.nationalgeographic.com>

Check your learning 5.12

Remember and understand

- 1 Why are rhino horns and elephant tusks valuable?

Apply and analyse

- 2 Examine Source 3.
 - a In which countries is there a demand for rhino horn? Where does this horn come from?
 - b In which of these countries is the demand declining? Give some possible reasons for this decline.
 - c How does the demand for rhino horn threaten this species?
- 3 Compare the threats facing elephants and rhinos in Africa. What are some of the similarities and some of the differences?

Evaluate and create

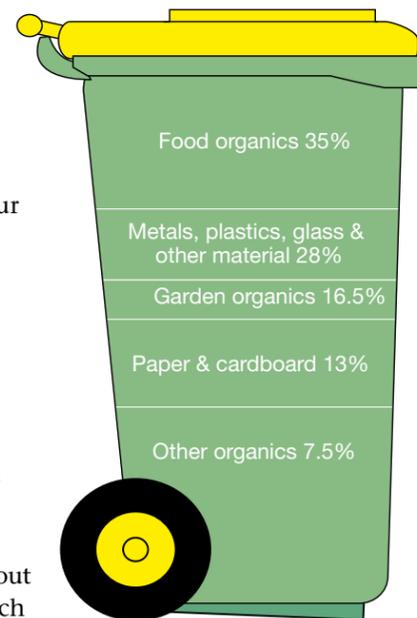
- 4 List the various methods described to try to protect these two endangered species. Which of these do you think would be the most effective? Give some reasons for your answer.
- 5 One proposed method of conserving rhinos is to make the trade in their horns legal. Rhino would then be farmed and their horns harvested for sale. Discuss the possible consequences of this proposal.
- 6 Tigers have been hunted throughout history, as souvenirs and to use in medicines in some parts of the world. Research the threats faced by tigers and compare these threats to those faced by elephants.

5.13 The effects of waste on places

The consumption of a product or a service is followed by waste, our fifth stage in the process of production and consumption.

Some sources suggest that only one per cent of all materials flowing through the American economy end up in products still being used six months after manufacture. What happens to the other 99 per cent? Mass production and the move of factories to developing countries have made goods cheaper and more readily available. New models are released constantly, older ones become out of date quickly and it is often cheaper to throw away a broken item and buy a new one than to have it repaired.

The move to this 'throwaway society' has resulted in vast volumes of waste being produced. City dwellers alone produce about 1.3 billion tonnes of waste a year, but the amount produced by each person varies a great deal between countries and regions. People living in developed countries such as Australia and the United States each produce about 2.2 kilograms of waste a day, five times that produced by those living in developing countries in South Asia.



Source 1 What is in your bin? An analysis of Australian wheelie bins found that most waste is organic (i.e. from organisms that were once living).

Check your learning 5.13

Remember and understand

- 1 What is meant by the term a 'throwaway society'? Do you think we live in a throwaway society? Give some reasons for your answer.
- 2 What happens to the e-waste in those places that receive it? How does this impact on people and the environment?

Apply and analyse

- 3 Examine Source 1.
 - a What percentage of household waste in Australia is wasted food? Why do you think this figure is so high?
 - b How could the amount of waste produced by Australians be reduced?
- 4 Examine Source 2.
 - a Which places generate large quantities of e-waste?
 - b Which places receive large quantities of e-waste?

- 5 Why do you think people in developing countries produce less waste than those in developed countries?

Evaluate and create

- 6 Access the website <http://www.worldometers.info/> to find out how many computers have been sold this year and mobile phones sold today. What conclusions can you reach from your results regarding global consumption of these products?
- 7 Investigate what your local council does with e-waste. Is it recycled, banned or put into landfill? Write a letter to the council either supporting its approach to e-waste or recommending some changes.

key concept: Environment

E-waste

The fastest growing type of waste in the world is discarded electronic equipment such as computers, televisions and mobile phones. Known as **e-waste**, it is estimated to add up to more than 50 million tonnes a year worldwide. Monitors and computers contain significant quantities of heavy metals such as lead, mercury, cadmium and chromium. These metals are considered dangerous because they can build up in the soils, enter the food chain or contaminate water sources and, in sufficient concentrations, may cause health problems.

