Solomon Islands
Social Studies
Year 7
Learner's Book

solomon islands
CURRICULUM DEVELOPMENT DIVISION

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Solomon Islands Curriculum Development Division
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Contents

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Introduction

This Learner's Book provides a course in Social Studies for Year 7, the first year of secondary school. All sections of the book are compulsory. The syllabus for this Book follows on from the Social Studies you learned at primary school.

This Book is based on an interactive approach to learning. This means you are expected to learn things for yourself by doing the activities and exercises, not just by listening to the teacher or reading the book. The activities are an essential part of the Book, and you will not learn the concepts properly unless you do the activities.

Each activity is marked by a symbol, or icon, to show you what kind of activity it is. The icons are as follows:

Thinking icon

This indicates thinking for yourself or in groups. You are expected to use your own knowledge or experience, or think about what you read in the book, and answer questions for yourself.

Practical Activity icon

The hand indicates a practical activity, such as a role play on resolving a conflict, taking part in a debate or following instructions on a map. These activities will help you to learn practical skills which you can use when you leave school.

Writing Activity icon

Some activities require you to write in your exercise book or elsewhere.

Group Work icon

Group work means that you are expected to discuss something in groups and report back on what your group discussed. In this way you learn from each other and how to work together as a group to address or solve a problem.

Fieldwork icon

Field work is an enjoyable and practical part of Social Studies. For these activities, you will need to go out of the classroom to study parts of your environment, such as the way that rivers flow, or the distances between landmarks in your school grounds.

Discussion icon

Some activities require you to discuss an issue with a partner or as part of a group. It is similar to group work, but usually does not require any writing.

Good luck in using the book.

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Chapter 1

Where Did We Come From?

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1 Introduction: *Man long wea?*

Social Studies is about people and places. In Solomon Islands, if we meet or talk about someone new, the first question we usually ask in Pijin is '*Man* or *Mere long wea*?' Social Studies links with this idea of place or *ples*, that is, the importance of knowing where people come from.

Activity 1

1 Where do the people in your class come from? Your teacher will draw or pin a map on the board to show your province or the whole Solomon Islands. Place a pin or mark on the map to show where you come from. Everyone in the class will do this.

2 Does your school have people mainly from the local area, the whole province or the whole Solomon Islands? Where do most people in your class come from?

Sometimes we think that people have always lived where they live now. In this chapter we will learn that this is not true. Most people or their ancestors—that is, the members of their family who lived long ago—lived somewhere else in the past and have **migrated** to where they live now.

Activity 2

Today people are moving around more than ever before. Can you suggest some of the reasons for this? In groups, write a list of the reasons why people sometimes move to live in another place.

In large countries outside Solomon Islands, what we call in Pijin *big ples*, you cannot always ask someone '*iu man long wea?*'. Most people live in cities and work in paid jobs, so they move around to where they can find work. Today this is happening for some people here.

Activity 3

Find out whether your fellow students have always lived in the same place, or whether they have moved at some time. If they have moved, find out where they used to live, where they live now and the reasons why they and their families moved.

1 Interview 10 students. Ask them:
- **a** where they live now
- **b** if they have always lived there
- **c** if not, where they used to live
- **d** if they have moved, what the reason was for moving.

2 Copy the table below and fill it in to show the results. Only fill in the last four rows for those who have moved. Try to find at least five people who have moved.

Name of student	1	2	3
Have they moved? Yes/No	?	?	?
Where they used to live	?	?	?
Where they live now	?	?	?
Temporary or permanent movement?	?	?	?
Reasons for movement	?	?	?

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3 As a class, find out how many people in the class have moved and make a list of the reasons why people have moved.

4 Have any people from your own family moved to new places? If so, why? Are their reasons for moving similar to those found in your answers to the questionnaire?

5 Identify the most common reasons why people move. Arrange the reasons in order of importance.

2 What do you know about Solomon Islands?

In this chapter, we will learn that people also moved around in the past, many thousands of years ago. We are going to study how our early ancestors came to the islands. We will look at where they came from, the routes they used, the dates of their arrival and the evidence that shows that they moved. We will also explore the main reasons why they decided to come to the islands and how they settled when they arrived.

First we will review some of the information about Solomon Islands that you learnt in primary school.

Figure 1.1 Even when people look the same, their ancestors may have come from many different places.

Activity 4

Divide into groups of not more than four and answer the following questions. The questions will test your memory and knowledge about your country, Solomon Islands. The maps in the appendix of this book may help you. Write your answers in your exercise books.

1 How many provinces or states does Solomon Islands have?

2 What is the current population of Solomon Islands?

3 What three main cultural or ethnic groups do the people belong to?

4 What is the common language used or spoken throughout the country?

5 Who are our nearest neighbours:
   a to the south-west?
   b to the north-west?
   c to the south-east?

6 Where did the name Solomon Islands originate from?

7 Solomon Islands is sometimes called a multi-cultural or multi-ethnic country or society. Can you explain what this means?

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3 Where our ancestors came from

Activity 5

This activity is to test your memory and how far you can recall events of the past. Try to answer the questions individually. Ignore those you simply cannot answer. Then form groups and compare your answers with others in your group.

1. Do you still remember the names of your grandfathers and grandmothers or your great-grandfathers and great-grandmothers?
2. Are they still alive? Approximately what years did they live?
3. Is the village you are staying in now the same one where your grandparents or ancestors lived or a new one? If not, where did they live before?
4. How do you know the answers to the questions above?
5. What have you, your family, tribe or community done to make sure that these stories pass on to future generations?

There are several ways of finding out what happened in the past. For example, if we want to know about the history of World War II and how the war changed the lives of Solomon Islanders, we have two main ways of finding this out. First, we could collect the stories of people who took part in the war. These people, who were witnesses or participants, could tell us their accounts. This kind of information is **oral history**. Let's imagine we cannot find anyone who was alive during the war. We might ask their relatives and friends to tell us the stories told to them before the person died. As this story is not an eyewitness account, by people who actually saw the events, we call it **oral tradition**. It is a story passed on from one generation to the next by word of mouth.

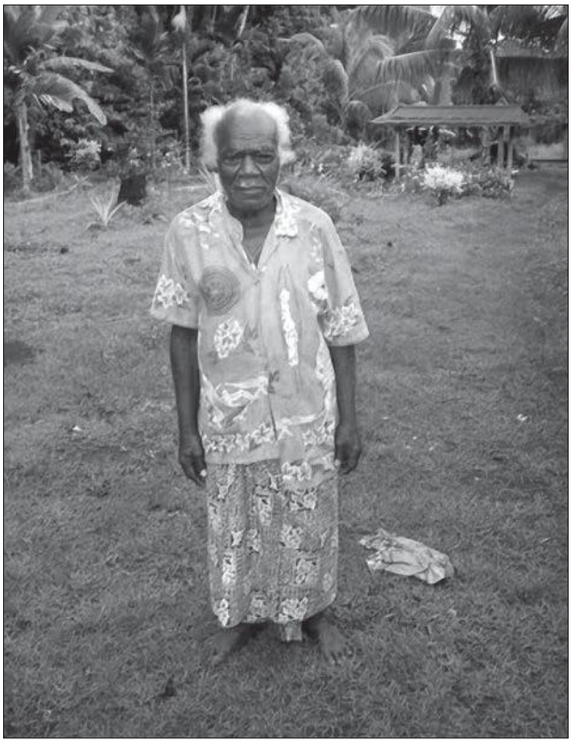

Figure 1.2 Bruno Nana can tell us some **oral history**. He helped the Japanese and Americans during World War II. Bruno's daughter has also written a small book about his experiences in the war. This is **written history**.

Thirdly, we could read the records and documents of the armies, governments, missions and individuals that were written during the years of the war. This is **written history**. Most historians rely on such records, although some also collect oral history and oral tradition.

There is a problem when we are trying to find out what happened not simply 50 years ago,

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but 500 or even 50 000 years ago. For Solomon Islands there are no written records from 500 years ago, because Europeans first brought writing with Mendaña, but most Solomon Islanders did not learn how to write until the nineteenth century. As you know, many still cannot read and write.

No-one really knows, therefore, where our ancestors came from. Oral traditions tell us about fairly recent history, but even they do not give a clear picture of the distant past of thousands of years ago. For this we can only develop **theories**, based on evidence but without being sure if they are really true. The following sections show you the evidence we can use for these theories.

Figure 1.3 The songs in custom dancing tell people the history of their community.

4 Oral traditions of Solomon Islands people

Solomon Islanders have different stories to tell about their past. They have always told their stories in many different ways, because they could not read or write. They used **myths** and **legends**, which are stories so old we are not sure if they are really true. Many people also remember their history in the songs that go with custom dances and in chants. These are **oral sources** about our past. They contain important historical information about how our ancestors lived.

Activity 6

Tell other members of your group about any songs or dances that tell part of the history of your people.

Below are two examples of traditional stories which have been passed on from generation to generation by two communities in Solomon Islands. The two stories talk about the origins of the two communities. Because they were handed down orally, or through speech, there are many versions of these stories, each slightly different.

Legend from Rennell and Bellona

The story told by the people of Rennell and Bellona says that their ancestors sailed from the island of Uvea, near Samoa, 26 generations ago.

Before you read the story, look on the map in Appendix 1 and find Uvea (near Samoa), Tikopia, Rennell and Bellona.

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Figure 1.4 This person is from Rennell.

Kaitu'u and the migration

Seven clans took part in the migration, using large canoes. A man called Kaitu'u, now famous as an ancestral hero of the present-day people, joined the voyage in a large double-hulled canoe. He had been persuaded to go after his mother dreamt of a distant island surrounded by white sand like a shell necklace. The seven clans took with them two stone god figures, following Polynesian custom. Kaitu'u also took a ceremonial staff called Ga'akautu'uti.

Heading to the south-west, they had a near disaster when a large wave swamped all the canoes except for the double-hulled canoe of Kaitu'u and an outrigger sailed by Taupongi and his clan. The survivors of the other clans were picked up by Kaitu'u. One of the gods was lost overboard, so a replacement was cut from a cliff in a place called Henuatai, assumed today to be a place in Tikopia (Temotu Province).

After a long voyage, they found the islands they were searching for. They arrived first at the south-eastern end of Rennell where they set the two gods ashore and found a large inland lake, now called Te Nggano. However, the gods returned to the canoe under their own power, persuading the party to travel on to Bellona. There, the two gods jumped up onto the sand beach, and everyone went ashore. They found a group of small, black, hairy people called Hiti. Kaitu'u and his people killed all of these. You can still visit the Hiti caves. Due to fighting between the clans, only one of the voyaging families—the Taupogi clan who settled West Bellona—survived, together with Kaitu'u who became a powerful god-like chief, and controlled the rest of Bellona and all of Rennell. Everyone on the two islands now is descended from these two clans.

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Legend from Ranongga

The second story comes from Ranongga and tells how some of the people in Ranongga originally came from Rendova. After they came to Ranongga they split up again into two tribes. This tells the story of the Vitu tribe. The story was written by Isaac Alikera Jiru in a book called *Kaki Vavakato pa Ganoqa: More stories from Ranongga,* USP, Suva, 1995. This might be in your library.

Find Ranongga and Rendova Islands in Western Province on the map in Appendix 1 of this book.

The Vitu tribe

In this story I will tell you the origin of the Vitu tribe, the tribe of my father, which left Ugele on the island of Rendova and came ashore at Kudu on the island of Ranongga. This is the place of the tribe of George Hili. It is called Kevo.

The people who settled in Kevo were the tribe of my father, the Vitu tribe. While they were living at Kevo many were born to the tribe and it grew big, so the place where they lived was too small. So the woman chief of the Vitu, whose name was Vilungoele, looked for another place where some of them could live. She bought some land from another woman chief called Olopango. The place was called Angiri Lavata.