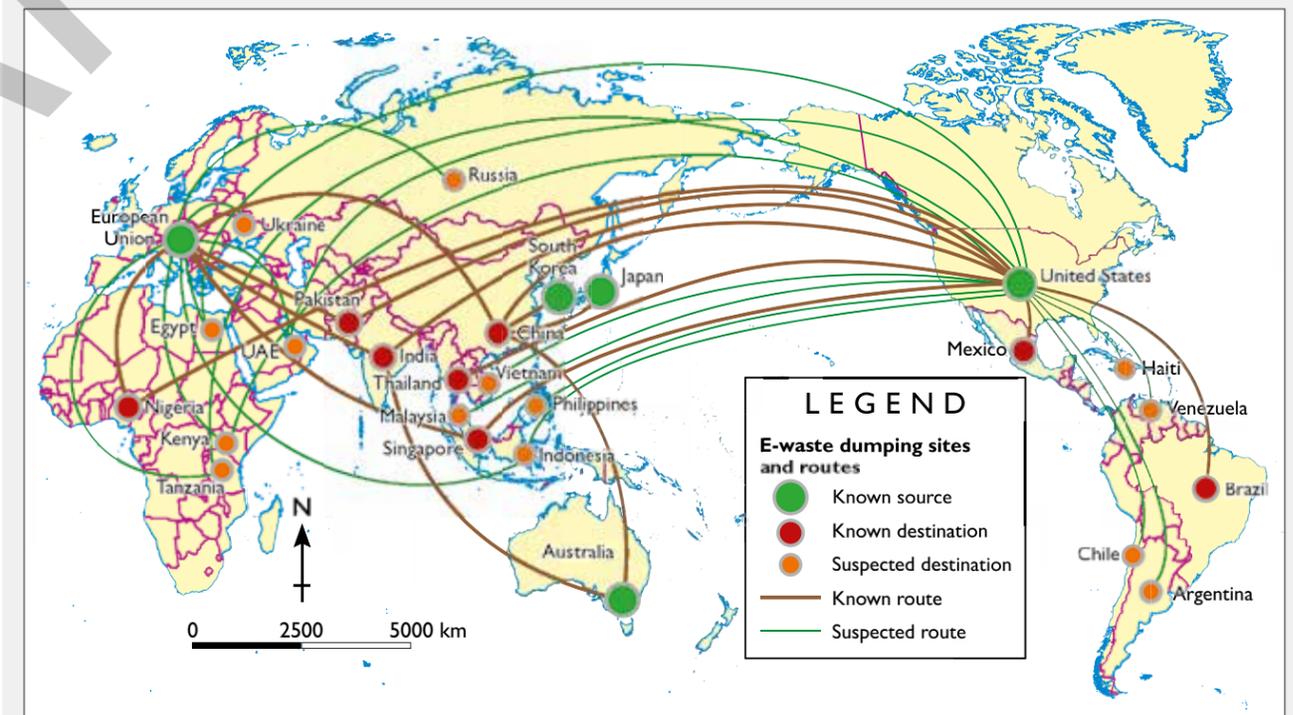
Computers and other forms of e-waste can be pulled apart so that the materials inside can be recycled. These include valuable copper, gold and nickel. This can reduce the environmental impact of dumping e-waste in landfill and also reduces the need

to mine these raw materials for new equipment. Many Australian local councils operate e-waste recycling schemes and discourage people from dumping computers and televisions in landfill.

Recycling e-waste is labour intensive and therefore costly. For many developed countries the solution is to ship the e-waste to poorer countries with lower wages and few or no health and safety regulations. In many communities in Africa and Asia people pull apart the e-waste and melt the plastics in fires, releasing many dangerous chemicals into the air and water.

For more information on the key concept of environment refer to page XX of 'The geographer's toolkit'.

WORLD: ELECTRONIC WASTE ROUTES



Source 2

Source: Oxford University Press

5B rich task

Food miles

Global transport networks have made it possible for people to access food from all over the world. This means we are no longer restricted to eating foods that can only be grown in our local area at certain times of the year. It has also meant that food retailers are able to access and sell food that is produced more cheaply in other places. Food consumers, particularly those in developed countries, benefit from this globalisation of food supply. Transporting food around the world however, does have consequences for the natural environment.

One obvious impact on the environment is the emission of greenhouse gases from oil-powered transport such as trucks and ships. The further the food travels, the more greenhouse gases have been produced. The term 'food miles' has been coined to give consumers an easy way to understand some of the environmental impacts of their food choices. It is important to realise that food miles only give a rough guide to the impact of food and that there are many other aspects to consider. However, it is still a useful way of comparing the distances travelled by different foods, and encourages us to think about what we consume.

A study of the total distance travelled by the items in a typical Melbourne supermarket trolley found that they had travelled more than 70 000 kilometres! Twenty-one thousand kilometres of this was by road and the researchers estimated that the total carbon emissions of the trucks carrying this food were about the same as 4247 cars driving for a year.

Source 2 Supermarkets have only been part of Australian retailing since the 1960s. Prior to that, people bought their food at individual markets such as this one in Haymarket, Sydney in 1935, or grew it themselves.



skilldrill: Data and information

Collecting, recording and analysing relevant data to inform a geographical inquiry

Collecting, recording and analysing data is an important skill that geographers often use. One way they do this is by developing a table that allows them to show and compare the information they have collected. You can use this skill to develop a table to record the distance food items travel.

Step 1 Copy the table in Source 2 into your notebook. Fill in the three blank cells in the first column (8–10) with three of your own favourite foods.

Step 2 Locate the items in your local shops or supermarket.

Step 3 Investigate the origin of each item. You can do this by:

- reading the food label
- checking the signs at the fruit and vegetable counter or deli or checking the stickers on the items
- reading the display tags at the supermarket
- speaking to the people at the local butcher or fruit and vegetable shop or the person at the counter
- investigating the company on the Internet or calling them.

Source 2 Copy and complete this table to estimate your food miles.

	Food item	Town or country of origin	Estimated distance by ship (if relevant)	Estimated distance by road	Total estimated distance travelled to sales point
1	Fresh lemons				
2	King Island cheese				
3	Uncooked prawns (from the deli counter or fish shop)				
4	Fresh milk				
5	Valencia or navel oranges				
6	Bertolli olive oil				
7	Kikkoman soy sauce				
8					
9					
10					

Step 4 Enter the country or town of origin into your table.

Step 5 Investigate the routes likely travelled by the items produced in other countries. They most likely travelled by container ship, so follow the obvious shipping routes from the main port in those countries to the main port near you. A site like <http://new.marinetraffic.com> will show you the main shipping routes of the world.

Step 6 Use a world map to calculate the distances of the route for each item. Enter these figures in the 'Estimated distance by ship' column in your table.

Step 7 Estimate the road distance from your nearest port to the supermarket or place where you buy your food. You can use the 'Get Directions' feature in Google Earth to find this distance. Enter this figure in the 'Estimated distance by road' column in your table.