They lived at Angiri Lavata for many years. During that time there began a sharp disagreement between two sisters whose names were Ginja Avara and Ganja Avara. They made each other angry. In the end they separated their belongings, the money, the land and their magic. Ganja Avara moved to the Kubokota side near the river at Maroro and settled at the base of the Nyou tree. Ganja Avara then bought more land and the small harbours at Tongerai and Pienuna. She bought these for traditional money: one *bakia* and one *bareke*.

So starting at that time that was the land of the Vitu.

Activity 7

Write your answers in your exercise book.

1. Find the meaning of the following words: myths, legends, dances, songs and chants. Is there any difference?
2. Identify where the islands mentioned in the two stories are located.
3. List what you know about the people of Rennell and Bellona: what they look like, what sort of language they speak, any special customs they follow and anything else important you know about them.
4. The people in Ranongga had female chiefs. Does this happen in your area? Who inherits or owns the land in your area—men or women?
5. Do you know a story about where your ancestors are said to have come from or how your people originated? Tell it to your friend and then write the story in your exercise book. If you don't know any story, try to find out a story from the old people in your home area, or your teacher may invite some old people from the area near the school to tell you a story.

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5 How we know that people migrated

These stories, and other ones like them, suggest that people did migrate or move in the past and that the people who live in Solomon Islands now may have come from somewhere else. A number of different kinds of people study evidence to show that people have migrated.

1 **Oral historians**
These people collect and write down stories like the ones you have just read. These may tell us exactly where people came from, or just that they moved from somewhere else.

2 **Linguists**
These people study languages. If they discover that languages in different places are similar to each other then we can say that the people may have originally come from the same place.

Figure 1.5 A linguist recording this man speaking in order to study and document his language.

3 **Anthropologists**
These people study people's **culture** and **customs**. If they find that groups of people in different areas have very similar culture and customs, it suggests they are related to each other and may have originally come from the same place.

4 **Archaeologists**
These people dig up **artefacts** or things made by humans, such as clay pots, tools or weapons, and also traces of human bones. Using special methods, **archaeologists** can often tell how many years ago these things were made.

If archaeologists discover similar things in different places, we can say that the people in the two places may have originally come from the same place, or that one of the groups moved from their original place.

Figure 1.6 Archaeologist

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5 Ethno-botanists

These people study plants and their spread and cultivation by human groups. They can often work out the movement of people by studying the spread of plants, such as yams or coconuts.

Figure 1.7 Ethno-botanist

6 Biologists

These people study humans. They have discovered that our bodies all contain something called **DNA** and each group of people has different DNA. So if we discover that two groups of people have the same DNA they may have originally come from the same place.

Figure 1.8 These people in Taiwan have the same DNA as Maoris in New Zealand, so they may be related to each other. Their language and culture is also similar to Polynesians. Does their dress also look Polynesian? Do they look Polynesian?

7 Geologists

These people study the Earth's surface. They can tell us about changes, such as the rise and fall of sea levels. These changes occur over long, long periods of time—thousands and millions of years.

If **geologists** discover that humans used to live in places that are now covered by the sea we can say that the sea level might have been lower some time in the past. Later it may have risen and covered those places.

Figure 1.9 Geologist

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6 Where did we come from?

If you put all these pieces of historical evidence together it strongly suggests that the people of Solomon Islands and other Pacific Island countries originally came from South-East Asia.

Activity 8

1 Look at the maps of the Western Pacific and South-East Asia in Appendix 2. Name the main countries in South-East Asia.

2 Look at the island countries in the Pacific and answer the following.
- **a** Which country has the biggest land area?
- **b** Which two countries are closest to Solomon Islands?

3 Fiji is in the middle of the South Pacific. Which countries are:
- **a** north of Fiji?
- **b** east of Fiji?
- **c** south-east of Fiji?

4 Figure 1.10 shows possible routes by which people may have travelled from South-East Asia to the Pacific Islands and Australia. If people did travel this way:
- **a** which two places in the Pacific are nearest to South-East Asia and would probably have been reached first?
- **b** which two places would probably have been reached last?
- **c** would Solomon Islands have been reached before or after most other Pacific Island countries?

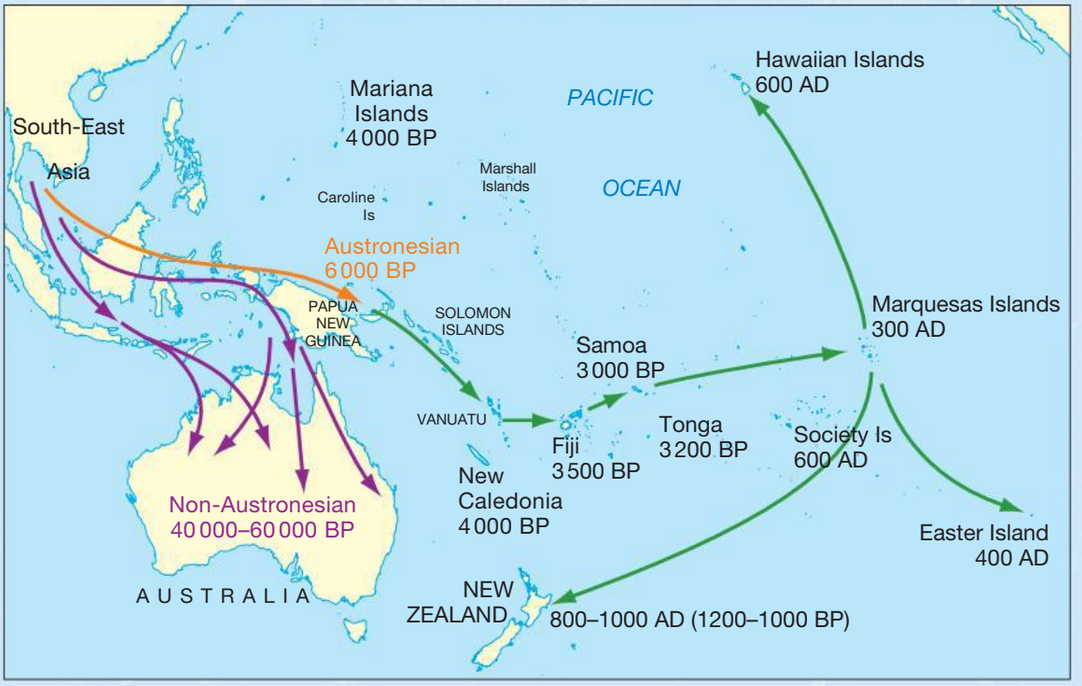

Figure 1.10 Possible migration routes

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What suggests that people did come from South-East Asia? Nearly all the evidence found by the scientists mentioned above suggests that this is where people came from. This is what they have found out.

- *Evidence from oral history*: In most Polynesian islands there are clear stories of migration, like that of Kaitu'u and Taupongi. The Maori history says that they came to New Zealand in seven canoes, all of which have names. Many **Polynesian** islands have similar stories. **Melanesians** have fewer stories like this, perhaps because they arrived on their islands much longer ago and have forgotten about their origins.
- *Evidence from linguists*: Most languages of the Pacific, including Solomon Islands languages and Polynesian languages like Samoan and Tongan, are similar to each other and share words like *niu* for coconut. Many languages of South-East Asia, like Malay, are also similar. These are all called **Austronesian** languages. This strongly suggests that people speaking these languages originally came from the same place.
- *Evidence from anthropologists*: It is well known that Polynesians everywhere from Ontong Java and Tikopia to Tahiti and Hawai'i have a similar culture. They all have chiefs, eat similar foods, do similar dances, build outrigger canoes and have a culture based on sharing in extended families. But their culture is also similar in many ways to Melanesian and **Micronesian** cultures, so perhaps all these people are related.
- *Evidence from archaeologists*: They have discovered similar pottery called lapita from New Britain in PNG all the way across the Pacific to Tonga and Samoa. This suggests either that people migrated and took the pottery with them or that they traded with each other.
- *Evidence from ethno-botanists*: There is evidence that some types of plants now common in the Pacific Islands, such as yams and coconuts, originally came from South-East Asia.
- *Evidence from biologists*: Some people in South-East Asia have the same DNA as people in the Pacific. For instance, there is a group of people in Taiwan who share some DNA with the Maori people in New Zealand! You can see these people in Fig. 1.9. They also speak a language similar to Polynesian languages; may use tattoos; and they do dances similar to the Maori Haka.

The question is how and why did these people move from South-East Asia tens of thousands of years ago? This is where the geologists can help us.

7 World changes in climate and land surface

Geologists have discovered evidence all over the world of a very big climate change in the past which affected the environment and caused human beings to move or migrate.

They believe that thousands of years ago, the **ice caps** at the **North and South Poles** were much bigger because the Earth was cooler. A lot of the water now in the seas was trapped at the poles as ice. This meant that the sea level was much lower, and places which are now under the sea were then dry land. This is known because divers have discovered caves where people used to live which are now under the sea. We know that people used to live in

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these caves, as they contain artefacts used by humans, and remains of fire which must have been used for cooking.

Look at the map in Figure 1.11. When the sea level was lower the following islands were joined together into big land masses.

- The present islands of Indonesia—including Sumatra, Java and Borneo—were joined to the mainland of Asia in an area scientists call **Sunda**.
- Papua New Guinea and Tasmania were joined to Australia, forming the big continent of **Sahul**.
- Between Sunda and Sahul the sea was shallow.

Activity 9

Why did this change of sea level make it easier for people to migrate?

Later on there were more changes to the climate, and large areas of the ice caps slowly melted. When ice melts it becomes water. The water flowed into the oceans. All over the world the level of the seas rose. Land which was once dry was covered with water. Some islands were totally covered by sea, while others became separated by water. This change was very slow and took many thousands of years to happen. However, in some places it may have been quite fast. This may be the origin of the stories of Noah's flood in the Bible. There are similar stories of great floods all over the world, especially in South-East Asia.

Activity 10

1 What evidence in the text suggests that places which were once dry are now covered by the sea?

2 Because of this change in sea level there were three stages of migration: one when the land masses were joined together and two more after the sea rose. Suggest one possible difference between the first migration and the later migrations.

Figure 1.11 Sunda and Sahul during the Ice Age

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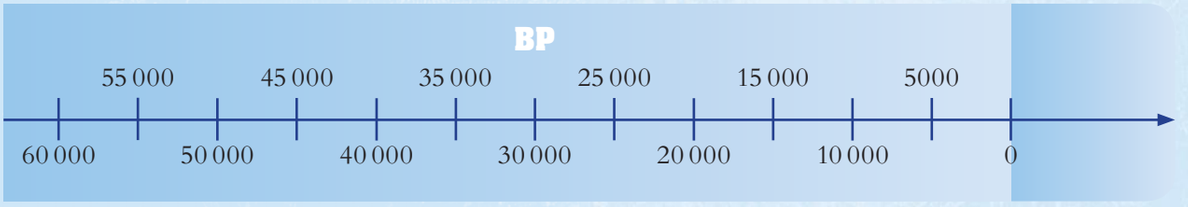
3 Copy the time line below and, as you read this section, plot on the time line the arrival of:
- **a** the **Australoids**
- **b** the **non-Austronesians** or Papuans
- **c** the **Austronesians**.



Note: **BP** means Before the Present i.e. 50 000 BP means 50 000 years before the present, or 50 000 years ago. People who study very old history do not use **AD** or CE as we normally do. AD counts the years after the birth of Christ i.e. 2007 means 2007 years after the birth of Christ (and CE stands for Common Era; it is a non-Christian term for AD). But ancient historians count backwards from the present, for example, 2000 years ago or 2000 BP.

8 First wave of settlers: Australoids

About 60 000 to 40 000 BP (Before the Present), during the **ice age** when a lot of islands were still joined together, the first early human settlers came to New Guinea and Australia, from somewhere in South-East Asia. They could have walked overland from South-East Asia to the edge of Sunda and then paddled across the shallow sea to Sahul and walked from New Guinea to Australia. These first human settlers were the Australoids.

Some of the features of Australoid people and their way of life include:
- they were **hunters and food gatherers**
- they were **nomads** who did not have permanent settlements, but moved all the time in search of food
- they did not have gardens
- they lived in small groups
- they were not builders of ocean-going canoes.

Hunters and food gatherers usually need a lot of land to move across to get enough food. There must be plenty of animals and birds to hunt. Also, the Australoids were not builders of ocean-going canoes. For these reasons the Australoids seem to have stayed on the big land masses of New Guinea and Australia. They became the ancestors of the Aborigines and some of the people of Papua New Guinea, especially the highlanders.

Activity 11

Suggest two reasons why the Australoids would have found it difficult to live in Solomon Islands.

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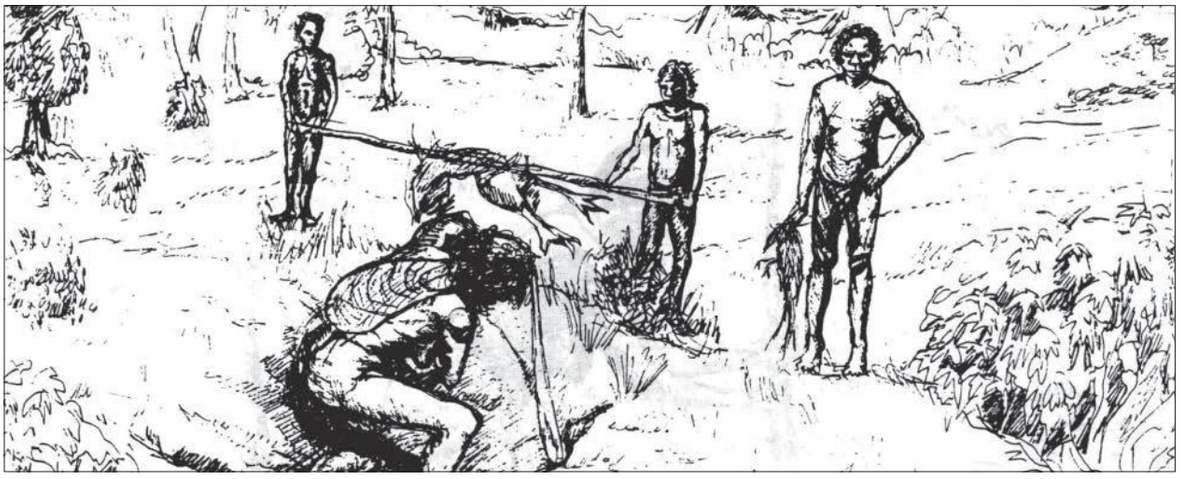

Figure 1.12 These hunters and food gatherers came to what we now call New Guinea and Australia. They were known as Australoids.

9 Second wave of settlers: non-Austronesians or Papuans

Some time between 15 000 and 5000 years ago there were big changes. The ice caps melted. Have another look at Figure 1.11. The sea rose very slowly and perhaps rapidly at times. About this time there were other changes too. Probably about 10 000 BP the people of South-East Asia developed farming. They learned how to cultivate plants instead of just looking for food in the jungle. They began to grow plants like taro, yams, sugar cane and perhaps rice. They kept and tamed pigs, chickens and dogs.

This discovery of farming was very important. It meant more people could be fed, so the population increased. It seems that, with increasing population and the need for good land area, some groups had to move south, to New Guinea, to find a place to live. This did not happen in a month, a year or even 100 years. The series of migrations took many hundreds or even thousands of years. They started at least 5000 years BP.

The **migrants** were different groups of people. With the water rising, they 'hopped' from island to island using canoes. Their migration was slow, taking over 3000 years, so that these people forgot their origins and intermarried with other groups.

Linguists believe that all the languages of these people are related. They call them **non-Austronesian** people, sometimes called **Papuans**, although they are not the same as the modern Papuans in Papua New Guinea. These settlers, over a long time, slowly moved along the coasts, up the valleys and over the mountains until they were scattered all over New Guinea.

Ethno-botanists tell us that taro, yam, coconut, sugar cane, pigs, dogs and chickens all came from the South-East Asian region and were brought into New Guinea. Some people probably settled in the islands of Papua New Guinea and Solomon Islands, as far as the Santa Cruz group. Archaeologists and linguists believe some of these people may have been the ancestors of people in parts of Western Solomons, Savo, Santa Cruz and the Reef islands.

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Figure 1.13 Migration pattern of the Austronesians

10 Third wave of settlers: Austronesians

The third group of human settlers came later. They were known as Austronesians, the ancestors of today's Melanesian, Polynesian and Micronesian peoples. They entered the Pacific region mainly through what are now Papua New Guinea and the Mariana Islands. They came from South-East Asia (see Figure 1.13). They brought with them new crops and ideas on how to support larger populations or societies.

Austronesians developed a special kind of pottery called Lapita ware that is made of clay. This is found in parts of New Britain, Santa Cruz, New Caledonia, Fiji, Tonga and Samoa. This shows where these people settled, or where they traded this item with other people.

Activity 12

1 Only a few non-Austronesians reached Solomon Islands. Why do you think these people found it easier to reach New Guinea than Solomon Islands?

2 What are the main ways in which the non-Austronesians were different from the Australoids?

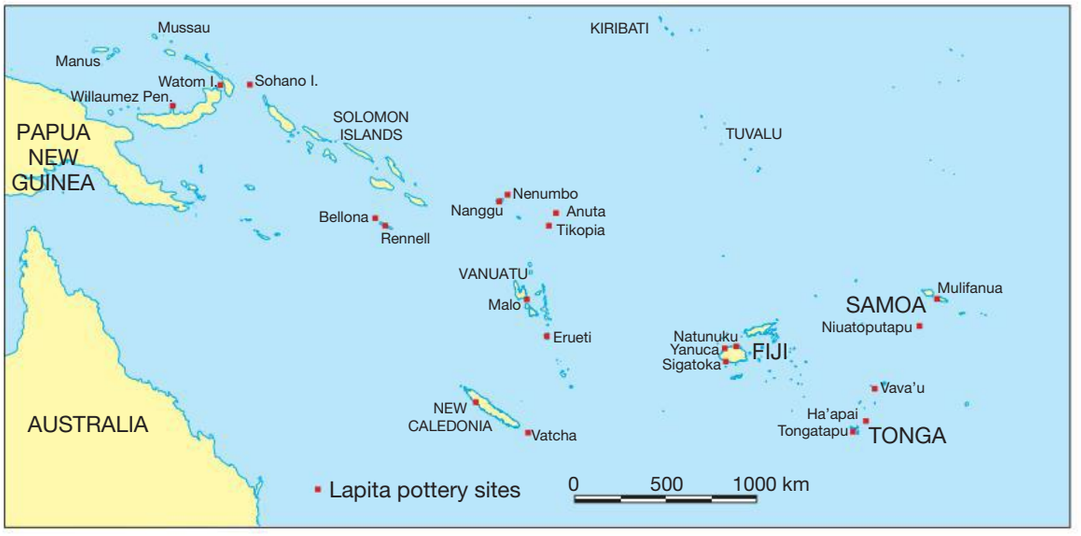

Figure 1.14 Places where Lapita pottery ware has been discovered

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Figure 1.15 The decorations on a piece of Lapita pottery. Similar decorations are found all over the areas marked on the map in Figure 1.14. This suggests that the people in these areas all migrated from the same area or that they traded with each other.

Many Austronesians were skillful sailors. They knew how to build ocean-going canoes, which were probably doubled-hulled or outriggers. They were good navigators and could read the sea and sky for signs of land. In their canoes they travelled and traded across great distances.

They reached Fiji by about 3500 BP. From there they spread into Polynesia, including Hawai'i in about 1400 BP (600 AD) and New Zealand by 1200–1000 BP (800–1100 AD).

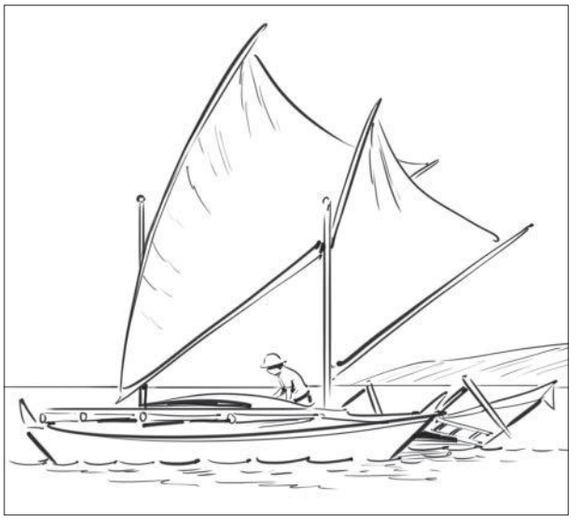

Figure 1.16 A 40-foot te puke. Tevake, a great Santa Cruz navigator in the 1960s, used a canoe like this one.

The Austronesian languages, including most Melanesian languages and all Polynesian languages, are related to each other and also related to the languages of South-East Asia. In many places the original settlers probably mixed with the Austronesians and learnt their languages. In a few places, like Santa Cruz and Savo, people kept all or parts of their original non-Austronesian language.

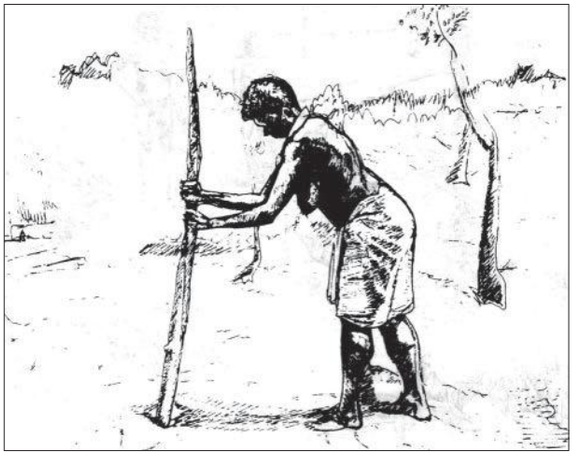

Figure 1.17 Some settlers of the Pacific were Lapita people who settled coastal areas. They went to a few places on coastal New Guinea, Solomons and Vanuatu. They were the ancestors of the people of Polynesia. They also probably settled in a few places in Micronesia.

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The slow boat and fast train migrations

There are two theories about the spread of the Austronesians.

The 'slow boat' theory

This suggests that Austronesians moved from South-East Asia into Papua New Guinea. Here they only occupied the coastal areas and the islands. The previous settlers, the non-Austronesians, continued to live in the highlands of Papua and New Guinea. The non-Austronesians slowly spread into the islands of Solomon Islands until they reached Santa Cruz. From there they set out in outrigger canoes to Vanuatu, south to New Caledonia and east to Fiji, where they arrived about 3500 BP. From Fiji they voyaged to all the other islands now occupied by their descendents, the Polynesians: Samoa, Tonga, Tahiti and Hawai'i. Some turned west to New Zealand and, like Kaitu'u and Taupongi, to the outer islands of Solomons. As we have seen, these islands were settled only recently: Rennell and Bellana about 600–700 BC; Hawai'i about 1400 BP and New Zealand about 1200–1000 BP.

Activity 13

Kaitu'u and Taupongi arrived in Rennell and Bellona about 26 generations ago. About how many years is this?

There are three problems with this slow boat theory.