Step 8 Investigate where the items produced in Australia probably originated. This may need to be a calculated guess based on a map of farming in Australia. Alternatively you could research the company who processed your food by using the Internet. Estimate the road distance travelled by these items. Enter these figures in the 'Estimated distance by road' column.

Step 9 Fill in the 'Total estimated distance travelled to sales point' column. Add the shipping and road distances if your item came from overseas, or copy the road distance figure if the item was made in Australia.

Step 10 Add together your data to calculate the total distance travelled by your 10 items.

Apply the skill

- 1 Develop a table to calculate the food miles you personally accumulate during an entire week. Collect and record your food consumption data through the week and add up your total on the last day. Which items travelled the furthest and least to reach you?
- 2 Compare your food miles table with those of your classmates and discuss. Were the total amounts roughly the same, or were there significant variations? In small groups, note down particular food items that you found travelled the longest and shortest distances.
- 3 Examine the picture of the market shown in Source 1. How does the scene shown here differ from a modern supermarket? How far do you think the items shown here would have travelled to reach the customer?

Extend your understanding

Do some further reading on the Internet to complete the following task.

- 1 Interview a grandparent or someone you know who is older, and ask them about the foods they used to eat when they were young. Find out how today's food choices and habits compare. Describe and explain the similarities and differences. Did they prefer the way they used to eat, or the choices available now? List their reasons.

5.14 Different types of tourism

It is estimated that tourists spend around \$A1 trillion annually (i.e. \$A1000 billion). This revenue makes a valuable contribution to the economies of most countries around the world.

The United Nations World Tourism Organization (UNWTO) now estimates that the total number of tourists travelling each year will reach 1.8 billion by 2030. Asian countries such as India, Malaysia and Indonesia are expected to see the most rapid increase in tourist numbers over this time.

Tourists travel for many different reasons. Some simply want to relax on a beach, while others are keen to experience the culture, language and history of the places they visit. In order to understand the decisions different types of tourists make, and analyse the impacts that their decisions have on the environment, geographers tend to classify tourists into a number of groups. In this section, we will examine four of the most popular types of tourism and investigate the impacts that each is having on environments around the world.

Recreational tourism

Recreational tourism is perhaps the most well-known and popular type of tourism. Recreational tourists travel to have a good time, to relax, and to enjoy the attractions and activities on offer in the places they are visiting. Many recreational tourists spend their time relaxing on the beach, eating in restaurants, shopping or attending shows. Each year, around 39 million tourists flock to New York City to enjoy all of the recreational activities on offer there (see Source 1).

Historical tourism

Historical tourists are generally interested learning more about important events that may have taken place in the past, by visiting the places where they happened. They visit important buildings, view artefacts and monuments and sometimes listen to stories from local experts. The Great Pyramid in Egypt, Stonehenge in England and Machu Picchu in Peru (see Source 2) are all popular destinations for historical tourists.



Source 1 Times Square in New York City is among the most popular destinations in the world for recreational tourists because of the many attractions there.



Source 2 Machu Picchu in Peru attracts visitors because of its historical significance. Up to 2000 people visit every day.

Wilderness tourism

Wilderness tourists enjoy the challenge of visiting wild places such as the Amazon rainforest, Antarctica or the Himalaya. For these travellers, the lure of remote lands, rugged landscapes and even challenging weather conditions is much more attractive than a cosy hotel and a bit of sightseeing. The chance to visit places that relatively few others have and be exposed to the people and cultures of these remote places makes wilderness tourism an attractive option for many, despite the potential risks involved.



Source 3 Climbers on Mount Everest wait for their turn to reach the summit. Climbers like these must wait up to two hours to reach the top of the mountain.

Ecotourism

Ecotourists typically travel to natural areas that are relatively undisturbed, and possibly fragile, to learn more about these special places in a socially responsible manner. Ecotourists try to minimise their impact and avoid damaging the environment in which they travel. They may even aim to improve the wellbeing of the land and those that live there. Some ecotourism raises funds for conservation (see Source 4), or goes to directly benefit the local communities in the places visited by tourists.



Source 4 In Central Africa, ecotourism brings about \$20 million a year to the region – much of this used to preserve the habitat of mountain gorillas.

Check your learning 5.14

Remember and understand

- 1 How many tourists travel to a different country each year?
- 2 Which countries are expected to see the most rapid growth in the number of tourists over the next 15 years or so?

Apply and analyse

- 3 As a class, brainstorm examples of experiences and destinations under each of the four tourism types. Which one did your class know the most about? Which did they know the least about? Why do you think this is the case?
- 4 Think about your last experience as a tourist.
 - a Classify your experiences into one of the four tourism types discussed on these pages.
 - b Write a list of all the ways your last holiday had an impact on the places you visited.

- c Classify these into the positives and negatives.
 - d Identify the places where the impact was felt.
- 5 Which of the four types of tourism outlined do you think is the most popular amongst the world's tourists? Give some reasons for your answer.

Evaluate and create

- 6 One method to reduce the impacts of tourism is to give tourists a code of behaviour that outlines a number of rules and guidelines to follow.
 - a As a class, discuss the kinds of rules and guidelines that would reduce the impact of tourism on mountain gorillas such as those shown in Source 4.
 - b In pairs or small groups, design a brochure that you could give to tourists to educate them about the code of behaviour your class has come up with.

5.15 Impacts of recreational tourism

While some forms of tourism, such as ecotourism, may not appeal to everyone, travelling for recreation is massively popular. There are many destinations that people choose to visit for recreation, so the impacts vary widely. Some places become extremely popular as tourist destinations, and the concentrated number of visitors can have significant impact on both the natural and built environments there. For example, a beachfront that once attracted people for its sunshine and clean sandy beaches can all too quickly become overcrowded, and polluted if it is not carefully managed and cared for.