1 It does not explain why the Polynesians are brown and Melanesians are black, and why the two have different cultures. For instance, all Polynesians have outrigger canoes, but almost no Melanesians do. If Melanesians and Polynesians all came the same way, why are they so different?

2 It has recently been discovered that there are very few connections between the DNA of Polynesians and the Melanesians of Solomon Islands. The DNA of Polynesians is more closely linked to people of Taiwan and East Asia.

3 As you saw on the map in Figure 1.14, Lapita pottery, which shows evidence of this migration, is found in some islands of Papua New Guinea, especially New Britain; in Santa Cruz at Nangu; in Reef Islands at Pileni and Nenumbo; and in Tikopia and Anuta. It is then found much further east in Vanuatu, Fiji, Samoa and Tonga. However, no Lapita pottery has been found in the main islands of Solomons.

The 'fast train' theory

This suggests that there may have been two migrations. Early on, at least 5000 years ago or probably more, Austronesians moved into the main islands of Solomons, mixed with some non-Austronesians already there, and stayed there. These are the ancestors of modern Melanesians.

A second group, who developed the Lapita pottery and had outrigger canoes, moved east much later, around 3500 BP. The main islands of Solomons were already occupied, so they sailed to the north of Solomon Islands through Ontong Java and Sikaiana to Pileni and then Santa Cruz. From there, they took their pottery to Fiji and all the areas we now call Polynesia, and also to Vanuatu and New Caledonia. These are the people on the 'fast train'.

A few, like Kaitu'u and Taupongi, may have formed a 'reverse train' and come back to the west later to occupy islands like Rennell and Bellona.

No-one knows which theory is correct but most people agree that the ancestors of Solomon Islanders, both Melanesian and Polynesian, did come from South-East Asia.

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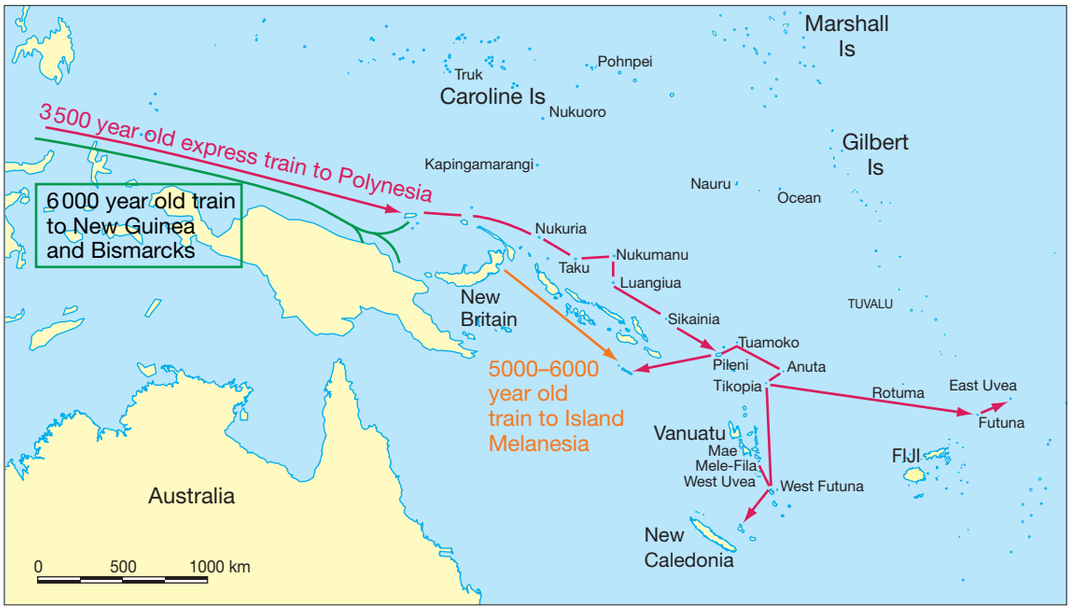

Figure 1.18 Two migrations

Activity 14

Write your answers in your exercise book.

1. Why are hunters and food gatherers nomadic?
2. Has any evidence of hunters and gatherers been found in Solomon Islands?
3. What important root crop of today's Solomon Islands is not listed among those which came from South-East Asia?
4. What two reasons are given which suggest that the 'express train' theory of the migration may be true? How does it fit with the present differences in culture of people in Solomon Islands?
5. Why would it have been important for the Lapita people to have outrigger canoes?
6. Why do people migrate?

Activity 15

1. Can you name any places in your own province or in other parts of Solomons where people from another province or other islands have come to settle permanently? Write down the name of the place and where the new people have come from.
2. In groups discuss and list the reasons why people today move or migrate from one area to another. Your answers from Activity 2 will help you.
3. Suggest why migration may be easier now than it was in the past, both in Solomon Islands and around the world.

Migration is not just something which happened in the past. Today migration is still taking place, both in Solomon Islands and around the world.

Some of the reasons why people migrate today may be similar to the reasons why they migrated in the past.

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Why did our ancestors migrate?

In Activities 2 and 15, you thought about why people migrate.

For the original ancestors of Solomon Islanders, it is difficult to find out what caused them to leave their place of origin to come to the Solomons. It is difficult partly because stories like those of Kaitu'u do not give reasons, and partly because different groups have different reasons. However, scientific and archaeological evidence has shown that a number of things may have persuaded these early migrants to leave.

Temotu people in the early 20th Century using the type of voyaging canoe used by the Pacific migrants

Activity 16

Compare the list below with the list you made for Activity 15 to show why people move today. Which of the following reasons for migrating are still true today?

1 **Looking for new land**
We have already learnt that many thousands of years ago the ice started to melt after the ice age, the sea level rose and this flooded parts of South-East Asia. Look back at the map in Figure 1.11. The area called Sunda was partly flooded and turned into the islands we now call Indonesia and the Philippines. This may have forced people to move out from these areas and look for new land. Some of them probably sailed or even paddled in canoes to New Guinea and on to Solomon Islands.

2 **Overpopulation**
If the population of an area increased, people may have moved away to look for more land. Even today, people from more crowded islands like Malaita, Reef Islands and Ontong Java are migrating to settle in Guadalcanal and other islands with more land.

3 **Curiosity and exploration**
Some people may decide to sail to other places simply out of curiosity to find out what is there. The explorers from Europe and many Polynesians did this in the past.

4 **Looking for freedom**
Sometimes people get tired of following the rules and customs of the places where they live and decide to look for new land where they will be free. Perhaps this is why Kaitu'u and Taupongi decided to leave Uvea. Today people from Samoa find life in New Zealand is free from all the customs of Samoa and some Tikopians prefer to live on other islands where their customs are less strict.

5 **Lost at sea**
Sometimes people who are fishing become lost at sea in a storm and end up on another island. This still happens to people, especially from smaller islands like Reef Islands or Ontong Java.

6 **Natural disasters**
If a cyclone or flood destroys people's land they may go in search of new or better land.

7 **Trading**
In the past Polynesians traded between different islands, Malaitans traded with Guadalcanal and Makira and some settled where they traded. The Lapita people were probably also traders, bringing their pottery to other places.

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11 How the islands were settled

The first settlers that came to the Solomon Islands came in small groups. When they arrived they did not spread out much, but lived together. Perhaps 50, 200 or 500 years later another group came from western Melanesia; then another, and another, and so on. These new arrivals either mixed with people in the existing settlements or started their own settlements. As a result, the population on the islands increased. Soon most of the islands were occupied.

People lived apart and in small groups because mountains separated them or because they were on different islands. By living apart and away from other groups, there was also less chance of **conflict** which might wipe out a small group. Another thing that encouraged people to live apart in small groups was the way most Melanesians grew crops through shifting cultivation. A lot of land was needed, so people spread out to get enough land. As new people came in, perhaps they looked for unoccupied areas to avoid fights with established settlers.

The early settlers had to deal with sickness. It seems that malaria, spread by mosquitoes, may have made people avoid certain areas where mosquitoes were common. People seemed to avoid swampy or low lying valleys, so newcomers might have kept looking for a place high in the bush or on coastal ridges.

Sometimes, natural disasters such as cyclones and landslides would have caused damage and forced people to leave areas for many years. Later groups came in and lived in the same place.

Through all these ways, different groups of people scattered and became separated, not only by sea, but also by valleys, rivers and mountains.

No-one is really sure why so many different societies with different languages developed in Solomon Islands long ago. It is remarkable that Solomon Islands and other parts of Melanesia have more small language groups than any other parts of the world. There is nowhere else with 80 languages in a population of 500 000. Perhaps the reasons given above help us to imagine how this could have occurred.

Later migrations

All this explains the way the original settlers came to Solomon Islands. However, migration did not stop there. It has continued, as we can see by looking at the different types of people who live in the country today.

Some of the different people we see today arrived later. They were not part of the original settlers. They include Europeans, Chinese, and much more recently the Gilbertese and other Pacific Islanders. These people now call Solomon Islands home. They are not thinking of going back.

We will learn about these later migrations in the next chapter.

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Glossary

AD (Anno Dominae) means 'the year of our Lord'; the way we count years after the birth of Christ, e.g. 2009 means 2009 years since the birth of Christ. In ancient history we use BP (Before the Present), see below

anthropologist a person who studies the culture and way of life of groups of people

archaeologist a person who tries to find out about people who lived in places a long time ago by digging up their remains, including bones, artefacts, tools, food remains, etc.

artefact something useful which was made by people in the past (or today) such as a tool, weapon, pottery

Australoids the first people to settle in Australia and parts of New Guinea

Austronesian related to people who migrated, including to Solomon Islands

Austronesians the people who speak languages which are all similar to each other, called Austronesian languages; they migrated to Melanesia from South-East Asia more than 3000 years ago. Polynesians, Micronesians, Indonesians, Malaysians and Philippinos also speak Austronesian languages

biologist a person who studies living things, including human beings

BP (Before the Present) the number of years that something happened before the present time

conflict a serious argument or dispute between people

culture all aspects of the way of life of a group of people, traditional and modern

customs the traditional ways a group of people do things

DNA a chemical in the body of human beings and other living things which can be used to find out if one group of people is related to another

ethno-botanist someone who studies the remains of plants and how plants and crops have been moved from one place to another

geologist a person who studies the rocks and surface of the Earth

hunters and food gatherers people who do not grow food but live by hunting wild animals and gathering wild plants

ice age a period when the world was very cold and there was more ice at the North and South Poles, so the sea level in the world was lower than today

ice cap a large area of land or sea covered by ice such as the areas near the North and South Poles

legend a very old story which is based on something which really happened

linguists people who study languages

Melanesians people who live in the islands of the South-West Pacific including Papua New Guinea, West Papua, Solomon Islands, Vanuatu, New Caledonia and Fiji, especially those with darker skins. (Black island people: Melan=black)

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Micronesians people who live on the small islands in the Pacific north of the equator including Kiribati, Federated States of Micronesia, Marshall Islands. (People of small islands: Micro = small)

migrants people who move permanently from one place to another

migrate to move permanently to live in a new place

myth a very old story which people believe but which is not really true

nomads people who have no fixed place to live but move around searching for food by gathering wild plants and hunting wild animals

non-Austronesian not related to Austronesia, probably related to the earliest people to migrate to Papua New Guinea and Solomon Islands, before the arrival of the Austronesians

North Pole the area at the far north of the Earth

oral history history not written down but passed on by people telling stories i.e. by word of mouth

oral sources all types of oral history including traditions and legends

oral tradition traditional stories and legends of the past handed down orally or by people telling stories

Papuan another name for non-Austronesian. Now used for people who live in Papua, the southern part of Papua New Guinea

Polynesians people who live mainly on the islands of the central South Pacific, including Samoa, Tonga, Tahiti and Cook Islands and New Zealand maori, all sharing a similar language and culture. (People of many islands: Poly = many)

Sahul a very large island that existed when New Guinea and Tasmania were joined to Australia during the ice age

South Pole the area at the far south of the Earth

Sunda the name for South-East Asia when the areas now forming Indonesia were joined to the mainland of Asia during the ice age

theory (theories) ideas to explain why something happened or exists

written history history which is recorded in writing, either at the time it happened or later

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Chapter 2

Who Are We?

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In the last chapter you learnt that the people who live in Solomon Islands may not have always lived here. People probably migrated from other places. This has happened in all parts of the world. Long after the Australoids migrated to Australia, people from Europe—especially from Britain—migrated there. More recently, people have migrated to Australia from Asia, so most people we now call 'Australians' are originally from Europe or Asia. Only a few of the original Australoid people, who we now call **Aboriginals**, remain in Australia. Most of the people in Britain itself originally came from other parts of Europe such as Norway, Denmark, Germany and France.

In modern times there has been further migration to Solomon Islands: Europeans (some of whom married Solomon Islanders), Chinese and most recently Gilbertese from Kiribati. There have also been many migrations within Solomon Islands.

Activity 1

Give one or more examples of groups of people who have migrated from one part of Solomon Islands to another, either in the distant past (perhaps your people originally came from another area) or recently.

1 Ethnic groups

A group of people who are similar to each other in culture, customs, ways of life and language can be called an **ethnic group**. So we can say Solomon Islands has many ethnic groups. What makes one ethnic group different from another? What ethnic groups do you belong to?

Activity 2

Work in groups. Try to work with people who come from a different language background, island or province/state from you.

Copy Table 2.2 opposite (the first one is just an example). Use the table to describe the similarities and differences between people from different areas. If you all come from the same area, think about any group of people you know who are different from you—people from a different island or people from a different culture such as Polynesians or Gilbertese, if you are not one of these.

You may have parents or grandparents from different groups, in which case you may not feel that you are from one particular group, but from more than one. In this case, use information about any of the groups you belong to.

Put the name of the group at the top of the second column. Put the name of the group you are comparing yourself with in the third column. Look at each heading in the first column. These ask you about aspects of the life or culture of each group. Write a brief note after each heading and say whether the two groups are similar or different.

Table 2.1 is an example. In this case someone from Lau is comparing themselves with someone from Tikopia. Make your own table like this one.

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Life or culture	My culture: Lau	Other person's culture: Tikopia	Similar/ different
Language	Lau	Tikopian	Different
Other language	Pijin	Pijin	Similar
Skin colour	Dark brown	Light brown	Different
Houses built of	Sago palm leaves	Sago palm leaves	Similar
Houses built on ground/ raised up	Raised up	On ground	Different
Type of canoes	Dugouts	Outrigger	Different
Where people live	Artificial islands	Near the sea	Different
Main traditional food	Sweet potato, taro	Taro	Similar
Animals kept traditionally	Pigs, chickens	Chickens, no pigs	Different
Body decoration	Cutting designs on faces	Tattoos	Different
Land inherited/owned by men or women?	Men	Men	Similar
Traditional dress made of	Grass skirts, leaves	Tapa (bark cloth), mats from pandanus	Different
Mats made from	Coconut, pandanus	Coconut, pandanus	Similar
Religion	Christianity	Christianity	Similar
Some important things people teach their children	Sharing with others; respect other people; importance of your relatives	Sharing with others; respect other people; importance of your relatives	Similar

Table 2.1 A comparison between someone from Lau and someone from Tikopia

Life or culture	My culture:	Other person's culture:	Similar/ different
Language			
Other language			
Skin colour			
Houses built of			
Houses built on ground/ raised up			
Type of canoes			
Where people live			
Main traditional food			
Animals kept traditionally			
Body decoration			
Land inherited/owned by men or women?			
Traditional dress made of			
Mats made from			
Religion			
Some important things people teach their children			

Table 2.2 Your table to complete

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Figure 2.1 An old man in Tikopia

If you find that most of your culture is similar to that of the other person, we can say you are probably from the same ethnic group. If you find that most of your culture is different to that of the other person, we can say you are probably from a different ethnic group.

In Table 2.1, the people from Lau and the people from Tikopia are clearly from two different ethnic groups. In this case, as we have learnt from the last chapter, people from Lau are Melanesians and people from Tikopia are Polynesians.

Figure 2.2 A person from Lau

However, you can belong to more than one ethnic group at the same time. This is because ethnic groups exist at different levels.

If you compared a person from Lau, like the one above, with a person from Langalanga, you would probably find that their culture and way of life was similar in almost every way except for language. However, because language is so important, we usually say that people who speak different languages are from different ethnic groups. You all know that you feel you are the same as your **wantoks**, so we can say in Solomon Islands people who are wantoks are from the same ethnic or cultural group.

However, if people from Malaita go to school in Temotu or Isabel they will find that, although they are similar in many ways to the people there, they also feel different in some ways. Usually the students from Malaita will all mix together because they feel they are similar

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to each other but different from the students of Temotu or Isabel. We can say that people from Malaita form an ethnic group because they are similar to each other, but different from people on other islands. Malaitans usually call each other *wantoks* even though they speak different languages.

In schools where there are Polynesians from Renbel, Sikaiana, Ontong Java or Tikopia, the students often form a single group and mix together for some things like dances or sports. Although they are similar to the Melanesian students, like those from Lau and Langalanga, they feel different in many ways as well. They may also call each other *wantoks*. So we can also talk about Polynesians and Melanesians as forming two different ethnic groups.

Let's go back to the person from Lau in Table 2.1. We can say they belong to three ethnic groups at the same time: they belong to the Lau ethnic group, the Malaita ethnic group and the Melanesian ethnic group. Each group is larger than the group before. The Malaita group includes the Lau group and many others, like Langalanga. The Melanesian group includes the Malaita group, as well as nearly all the other island groups in Solomon Islands. It also includes people who have similar languages and culture in Vanuatu, Papua New Guinea, New Caledonia and even Fiji.

In the same way Tikopians are also part of the Polynesian ethnic group, which includes people with similar languages and cultures all over the Pacific, from Hawai'i, Tonga, Samoa and Tahiti to the Maori in New Zealand. Here in Solomon Isalnds it includes Renbel, Sikaiana and Ontong Java.

An ethnic group, therefore, is based on similarities and differences. If a group of people is similar to each other in culture and way of life but different from other groups, we can say they form an ethnic group.

As you move out from your home area, you may find you fit into larger and larger ethnic groups. If Solomon Islanders go to study in Australia they will all find they are similar to each other in many ways, so they may call each other *wantoks*, although they speak many different languages and are only united by Pijin. Solomon Islanders may also feel they are similar to other Pacific Islanders from Papua New Guinea, Fiji, Samoa and Tonga, but they are all different in many ways from most Australians. So we might even talk of a Pacific Island ethnic group.

Figure 2.3 Pacific Islanders in Australia often become friends, even if they come from different Pacific Islands.

Activity 3

1 Make a list of all the ethnic groups you think you belong to. Compare your list with those of your friends.

2 In groups of *wantoks*, act out a story to show people a custom of your ethnic group, such as marriage, what happens when someone dies or a compensation ceremony. Act it for the rest of the class. Some of you probably do things differently from other groups. Does that mean your group is right and the other group is wrong? Explain your answer.

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2 Modern migrants in Solomon Islands

From what you have just learnt, everyone belongs to the ethnic group of people who share the same language and culture. We have also learnt that most people are also part of two different ethnic groups who came here originally: the Melanesians and the Polynesians.

Since then, people from two other ethnic groups have migrated here: Chinese and Gilbertese. Below are stories of people from these two groups.

Activity 4

Read the stories and fill in a table like the one below. For each group, show similarities and differences between that group and other Solomon Islanders.

Ethnic group	Similarities with other Solomon Islanders	Differences from other Solomon Islanders
Chinese	?	?
Gilbertese	?	?

Tasi Taniera from Gilbert Islands

Figure 2.4 Tasi Taniera

Hello, I am Tasi, and I am originally from the Gilbert Islands. The Gilbert Islands are a group of very small islands scattered over a large area of the Pacific Ocean, north-east of Solomon Islands. They used to be ruled by the British, but later gained independence and are now called Kiribati.

The British looked after both Solomon Islands and Gilbert Islands. Because Gilbert Islands are very small, they became crowded, so the British moved some of the people to Solomon Islands.

I was born in one of the Gilbert Islands called Phoenix Island and I came here with my parents in 1957 when I was still a small girl. We were part of the first group which came and we were settled and given land on Gizo Island at Titiana. Others were taken to Shortlands and later another group was settled at Wagina in Choiseul.

When my parents came here they found life hard. Their first experience was fear and uncertainty as the people of Gizo were a different colour, spoke different languages and had a different way of living. The island is much bigger than the islands in Kiribati and it has big hills, whereas all Kiribati islands are completely flat. There are mosquitoes with malaria and snakes, which we did not have in Kiribati.

At first the government gave us food but then we had to grow our own. We grow food in a similar way to Solomon Islanders by shifting cultivation. Many

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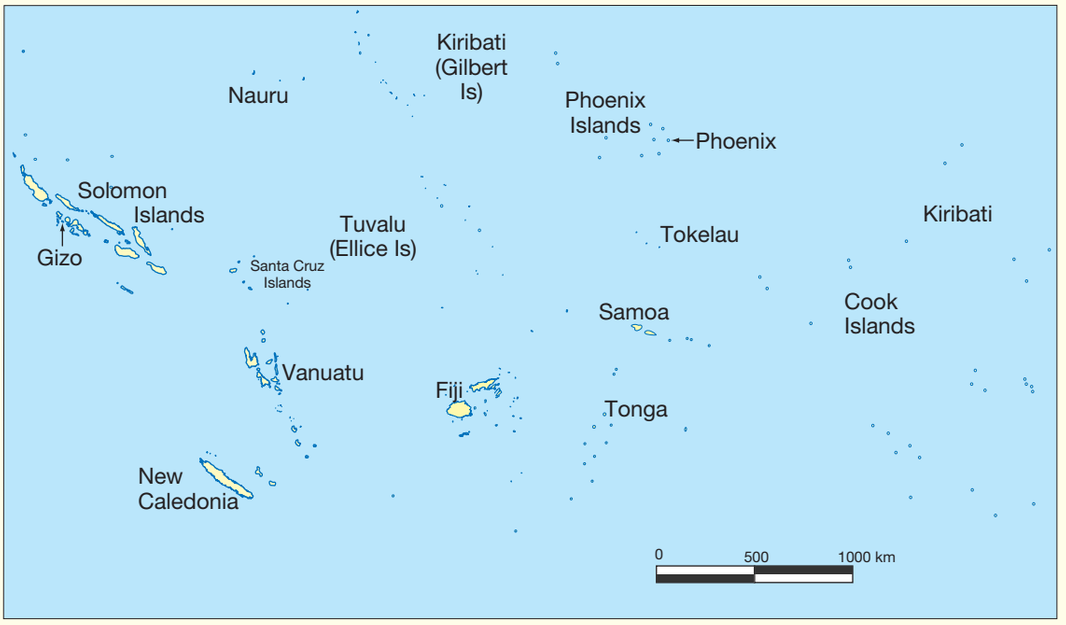

Figure 2.5 The south-west Pacific

of our foods—like breadfruit, *kakake* or taro and coconuts—were similar and we could grow these here, although on Kiribati we did not grow much sweet potato. Fishing is very important in Kiribati and we could catch fish like back home, but some of the methods are different. We have traditional ways of catching sharks and special traps for eel fish. Our canoes are outriggers like the *tepuke* in Duff Islands, not dugouts like those in Gizo. Some of our ways of cooking are different, although we use stone ovens. One thing we enjoy eating is raw fish.