Case study: Cancun, Mexico

Many areas that were once wilderness have been changed to provide the things that tourists need and want such as hotels, airports, swimming pools and roads. On the Yucatan Peninsula in Mexico, for example, lies the tourist town of Cancun (see Source 1). Blessed with a spectacular coastline and warm temperatures, it attracts about 2 million visitors a year. Before it became a tourist

destination, Cancun was a barrier island enclosing a massive shallow lagoon, the Nichupte Lagoon, which was an important nesting site for sea turtles and seabirds.

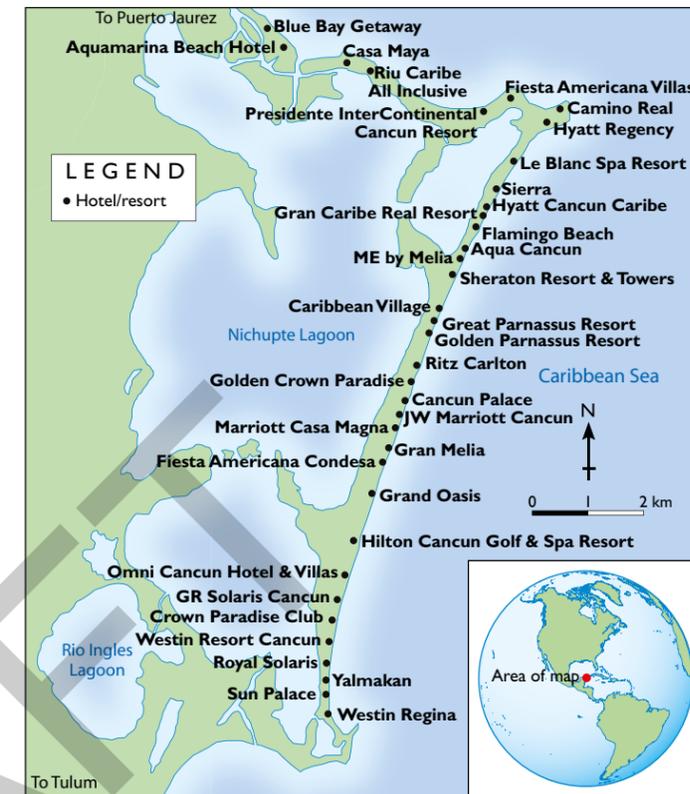
The lagoon was fringed by mangroves, which acted as a nursery for fish and other marine animals (see Source 2). As more tourists began to visit, causeways were built at both ends of the island to join it to the mainland. The causeways restricted how much fresh water was able to flow into the lagoon, changing the conditions of the ecosystem. In addition, sections of the lagoon were filled in, and 60 000 hectares of rainforest and mangroves were removed to make way for the development of hotels and resorts.

Native plants that once protected the coast and prevented erosion were replaced with non-native plants. There are far fewer fish and shellfish due both to the loss of their habitat and overfishing to feed the tourists. Large areas of coral reef are now dead or damaged as a result of the snorkelling and scuba diving. Boats and jet skis create pollution, while boat anchors can drag along the seabed, damaging coral and stirring up sediment, all of which have negative impacts on marine life.



Source 1 Tourist development in Cancun, Mexico

CANCUN, MEXICO: TOURIST AREA



Source 2

Source: Oxford University Press

The increased numbers of tourists and residents (who work in hotels and restaurants and run tour companies) have also resulted in waste management problems. The lagoon has become polluted with sewage, petroleum products, heavy metals and chemicals from stormwater run-off and the boating marinas in the lagoon.

In addition to these negative environmental consequences, there are also negative social consequences. The rapid development in Cancun has put pressure on local resources, meaning the prices of food, energy, raw materials and land have risen. There is also increasing pressure to use agricultural land for the booming tourism industry.

When tourist infrastructure for Cancun was built, little provision was made for the additional residents needed to work in the industry. As a result, there are many slums that surround the area. People living in the slums have poor living conditions, with a lack of drinking water, waste management and other services.

Although the industry provides employment, tourism workers are often poorly paid. This leads to inequalities between resident workers and tourists, with some workers feeling resentment towards tourists and being forced into other illegal means of earning an income, such as selling drugs or prostitution.



Source 3 While tourists enjoy luxury accommodation in purpose built resorts, living standards are very different for many of Cancun's workers and their children.

Check your learning 5.15

Remember and understand

- 1 Why do many tourists visit Cancun?
- 2 How has tourism benefited local people?

Apply and analyse

- 3 Investigate the natural environment of Cancun.
 - a Describe the current environment. Use Source 1 to help you.
 - b How has tourist development changed this environment? Use Source 1 as a source of information.
 - c How have the activities and behaviours of tourists impacted on the Cancun region? Refer to particular places and activities in your answer.
- 4 Cancun has been described as 'a victim of its own popularity'. What does this mean? Do you agree with this statement?
- 5 Examine Source 3. What does this picture reveal about living conditions in the workers' villages?

Evaluate and create

- 6 Imagine that a new tourist development has been proposed for a stretch of coastline in Queensland that has a similar natural environment to Cancun. What lessons could the developers of this new resort take from the experiences at Cancun in order to reduce impacts on natural and built environments?

5.16 Impacts of historical tourism

While many modern-day tourist attractions such as theme parks and museums are built specifically to cater for tourists, most historic sites built long ago were never designed to cope with the demands of the growing numbers of visiting tourists. The interconnection between tourists and ancient buildings, for example, is having a disastrous effect on many of these historic sites in many locations.