Figure 2.6 Gilbertese dancing

In Titiana we built our own houses using sago palm leaves, but our houses usually have no rooms—just one big space inside. We built our village right down by the sea. Some of our houses are now built more like Melanesian houses.

We continued to do our own custom dances, which are different from most Solomon Islands dances. We sway our hips a lot, especially the girls, and we do special movements with our hands and arms. Our dances have become very popular with tourists and we entertain in the hotels in Gizo, and now in Honiara. We wear colourful lavalavas and many flowers around our necks and in our hair.

We have many custom ceremonies which are different from Melanesia, including for the circumcision of boys and the first menstruation of a daughter, as well as engagement, marriage and death. Some of these ceremonies, such as first menstruation, are changing as we have lived here a long time.

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All our young people were born here and they all speak Pijin and go to school with Solomon Islanders. They are losing many of our traditional customs and skills like weaving and fishing. Many people have now married Melanesians and other Solomon Islanders so their children are becoming more like other Solomon Islanders. Many people have moved to other parts of Solomon Islands, especially Honiara and other towns. I think our culture will disappear unless we make sure we teach it to our children.

H. M. Long from China

Figure 2.7 H. M. Long

Hello. My name is Ho Ming Long. My father came to Solomon Islands in about 1930. He came to work as a carpenter for Burns Philp in Tulagi. I was born in Tulagi before World War II. During the war we had to go to Makira and after the war we came back to Honiara on a government ship. The Americans were still here then.

My father went to work for the Public Works Department as a 'boss man' carpenter. He helped to take out all the buildings which the Americans had built at Henderson and move them to Honiara. Many of the buildings had big round roofs made from corrugated roofing iron, which we now call copper. You can still see some of these very old buildings in Honiara.

We used these to build China Town, where many Chinese came and opened shops. They built rows of shops on both sides of the road along the bank of the Mataniko River. At the end of the road was the old wooden bridge which the Americans had built over the Mataniko. This was the only bridge over the river. Some of the old stores like Aba, QQQ and Chan Wing are still there, but many have now been replaced by other families who have come from China more recently. Many Chinese were traders, either keeping shops or exporting our main goods like coconut (copra) and trochus shells.

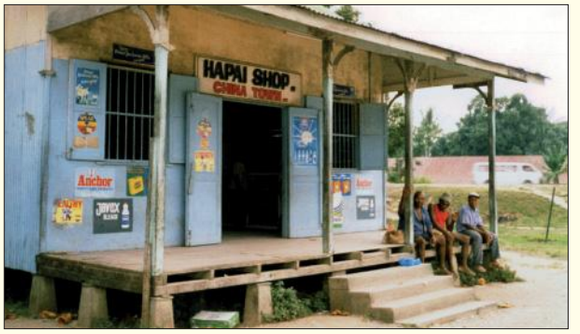

Figure 2.8 Old shop in China Town—this and many other shops were burnt down in riots in 2007.

I went to school in Brisbane and when I finished in 1957 I came back and my father taught me carpentry. I learnt to build ships, furniture and buildings and to do electrical wiring. A European who owned a big company in Honiara called Mendana Enterprises as well as Ilu Farm asked me to work for him and I became a manager looking after electrical contracting and other things. I also ran the Point Cruz movies and a shop. I was a one-man machine.

In 1972 I resigned from my work to set up a business selling electrical goods and musical instruments. At Independence in 1978 I wrote a song in Pijin called 'Independence One Gear', which became very popular. I ran a wholesale and retail business for a while, but then I started a shop selling fish hooks and fishing gear, so I became 'Mr Hook'.

I have one brother living in China who I have never seen; one in Australia; and two sisters in Hong Kong. One brother died in Makira during the war and another one owns the YTL store in China Town.

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Our Chinese culture is different in many ways from local Solomon Islands cultures. For example the kinds of food, religion and customs are different.

The main Chinese foods are rice, noodles, meat and chicken. As well as spoons, we use chop sticks for eating—two straight pieces of wood which we push together to pick up the food.

Most Chinese in Solomon Islands are Christians but some follow different religions such as Buddhism. There is a Buddhist temple in China Town.

Some of our customs are also different from Solomon Islands customs. One custom is that we are not allowed to point a broom directly towards people. We also have a superstition where we are not allowed to borrow money in the morning part of the day. The Chinese also celebrate their Chinese New Year later than the Solomon Islands New Year.
I am married to a Solomon Islander from the Western Province and we have four children who are real Solomon Islanders. I am very happy to stay here.

3 Ethnic groups in Solomon Islands

There are many small ethnic groups in Solomon Islands, each with their own language, culture and customs. However, all these people belong to four major ethnic groups. Each major group is related to people outside the Solomon Islands. The map in Figure 2.9 shows three of these ethnic groups in the Pacific.

1 Melanesians are the largest ethnic group and were the first people to migrate here. Most of the people of Papua New Guinea, Vanuatu, New Caledonia and Fiji are also Melanesians. The ending *nesian* means 'people of the islands' and *mela* means 'black', so Melanesians are 'the black people of the islands'.

2 Polynesians are the second largest group. The people of Renbel arrived only about 500 years ago. Some have been here longer. They are related to people who live all over the Pacific, including Samoa, Tonga, Fiji,

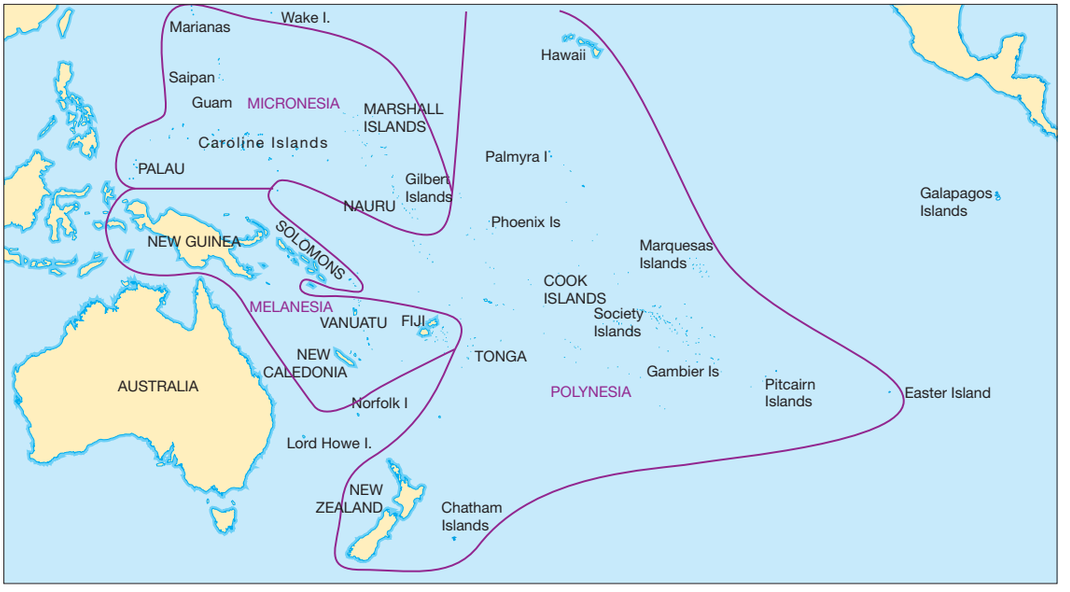

Figure 2.9 Ethnic groups of Melanesia, Polynesia and Micronesia

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Tahiti and New Zealand. The Polynesian Islands in Solomon Islands are often called 'outliers', partly because they are on the edge of Solomon Islands and partly because they are separated from the other Polynesian areas. The word *poly* means 'many', so Polynesians are 'the people of many islands'.

3 Micronesians include the Gilbertese. The word *micro* means 'small', so the Micronesians are 'the people of the small islands'. This is because they live on many very small islands, mainly to the north of Solomon Islands. These include Nauru, Guam, the Marshall Islands and Kiribati.

Although there are differences between these three groups, there are also many similarities. All these people live in small villages, build leaf houses and eat similar food, especially fish and coconuts. They also have similar values, such as sharing everything with others, having large extended families who look after each other, and having respect for other people—especially older people. That is why, when they go to other parts of the world—such as Australia, Europe or America—all Pacific Islanders usually mix together. In New Zealand some young people nowadays simply call themselves **Nesians**, because they say there is no real difference between the three groups.

Perhaps the Nesians are right. These names for the three groups were not started by Pacific Islanders themselves but by a Frenchman, and were then copied by other Europeans before being used by Pacific Islanders. So perhaps we should not use them but think of ourselves as Solomon Islanders or Pacific Islanders.

The other ethnic group in Solomon Islands, the Chinese, are also related to a bigger ethnic group, but not in the Pacific. Chinese come from China, but not all Chinese are the same. In China there are many groups who speak different forms of the Chinese language. Many Chinese live in other parts of Asia, such as Vietnam, Malaysia and Singapore.

Figure 2.10 There are even Nesian pop groups. This CD was released by a Nesian group in New Zealand.

Figure 2.11 Chinese New Year is celebrated by many ethnic groups in Solomon Islands.

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Europeans are another ethnic group in Solomon Islands. They include many Australians, New Zealanders and Americans who originally came from Europe. Most Europeans who have come here, however, are not migrants but people who came to do a particular job and then went back home. A few Europeans, especially the early traders, settled here and married Solomon Islanders, but their children were brought up like other Solomon Islanders and they are now Melanesians, rather than Europeans.

Marriage is affecting all the ethnic groups in Solomon Islands. As people marry others from another ethnic group they become part of two groups. Their children may marry people from other groups again, so many people now call themselves Solomon Islanders and do not think of themselves as part of one ethnic group. Perhaps one day all Solomon Islanders will become like this and forget that they are from different groups. They will just become Solomon Islanders.

What's in a name?

Does it matter what people call us? Sometimes it doesn't. But names can be important. Sometimes, when we are told someone comes from a certain group, we immediately think about them in a certain way, even if we have not met them.

This is called 'pre judging' or **prejudice** and it can be dangerous.

We often have special names or **nicknames** for groups of people. For instance, we call people from Isabel 'gema' and people from Gela 'kula'.

Activity 5

1 Write down the nicknames you use for each of the following: Guadalcanal people; Western Province people; Reef Islanders; Renbel people; Chinese; Europeans.

2 Quickly write down any words which come into your mind to describe each of these groups. Try to be honest about it.

3 Your teacher will write lists of your words on the board under each group.

Look at these. Are there any groups where many of the words are bad words?

Are there any where most of the words are good?

4 Do all people from those groups have the characteristics mentioned?

Sometimes a nickname is simply a friendly way of referring to people, for example, 'gema'. Sometimes, however, it shows that we dislike the people. Whenever we think of the person we think bad things about them. When a nickname is used like this, the people we are talking about don't like it. For instance, in the United States many people have ancestors from Africa. These people prefer to be called African Americans, but in the past they were called names which had negative meanings, showing the prejudice that white people felt towards them.

Activity 6

In groups discuss whether there are any groups of people you are **prejudiced** against. If so, why? Do you think all the people in that group are bad people?

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Figure 2.12 In 2009 an African American, Barak Obama, was elected president of the United States of America. It was an important moment for many Americans, because he became the first African American president.

Prejudice can spoil people's relationships with each other. This is especially important in Solomon Islands where we have many different ethnic groups. If we are prejudiced against a particular group it means we judge them without thinking about what they actually do. We may meet some people from a particular group who are proud or dishonest or who always want to fight, but that does not mean that everyone from that group is the same.

Prejudice was one problem which led to the period of tension during 1999–2003, when there were problems between the people of Guadalcanal and the people of Malaita. Some people began to say that all people of Guadalcanal or all people of Malaita were bad. People were even killed simply because they were from a certain ethnic group.

The only way to avoid this problem is to think of everyone as an individual, to meet them personally and then judge them. If you do that, you will probably find that there are good and bad people in every group. One of the things taught by religions like Christianity is that we are all equal in the eyes of God, so we should never judge a person by where they come from.

Language groups

One reason why we divide people into ethnic groups is because they speak different languages. The language identifies who you are. That is why, in Pijin, all the people who speak the same language are called *wantoks* or 'one talks'. In some places the same language is spoken in different ways but people can still understand each other. Some examples are North and South Vella la Vella; Rennell and Bellona; East and West Kwaio; Tikopia and Anuta. These are called dialects.

However, even languages where people cannot understand each other are not always very different.

Activity 7

1 If possible, get into groups of people who speak different languages. Say or write down the words in your language for 'one, two, three, four and five'.

2 Compare the words in different languages. Are any of them similar? If so, perhaps the languages are related to each other.

3 Look at the words in some Solomon Islands languages in Table 2.3. Are any of them similar to each other? Are these words similar to the words in your group's languages? If they are, what does this suggest about most Solomon Islands languages?

You can see from Table 2.3 that many Solomon Islands languages are related to each other. This is because they are Austronesian languages. As you know from the last chapter,

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Province	Language	Words						
	English	father	eye	fish	house	fruit	hear	bird
Western	Roviana	tamana	matana	igana	vetu	vuana	lemono	kurukuru
Guadalcanal	Llongu	mama	mata	iga	luma	londona	rongonia	manu
Malaita	‘Are‘are	amana	mana	marika	nima	roto	rono	manu
Makira	Arosi	amana	mana	iga	ruma	hua	rondo	manu
Renbel	Bellona	tamana	mata	ika	hange	hua	hakarongo	manu
Temotu	Reef	tumwa	nimbe	si	nuwopwa	nwa	vingo	nde kuluo
Central Is.	Savosavo	mau	nito	mi	tuvi	aiyu	eneli	kosu

Table 2.3 Words in different Solomon Islands languages

most Solomon Islanders originally migrated here from other places and most of them were Austronesians. That is why most people still speak Austronesian languages. Only Reef and Savosavo languages have totally different words, because they are not Austronesian.

But what suggests that people migrated from South-East Asia? If you look at some of the languages of South-East Asia, they are also similar to Solomon Islands languages. Most Solomon Islands languages are also similar to other languages in the Pacific Islands from Hawai’i to Samoa and Kiribati and even the Maori of New Zealand.

Look at the same words in some other languages, in Table 2.4.

Many of these languages also have similar words to the languages of Solomon Islands. They are also similar in other ways.

If we want to compare languages we can look at different parts of the languages.

1 **Vocabulary** is the words used in the language and what they mean, as shown in Table 2.4.

Country	Language	Words						
England	English	father	eye	fish	house	fruit	hear	bird
PNG	Motu	tamana	mata	gwarume	ruma	hua hua	kamonai	manu
Malaysia	Malay	bapak	mata	ikan	rumah	buah	mendengar	burung
Phillipines	Tagalog	ama	mata	isdaq	bahay	bunga	making	ibon
Tonga	Tongan	tamale	mata	ika	fale	fua	fenongo	manu
New Zealand	Maori	matua	mata	ika	whare	hua	rongo	manu
Kiribati	Kiribati	tama	mata	ika	uma	uaa	ongo	man

Table 2.4 Words from languages in South-East Asia

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2 **Pronunciation** is the way people say the words.

3 **Grammar** means the rules by which the words are put together into sentences.

Many Solomon Islands languages and languages in South-East Asia and the Pacific Islands have some similar words or vocabulary. But they are also similar in two other ways: the sounds used in pronouncing the words and the grammar or rules by which words are put together into sentences.

Pronunciation

Many of the languages in Table 2.4 also use similar sounds and have similar rules about the way sounds are put together. This makes it difficult for some Solomon Islanders to pronounce some words in English, which uses different sounds and has different rules about putting sounds together.

For instance, many Solomon Islands languages only have five vowel sounds. You learn these in primary school: a, e, i, o, u. The way these are pronounced can be heard by pronouncing some of the words in the lists:

- a as in *mama*
- e as in *kohale*
- i as in *Arosi*
- o as in *honu*
- u as in *nunu*.

English, and some Solomon Islands languages, have many more vowel sounds. This makes it difficult for some Solomon Islanders to pronounce some English words correctly.

- Some people pronounce *let* like *late*.
- Some people pronounce *live* like *leave*.
- Some people pronounce *match* like *march*.

Many Solomon Islands languages always put a consonant between two vowels and end words with a vowel. English and some Solomon Islands languages put two consonants together in some words and end the word with a consonant, for example, *prison*. Some Solomon Islanders find this difficult and follow the rules of their own language and say *peresoni*.

Solomon Islands and other Austronesian languages may be related to each other because they use similar sounds and rules about sounds.

Grammar

Possessives are words in a language which show who owns something. Five possessives in English are: *my*, *your*, *his*, *her* and *its*.

These can be used with any objects, for example, my mother, your mother, his mother, its mother, my fish, your land, her fish, its fish. The word showing who or what 'owns' the thing (the possessive) always comes before the noun.

Fijian has a much more complicated system of showing ownership than English. Fijians have three words: *qu* means my; *mu* means your; and *na* means his or her or its.

If Fijians talk about close relatives or parts of the body they put the possessive *after* the noun and join it to the noun to form one word (see Table 2.5).

Mother is *tina*	Face is *mata*
My mother: *tinaqu*	My face: *mataqu*
Your mother: *tinamu*	Your face: *matamu*
His/Her/Its mother: *tinana*	His/Her/Its face: *matana*

Table 2.5 Possession in Fijian

If they talk about other types of things such as food or personal property it is more complicated.

1 They always start with the word *na*, which means 'the'.

2 Then they show what type of noun it is, for example, *ke* for food; *no* for personal property.

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3 Then they add the possessive to this, for example, *kequ*; *kemu*; *noqu*; *nona*.

4 Finally they add the noun as a separate word, for example, *ika* meaning fish; *vanua* meaning place or land.

So:

My fish: *na kequ ika*	My place: *na noqu vanua*
Your fish: *na kemu ika*	Your place: *na nomu vanua*
Its fish: *na kena ika*	Her place: *na nona vanua*

Table 2.6 Possession in Fijian

Activity 8

1 Think of your own language. Think of the way you would say each of the phrases in Tables 2.5 and 2.6 in your language. Write them down if it helps you.

2 Is your language similar to Fijian in the way the words are put together? Does it follow some of the four rules of Fijian? Is it similar to English in any way?

Many of you will probably find that your language follows rules similar to Fijian and different from English. Linguists tell us that most Solomon Islands and other Austronesian languages follow rules like those of Fijian.

Therefore, we can say that nearly all Solomon Islands languages, including Polynesian languages and even Gilbertese, are similar to each other. Linguists, who study languages, tell us that all Melanesian, Polynesian and Micronesian languages are similar to each other. They are also similar to the main language spoken in Malaysia and Indonesia, many languages of the Phillipines and even languages found in Taiwan, near China, and Madagascar, a big island near Africa.

In the same way, nearly all European languages are similar to English and there are many other languages similar to Chinese. Because of this, linguists divide languages into groups of languages which are similar to each other. These are called **language families**.

Nearly all the languages of the Pacific, Indonesia, Malaysia and parts of Taiwan and Madagascar form the Austronesian languages.

Figure 2.13 Where Austronesian languages are found. Note that Madagascar is actually far away to the west, near Africa, not where it is shown on the map.

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You will remember that the Austronesian people migrated from South-East Asia to the Pacific and they brought this type of language with them. A few sailed the other way and ended up in Madagascar.

Non-Austronesian languages

Look back at the list of words in Table 2.3. Notice that Reef and Savosavo are Solomon Islands languages but the words are quite different from all the other languages. This is because they are non-Austronesian, or partly non-Austronesian, languages. Table 2.7 lists these. Their vocabulary, sounds and rules are quite different from other Solomon Islands languages.

Language	Spoken in
Nangu	Santa Cruz
Reef (Aiwo)	Reef Islands
Savosavo	Savo
Lavukaleve	Russell Islands
Mbaniata	Rendova
Mbilua	Vella Lavella

Table 2.7 Non-Austronesian or partly non-Austronesian languages spoken in Solomon Islands

Figure 2.14 Mr Joseph Ware comes from Malapu Village in the Reef Islands of Temotu Province. His language is at least partly non-Austronesian.

From the last chapter you will remember that the first people to migrate to this area were non-Austronesians. The Austronesians came later. It looks as if people from the areas listed in Table 2.7 may be related to the original non-Austronesian people who came to Solomon Islands. In some places—like Santa Cruz and Reef Islands—they probably mixed with the Austronesians who came later, as their languages seem to be a mixture of non-Austronesian and Austronesian.

What about Pijin?

Because we have so many different languages we now use Pijin to communicate with each other. Where did this come from?

In the nineteenth century, many Solomon Islanders were taken to work in the sugar cane plantations of Queensland, Fiji and Samoa and to work on European ships. At first, some were taken by force but later many went because they wanted to see new places and earn money. They were not slaves, as some people say, because, although they were sometimes treated badly, they were paid wages, they were not 'owned' by the people they worked for, and at the end of their contract they were brought home with many goods.

They came from many different language groups. Some also came from Papua New Guinea and Vanuatu so they could not talk to each other. They did not know English, so they could not talk to the Europeans either. They began to listen to English and try to understand and speak it, and the Europeans tried to communicate with them in English.

Slowly they learned English, but it was not the same English that the Europeans spoke. The Europeans and the Islanders developed a simpler form of English which was later called Pijin.

As we have seen, languages have three parts: vocabulary (words), pronunciation

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Figure 2.15 Many Islanders worked on plantations in Australia.

and grammar. Pijin developed with English vocabulary but Melanesian pronunciation and grammar. In some cases, the meanings of the words also changed.

The Islanders began to use the English words they heard, so the Pijin vocabulary is based on English. But the Islanders pronounced the words in a Melanesian way. They heard the word 'ship', but in their languages there was no sound like 'sh' and 'i' is always pronounced like 'ee' in 'sheep', and a word usually ends in a vowel, so in Pijin ship became *sipi*. They heard the word 'church', but in their languages there was no sound like 'ch' or 'ur' so instead of 'church' they said *sios*, and later that is how it came to be spelt. So we can say the rules of pronunciation in Pijin follow Melanesian languages.

In English there is one word 'we', meaning 'you and I' or 'all of us'. But in Melanesian languages there are separate words for two people, a group including the person speaking and a group not including the person speaking. So the Islanders followed the rules of Melanesian languages and invented the words: *iumi tufala*, *iumi* and *mifala*. There are no words like this in English. So Pijin follows the rules or grammar of Melanesian languages.

Words even changed their meaning slightly. In English, a container holding tins like Taiyo is called a box; in Pijin it is a case or *keis*. In Pijin the container you buy to put your clothes and other things in is called a box or *bokis*; in English it is a case. Find out the meaning in Pijin and English of basket. Find out any words which have a different meaning in English and Pijin.

Activity 9

1 In groups, imagine you are the first Solomon Islanders to land in Queensland. Some of you act as Solomon Islanders and some as plantation owners. Act out a story to show how you try to communicate with the plantation owners.

2 When the Solomon Islanders returned from Queensland and elsewhere they continued to use Pijin in Solomon Islands. Suggest reasons for this.

3 What are the advantages of having Pijin in Solomon Islands? How would we communicate if we did not have it?

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4 Unity in diversity

Pijin is one thing which unites all Solomon Islanders, but there are many others.