Case study: Angkor Wat, Cambodia

Cambodia's 1000-year-old temples at Angkor Wat lay hidden from tourists for hundreds of years by the thick tropical jungle. Today, nearly 3 million tourists visit Cambodia every year, most of whom go to Angkor Wat. In 1995, there were eight hotels in the nearby town of Siem Reap. By 2013, there were more than 350, virtually all of them owned by foreigners. Many of the stone statues and steps of Angkor Wat are crumbling under the stress of millions of footsteps, and entire sections of the walls have collapsed. Pollution from hundreds of tourist buses threatens to corrode the fragile sandstone. The demand for water, including that needed to water two new golf courses built nearby, has resulted in ancient wells and moats drying up. Some researchers fear that drawing water from the ground may eventually result in the sinking and collapse of the ancient monument.



Source 1 Tourists scramble up the side of a temple wall at Angkor Wat, Cambodia.



Source 2 Tourists and buses at Giza's ancient pyramids

Case study: Pyramids of Giza, Egypt

The Pyramids of Giza, on the outskirts of Cairo in Egypt, are some of the most instantly recognisable buildings in the world. More than 4500 years old, they stand as a monument to human ingenuity. They have withstood centuries of desert erosion but are now threatened by mass tourism. Inside the tombs and pyramids, ancient paintings are being eroded by salt deposits that are caused by the sweating and breathing of tourists. Despite strict rules, some tourists touch the ancient paintings, which hastens their decay. The air pollution caused by the growth of Cairo's suburbs and the many tourist buses has corroded the pyramids' surfaces.

Case study: The Great Wall, China

The Great Wall of China was declared one of the Seven Wonders of the World in a public vote in 2007, and China is one of the fastest-growing tourist destinations in the world. Rapid economic growth and rises in living standards in China are allowing millions of Chinese people to own cars and visit places they could not previously access. These two factors are bringing even more people to the Great Wall every year. Unfortunately this is creating many problems for this ancient structure.

In some heavily visited sections virtually every stone has been defaced with graffiti and some tourists even take pieces of the wall as souvenirs. Cars are sometimes driven along the wall, rave parties are held on it, and parts have been torn down to use for building materials or to create space for other developments. It has been estimated that only one-third of the wall still stands, the rest having been torn down or eroded away.



Source 3 Crowds such as those shown here flock to the Great Wall of China during national holidays in China in 2012.

Check your learning 5.16

Remember and understand

- 1 List the ways in which tourists change the ancient structures described on these pages.
- 2 Why is water supply an issue for Angkor Wat?

Apply and analyse

- 3 Why is the impact of tourism on ancient places such as these likely to worsen in the future? Can you think of any likely impacts for each of the places shown here in addition to the ones already described?
- 4 Examine Source 1. How are these tourists impacting on Angkor Wat? Are these impacts also likely to occur at the Egyptian pyramids or the Great Wall?

- 5 What are some of the positive impacts of tourism that may occur at each of these three historic sites?

Evaluate and create

- 6 The case studies presented focus on the impact of mass tourism on the built environment. Brainstorm ways in which tourism can impact on other aspects of the human environment such as language, culture and religion.
- 7 Do some further research about the impact of tourism on one of the three historic sites mentioned here. Prepare a Powerpoint presentation about what you discover and present it to the class.

5.17 Impacts of wilderness tourism

Many tourists are drawn to wilderness areas to experience natural sights and events. Well known examples of wilderness tourist destinations include Uluru in Central Australia, the Grand Canyon in America, and the Serengeti in Africa, where many people travel to go on wildlife safaris. Wilderness tourists, and the facilities built for them, can bring great change to natural environments.

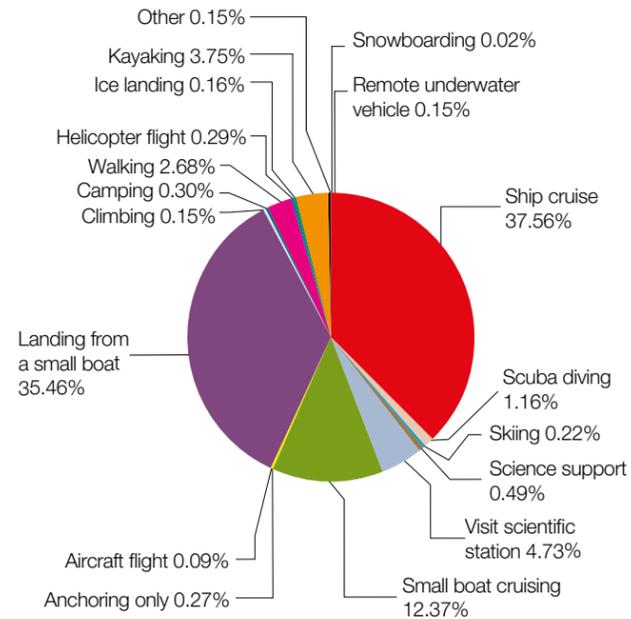
Case study: Tourism in Antarctica

Antarctica is the world's last great wilderness and a land of extremes. Located at the most southerly point of the Earth's surface, it is the highest, coldest, driest, windiest and most isolated continent. This makes it one of the least visited places on Earth. Despite being about twice the size of Australia, Antarctica receives only 26 000 tourists a year compared to Australia's 5.8 million visitors.

Most visitors to Antarctica travel on cruise ships from South America and visit a few sites on the Antarctic Peninsula. They come to marvel at the unique wildlife, the pristine condition of the natural environment and the stunning scenery. Nearly 40 per cent of these tourists are from the United States. Australians make up only eight per cent of tourists to Antarctica.



Source 1 Passengers from a cruise ship photograph a pair of Emperor Penguins in Antarctica.



Source 2 Tourist activities in Antarctica.

People usually visit Antarctica for only short periods but their visits usually take place at that same small number of sites. This leads to a long-term cumulative impact. Tourists also tend to visit the places with the most wildlife, which has the potential to disrupt the animals' normal way of life. The fragile environment means tourism in Antarctica has to be carefully controlled and managed. It is particularly difficult to manage environmental problems, however, as there is no government, police force or park rangers to manage impacts and control behaviours.

Potential impacts from wilderness tourism

- Disturbance of wildlife, especially as most tourists are taken to penguin and seal colonies by small boats from large cruise ships.
- Oil spills from cruise ships. Rubbish and waste from ships also pose a problem.
- Difficulty in rescuing people involved in medical or other emergencies.
- Introduction of foreign species to Antarctic waters from water carried as ballast on cruise ships.
- Tourists can also damage plant life, such as trampling slow-growing beds of moss.

Protection

Tourism in Antarctica is self-regulated by the International Association of Antarctic Tour Operators (IAATO). The association has strict guidelines for its members and their ships, such as limiting the size of ships allowed into Antarctic waters. The numbers of people that can land at sites are also limited. The association is seen as being successful in managing tourism in the area; after all, if damage to Antarctica occurs, the attractiveness to tourists will be lost. Membership of IAATO, however, is not compulsory, and there is still the possibility of businesses that don't belong to the association bringing in larger ships carrying more people and causing more damage. This has not happened so far but, if it did, nothing could be done to prevent it as there are no international laws governing the area.

The future of Antarctic tourism

While virtually all tourists currently access Antarctica by boat, this may be about to change. The Australian government has spent \$46 million to put a regular air service in place between Hobart and Casey Station in Antarctica. This has meant the construction of a reliable runway on a 700-metre-thick glacier. Airbus A319 planes have been modified with long-range fuel tanks added so that a return flight to Hobart can be made without refuelling. This minimises the chances of a fuel spill in the pristine environment.

The service will be for scientists and researchers working from the Australian bases in the summer months and will reduce the current three-week sea journey to a four-and-a-half-hour flight. This will allow more scientists to visit Antarctica.

While tourist flights from Australia currently do not land in Antarctica, the technology used to construct this runway may be employed by tour operators in the future. It is important to remember, however, that Antarctica remains a challenging environment to visit and this will always keep the number of tourists relatively low.

Source 3

The passengers and crew of the first flight from Hobart to Antarctica in 2008 gather beside the runway. In the centre of the front row is Peter Garrett, Australia's environment minister at the time.



Check your learning 5.17

Remember and understand

- 1 Why do so few tourists visit Antarctica?
- 2 Would you like to visit Antarctica? Give some reasons for your answer.

Apply and analyse

- 3 Examine Source 2.
 - a What are the two most popular activities in Antarctica?
 - b What are some of the potential environmental impacts of these activities?
 - c What percentage of tourists take a flight in an aircraft?
 - d Why might this percentage increase in the future?
- 4 Discuss some of the potential and real environmental impacts of aeroplane flights to Antarctica.

Evaluate and create

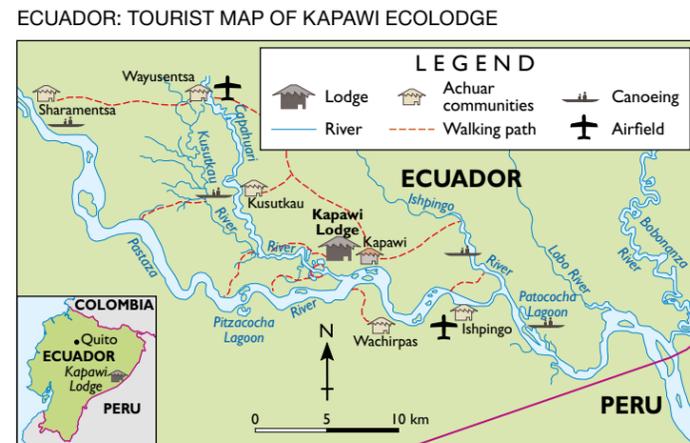
- 5 Design a poster that will be displayed in the rooms of a cruise ship which will sail to Antarctica. Your poster should outline a code of behaviour for tourists who will travel on the ship, to educate and guide them on how to reduce their environmental impact. Because not all passengers will speak the same language you will need to use pictures and symbols rather than words on your poster.

5.18 Impacts of ecotourism

Many tourists are becoming aware of the impacts of their travel on people and places they visit. As a result, many of them have started looking for opportunities to reduce these impacts. In response to this growing awareness, many destinations are developing ecotourism options. These tend to be nature-based, educational and designed to have a minimal impact on the environment. Ecotourism is now one of the fastest growing tourism sectors.

Case study: Kapawi Ecolodge, Ecuador

The Kapawi Ecolodge and Reserve is located in the Amazon Basin, 250 kilometres south-east of Quito (see Source 2). It is close to the border of Ecuador and Peru on the Pastaza River, a major tributary of the Amazon. People can really only reach Kapawi by air or by a three-day canoe trip – it is a 10-day walk to the nearest town. Because of this Kapawi is one of the most pristine and remote areas of the Amazon Basin. It is also one of the most biologically diverse areas on Earth with 10000 species of plants and more than 570 species of birds. The lodge is located in the territory of the Indigenous Achuar people, which covers 5000 square kilometres and is home to 6000 Achuar.



Source 2 Source: Oxford University Press

The Kapawi project began in 1996 as a partnership between Conodros (an Ecuadorian tour company) and the Achuar people. They wanted to start a sustainable business that would preserve the unique cultural and environmental assets of Ecuador’s Amazon Basin. Conodros provided the initial funding, management and technological expertise to get the project started. Full management of the project was handed over to the Achuar on 1 January 2008. They now have total ownership and responsibility for the Kapawi Ecolodge and Reserve. As management of the environment is an ongoing process, Kapawi continues to strive to improve management processes, and involves guests in this too.



Source 1 Kapawi Ecolodge, deep in the Amazon rainforest.



Source 3 Achuar people teach tourists staying at the Kapawi Ecolodge about the biodiversity of the Amazon rainforest.

Before Kapawi, most of the Achuar had earned money from raising beef cattle. This agricultural activity causes significant damage to the environment. Today, members of the 56 Achuar communities earn a significant percentage of their income from ecotourism. For the communities near the lodge, up to 60 per cent of their total income comes from direct employment at the lodge, supplying products and selling handicrafts.

Leave nothing but footprints, take nothing but photographs

The lodges at Kapawi are built using traditional Achuar architecture techniques combined with modern technologies. This includes building on stilts to minimise the impact on surrounding vegetation. All soaps, detergents and shampoos used are biodegradable. Sewage goes through a three-step

drainage process. Plastic, glass and metal waste is packed and taken away to be recycled. Paper waste is burned. Biodegradable garbage is composted. Batteries are collected and taken to countries with recycling facilities. The entire lodge is powered by a hybrid system of solar energy and a diesel generator. Showers have solar-heated water.

Tourists who visit Kapawi can take part in many activities, including hiking, bird-watching, visits to local Achuar communities, learning about traditional foods and medicine, camping and canoeing.

Kapawi Ecolodge is a successful sustainable tourism business. Tourism has been managed so that the environment and the culture of the Achuar people can be maintained. In addition, the Achuar people have found sustainable ways to become part of the world economy while still maintaining their traditions.

Check your learning 5.18

Remember and understand

- 1 Describe the location of the Kapawi Ecolodge.
- 2 What are some of the interconnections between the Achuar people and people from other places?

Apply and analyse

- 3 Copy and complete this table to list some of the ways in which environmental impacts are minimised at Kapawi:

Features of buildings	Tourist behaviours	Reducing waste

- 4 How does the isolation of the ecolodge help in minimising its environmental impacts?
- 5 Ecotourism can be defined as ‘responsible travel to natural areas that conserves the environment and improves the wellbeing of local people’. Do you think that the Kapawi Ecolodge is an example of ecotourism? Give three reasons for your answer.

Evaluate and create

- 6 Compare the tourist developments at Kapawi (see Source 1) and Cancun (see Source 1 on page 210). What are the key differences? Discuss which of these types of development is most likely to represent the future of tourism. What will this mean for environmental impacts in the future?

5C rich task

Tourism at Gallipoli

On 25 April 1915, Australian and New Zealand troops fighting in World War I landed on the Gallipoli Peninsula. The battle lasted about eight months and claimed the lives of around 8000 Australians. It is seen by many as a milestone event in our nation's history. Thousands of Australians visit Gallipoli every year to pay their respects to the soldiers who fought there and to see this famous place for themselves.

While a few busloads of visitors arrive at Anzac Cove on an average day, on Anzac Day, the anniversary of the landing, tourist numbers increase dramatically. This gained popularity in 1990 when then Prime Minister Bob Hawke attended the dawn service and declared that 'Gallipoli is, in one sense, a part of Australia'. Anzac Day dawn services at Anzac Cove and Lone Pine now attract up to

10 000 people, most of whom sleep on the ground the night before the service.

To cope with visitor demands during this busy time, bus movements on the narrow winding roads are restricted, temporary grandstands are erected and a special group of Australian volunteers clean up rubbish once the visitors depart.

While many Australians see a visit to Gallipoli on Anzac Day as their right, others believe that the sheer number of visitors degrades the environment and demeans the memory of those who fought there. Some guidebooks are now recommending that tourists not visit on Anzac Day but go on other, less busy days instead. There are some who hold the view that perhaps Australians shouldn't be going there at all, or at least should be better informed about the Gallipoli Campaign.

Visiting Gallipoli on Anzac Day has become, amongst other things, a geographical issue. This is because the landscape itself is fragile, and the size of Anzac Cove, some feel, cannot support the number of visitors that descend on the Cove at once on Anzac Day. It is also an issue because people have different points of view. This is often the case in geography and comes about, in part, because people have different reasons for connecting to places.



Source 1 Tourists attending the Anzac Day service at Lone Pine cemetery, Gallipoli.

skilldrill: Data and information

Interpreting qualitative data about geographical issues and events

Geographers need to consider different points of view, and the reasons behind these different viewpoints, when evaluating a geographical issue or event. They may use qualitative or quantitative data when doing this.

When presented with qualitative data like news pieces, blogs, or research articles, geographers will examine the opinions in these sources, evaluate the sources and the motivation behind them, and analyse the issue or event using this information.

Follow these steps when interpreting qualitative data related to a geographical issue or event.

Step 1 Identify the issue you wish to investigate.

Step 2 Gather the relevant sources of qualitative data.

Step 3 Carefully read each source. Highlight or take note of the following:

- What do you know about the person who expressed this opinion?
- What possible bias may this person have about this issue?
- What is their opinion on this issue?
- What evidence or information do they use to support their opinion?
- Why did they write or publish the piece? For example, were they paid to write it?
- Who is the target audience?
- What result do you think the writer wants? For example, do they want to sway public opinion or change a current practice?
- Is the source reliable?

Step 4 Using your answers to the questions above, examine the motivation behind the piece. Is the person approaching the issue from a historical, economic, cultural or social perspective?

Step 5 Analyse the issue by comparing the different points of view provided in each source. You can ask questions like these to help you do this:

- What are the main points raised about the issue?
- Is there anything that the writers agree on?
- What are the main points on which they disagree?
- How does their perspective (historical, economic, cultural or social) influence their opinion?

Apply the skill

Following the steps provided, examine each of the four following Sources which express different points of view about visiting Gallipoli on Anzac Day.

- 1 Do you think Virginia Maxwell (see Source 2) is writing from a historical, economic, cultural or spiritual perspective? Why do you think this? List your reasons.
- 2 Describe the issues surrounding visiting Gallipoli in your own words. Use the key concepts of environment and place in your description.
- 3 Compare the pieces written by Shelley (Source 5) and Erin (see Source 6) in their blogs.
 - a How do you think a discussion between Erin and Shelley might go if they were to meet? Write a short dialogue based on the conversation they might have about their views on Gallipoli.
 - b With a partner, present your dialogue in a role-play for the class. Be prepared to stay in character and answer questions from your classmates about your feelings on Anzac Day.
- 4 Why do you think people can have such different points of view about geographical issues? Identify another place you think people might have different viewpoints about and list the possible reasons for this. You could research somewhere like Cronulla Beach in Sydney, for example, or the Franklin River in Tasmania if you are stuck for a place to write about.

Source 2

It's important to remember that this site is just as significant and important for the Turkish people as for the Australians, the New Zealanders and the British. Visitors who come at other times than on Anzac Day get a much better chance to do some quiet reflection, get the full historical context from the tour guides and get the Turkish perspective on the battle as well. This is something that you won't get on a crowded overnight package trip from Istanbul, which is how most people end up seeing the site. It's also easier to find accommodation at other times, and avoids damage to the park, which is fragile.

Virginia Maxwell, co-author of the *Lonely Planet: Turkey* guide

Source 3

Instead of commemorating the heroism of Australian soldiers who landed on that fatal shore in 1915, the conference in October concluded that Australians should reframe the landing as an unmitigated disaster and apologise to the Turkish Government for invading their country.

'The landing was nothing but an unjustified invasion of foreign soil like the British invasion of Aboriginal land in 1788,' says John Lack of the University of Melbourne. 'And we should put the two coves together – Sydney Cove and Anzac Cove – because both invasions were just as bad as each other and cost a lot of lives.' ...

John McQuilton of Wollongong University says Australians should look at the story of Gallipoli from the Turkish angle to see how they feel about it, a view that has been neglected for too long. The Turks lost 86 000 soldiers compared with Australia's 8709. 'It is now time to embrace our old enemy Turkey,' he says.

McQuilton says Australians should stop going to Gallipoli and claiming rights over Turkish soil for their commemorative activities. 'This land belongs to Turkey and the reason they are building so many memorials of their own is they want it back,' he says.

'Charge of the rewrite brigade,' by Jonathan King
http://www.battleforaustralia.org/battaust/AustInvasion/References/Stanley_on_Gallipoli.html



Source 4 For many tourists, a visit to Gallipoli at a quiet time allows them to connect more closely with this place.

Source 5

We will never forget. The journey that we were privileged to experience on the Gallipoli peninsula was incredible! A journey of both heart-gripping and breathtaking emotions as well as a surreal pilgrimage; a tiny glimpse of what the Anzacs went through on the 25th April, 1915. ...

We embarked on a 5-day tour with Top Deck, discovering a quick peek of Istanbul and Gallipoli. ... it's fair to say that we left our hearts on the shores of the Gallipoli National Park, with the many remaining there. Men of bravery, men of obedience, and men, who courageously and heroically left family, loved ones and their country behind.

... if you ever do get a chance to go to Gallipoli, especially over Anzac day, I would highly recommend it, as it really is (as cliché as it sounds) a life-changing experience.

It was an honour and an eye-opening adventure to be able to stand in the place where thousands had been laid to rest. What a memory to carry. We all walked out of the experience, knowing that we will never think of Anzac day the same. Lest we forget.

Shelley, attended the Anzac Day service, Gallipoli, 2013
<http://thesharechair.blogspot.com.au/2013/05/Anzac-day-gallipoli-lest-we-forget.html>

Source 6

I have had this rant to all of my mates who go to Gallipoli for Anzac Day.

It is a problem when Anzac Day starts to resemble the Big Day Out. There are the bogans draped in the Aussie flags who have been up all night. There are the stages, the microphones, the cameras, the celebrities, the spotlights, the lead up that could confuse the upcoming rendition of the 'Last Post' with an upcoming rock band. There are the people who have fought online and forked out hundreds for tickets. And now, there will even be ballots.

Erin, in her blog 'Lessons for the 20s something wanderer'

<http://lessonsforthe20somethingwanderer.blogspot.com.au/2013/04/lesson-28-why-im-not-at-gallipoli.html#/2013/04/lesson-28-why-im-not-at-gallipoli.html>



Source 7 View of soldiers attacking during the final days of the Gallipoli Campaign in 1915.

Extend your understanding

- 1 Research the environmental impact that visitors are having at Gallipoli, and the ways in which local authorities are responding. Present your findings in a short written report.
- 2 Design a code of behaviour for visitors attending Anzac Day services at Gallipoli, to help them minimise their impact on the environment.
- 3 Write a few paragraphs or a short speech about attending Anzac Day services at Gallipoli, framing your viewpoint from a single perspective (historical, economic, cultural or spiritual). For example, you might write your piece from the economic perspective of a tour bus operator to Gallipoli.