Activity 10

Work in groups. Read the following description of what usually happens when Europeans visit someone else's house.

The people who are visiting (the visitors) knock on the door. The person inside (the host) opens it and greets the visitors. The men shake hands, the women are usually kissed on the cheek. The host tells them to come in. The visitors enter, with the women entering before the men. They continue to stand. The host asks them to sit down. They sit down. The host asks them if there is anything he or she can do for them. The visitors say no—they just called to say 'hello'. The host asks them if they would like a cup of tea or anything to eat. The visitors say 'Yes', they would like a cup of tea but nothing to eat. The host makes some tea and brings it with some sugar and a spoon and asks if the visitors would like some sugar. The visitors decide if they want any sugar and help themselves. Then they start talking.

1 One group acts out people visiting a European house following the story.

   Another group acts out what usually happens when a Solomon Islander visits the house of another Solomon Islander in a village.

2 Do you all agree with what the second group did?

3 What are the main differences between the two ways of greeting visitors and entering houses? Is one way of entering a house 'correct' and another way wrong?

4 All people have different ways of doing things. Can we say that one way of doing things is right and the other way is wrong?

Sometimes we think that the way we do things is right and everyone else is wrong. But if we live with other groups we must recognise that each group has different ways of doing things and we must respect these ways.

A custom like how to enter a house, however, is similar throughout Solomon Islands in nearly all ethnic groups. There are many customs, ways of doing things and beliefs or values which nearly all Solomon Islanders share. Many of these are different from those of Europeans or other groups. It is the similarities, the things we share, that help to join us together and make us one country, different from other countries.

Activity 11

The following statements describe Solomon Islands cultures and ways of life and European culture and ways of life.

Copy the table headings and write the numbered sentences in the correct column.

Solomon Islands customs and culture	European customs and culture

1 People are part of a big extended family.

2 People usually only know their close relatives.

3 Wantoks are very important and must be helped.

4 The idea of wantoks does not exist.

5 Things are owned by individuals and are not often shared.

6 People always share things with others.

7 Houses are kept open most of the time.

8 Houses have doors and strong walls because it is cold.

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9 Most people grow a lot of their own food.

10 People rely on buying food in shops and markets.

11 Most people live in cities.

12 Most people live in villages.

13 Nearly all people own some land.

14 Very few people own any land.

15 People buy houses from companies which build them.

16 Most people build their own houses.

17 Old people live on their own or live in special places for old people.

18 Old people live with their relatives.

19 People nearly always stay in the place they were born or frequently go back to it.

20 Many people move around to work in different places and don't go back to the place where they were born.

21 Most people go to church sometimes and say they are Christians.

22 Only a few people go to church and many people are not Christians.

Look at your list of descriptions of Solomon Islanders and their culture. These common characteristics, shared by us all, give us '**unity** in **diversity**'. This means that, although we are diverse (we have many different languages, cultures and customs) we are also united because there are many things we all have in common. The things we share give us our **national identity**. When Archbishop Desmond Tutu came here from South Africa in 2009, he said we should celebrate our diversity. His country also has many different ethnic groups and they call themselves the rainbow nation. A rainbow has many colours and that is what makes it beautiful, so having many different groups can make a country stronger and more interesting than if all people were the same. To celebrate our diversity means to look for the good things in each group and to be happy that people are different from us. We should not expect everyone to be the same as us.

Activity 12

1 In groups, discuss and list the advantages and problems of having many different ethnic groups in Solomon Islands.

2 Suggest ways we can overcome the difficulties caused by having many different ethnic groups.

3 Suggest ways you can celebrate our diversity in your school by encouraging different groups to mix together and learn from each other's cultures.

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Glossary

Aboriginals the people who originally lived in a place, especially the people who lived in Australia before Europeans arrived

diversity different kinds of something

ethnic group a group of people who are similar to each other in culture, way of life, ideas and often language

grammar the rules by which the words are put together in a particular language

language families a group of languages which are related because they have similar vocabulary, sounds and grammar

national identity a feeling that all people of a nation or country share things together and are related to each other and different from others

Nesians word being used by young people in New Zealand and elsewhere to describe all Pacific Islands people

nicknames names used for groups of people or individuals which are not their real names

possessives words or parts of words to show who possesses or owns something

prejudice judging someone by where they come from, their colour, religion or other features before actually meeting or getting to know the individual

prejudiced someone who uses prejudice to judge people

pronunciation the way words are pronounced

unity a feeling of being joined together

vocabulary the words used in a particular language

wantoks people who speak the same language as each other. Used mainly in Melanesia

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Chapter 3

Family and Community Leadership

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Activity 1

1 Who is the **leader** in your family?

2 Who makes decisions about important things affecting your family?

3 What types of decisions does your father make in your family?

4 What types of decisions does your mother make?

5 Do you have a say in family discussions or decision making?

6 Are you the eldest child in your family? Is the eldest child or the eldest person more important than the others?

7 Who usually makes decisions in your community or village?

1 Types of leaders

Here are some types of leadership that you might find in your family, community or village.

- **Authoritative** leadership—when a strong leader uses his or her status by issuing orders which must be obeyed by the family or community
- **Persuasive** leadership—leading by persuading and the use of rewards or punishment
- **Democratic** leadership—when decisions are made in discussion with the whole family or community

Figure 3.1 Authoritative leadership

Figure 3.2 Persuasive leadership

Figure 3.3 Democratic leadership

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Activity 2

Family leadership

1 Choose the type of leadership that is common in your family and explain the reason for your choice by giving examples.

2 What type of leadership do you think would work best in your family? Explain your reasons.

Community leadership

3 Which of the three types of leadership listed on page 44 do you think is common in your community? Explain.

4 What are the advantages and disadvantages of these types of leadership?

Leaders in your school

In your school you probably have two kinds of leaders:

- **Formal leaders** have an official position in the school. Some, such as a principal, may be **appointed** by someone outside the school. Others may be appointed by the staff or elected by the students, like a school captain or prefect.
- **Informal leaders** are respected or listened to because of the kind of people they are, even though they have no official position. They may be respected because they are clever, good at sports or very talkative and interesting to listen to.

Figure 3.4 The school captains are formal leaders.

Activity 3

1 Name three formal leaders in your school and state their positions.

2 Name three informal leaders in your school and say what makes people respect them or listen to them.

3 Who do the students follow most: the formal or the informal leaders? Give reasons.

Words or concepts to know

There are a number of words you should know to help you to understand how people lead others.

- **Authority** refers to the **power** given to and carried out by a person who has a recognised position within a community, like a **chief**, principal, premier or policeman. A person in authority has the right to tell other people what to do. For instance, the police have the authority to make sure you obey the law.

Activity 4

Name people who have authority in:

1 your family
2 your school
3 your community
4 the country.

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- **Leadership** refers to the position of a leader. A leader is a person who controls or is in charge of other people or who other people follow. A person may be a leader because they have authority, **influence** or respect, or sometimes because they force people to obey them.
- **Influence** means that a person has power to change other people's behaviour to follow that person and do what they say
- **Respect** means to have a good opinion about someone because of their status or position or their behaviour. People may have influence or respect because of the position they hold, like a chief. Others have influence or respect even if they do not have any official position in the community. People listen to them and follow them, but they are not legally or formally recognised. For instance, a successful business person or a very good sports person may have a lot of influence or respect in the village but they have no official position like a chief.

Activity 5

Name people who have respect and influence in:

1 your family
2 your school
3 your community
4 the country.

- **Power** is the ability to persuade or tell others what they should do. Power may come either from having authority or from having influence and being respected. All leaders have power. Sometimes, power may also come from forcing people to do things.

Figure 3.5 Here are some examples of leaders. A bishop, a Premier, women leaders, a Judge.

Activity 6

Think of your own local community and discuss the following.

1 Name three formal leaders who have authority because of their official positions.
2 Name three informal leaders who people respect and follow but who have no official position.
3 Who are the two most respected leaders in the community? Are they formal or informal leaders? What makes them respected?

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2 Types of authority, influence and respect in decision making

In different families the people who have authority and respect are different, and make decisions in different ways.

The following examples show four different types of authority, respect and ways of making decisions.

Type 1: An old British family

In rich British families a hundred years ago, like the family shown in Figure 3.6, the father had complete control. He made all the important decisions and the mother and children were expected to show him respect. His children called him 'sir' or 'father' but never used his name. Children showed respect by standing up, bowing or sometimes kneeling down when their father was present. An old British saying is 'children should be seen but not heard'. The mother was expected to stay at home and do all the work of looking after the house and children, while the father went out to work to earn money. The father expected his wife and other members of the family or servants to cook his food, wash his clothes and look after him and he would never help in the house. He often beat his children if they did wrong.

Figure 3.6 A British family from about a hundred years ago

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Activity 7

1 Who had authority in the British family? Did they also have respect? Explain your answer.

2 What do the clothes of this family tell you about the climate? How do the clothes tell you that the family was rich?

3 Which is the father and how does he look different from his sons?

4 **a** Read the story again. Choose three people—one to act the father and two to act as his children.

Imagine that the children are coming to ask their father for money to buy new clothes. Act out the story, with the children asking and the father replying. Include all the ways that the father shows his authority and how the children show respect for their father.

b Think of how your father talks to you and how you talk to your father; how you and he stand or sit when he is talking to you; whether he looks at you or you look at him when you talk to him; how you move if you walk in front of him; how you would give something to him; where you would walk if you walk around with him; who goes through a door first, etc.

Now choose some members of your class to show how their father uses authority and how children traditionally show respect for their father.

c Write down a list of the ways that (i) fathers show their authority, and (ii) children show respect for their father in your area.

Type 2: A Tikopian family

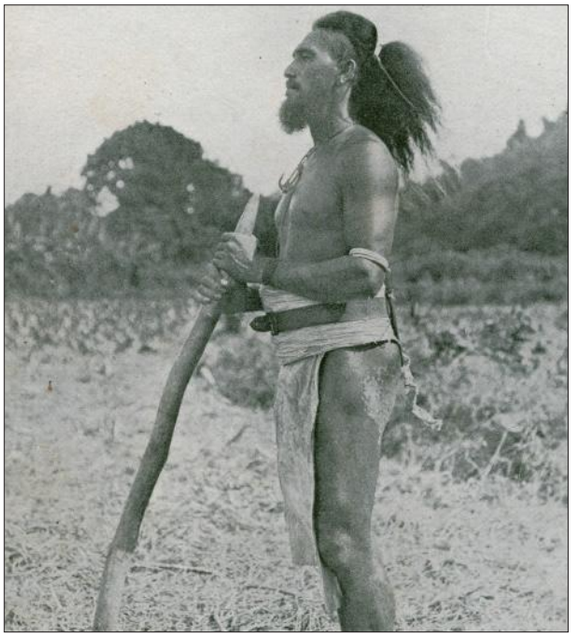

Figure 3.7 Pae Fenuatara, 1928

Figure 3.7 shows Pae Fenuatara in Tikopia in 1928. Pae Fenuatara was the head of his family. He had great authority and his children showed him great respect. They were not allowed to use his name, to touch his head or his bedding, or to go near the area where he slept. They had to crawl in the house when he was present.

But he was friendly with them, joked and played with them and often touched and hugged them. Although he had the power to decide things, decisions were often taken by free discussion with his wife and children in a kind of family meeting. He respected the ideas of his eldest son and gradually handed decision making to him as he got older.

Activity 8

List two similarities and two differences between Pae Fenuatara and the head of the old British family.

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Type 3: A family in Isabel

Sometimes people who are not the head of a family are included in decision making for special reasons.

Susan Riumana comes from a family in Isabel. She was the first in her family to be educated to a higher level. She did very well at school, became a prefect and school captain, got a scholarship to go to university and is now a qualified lawyer. Her father did not go to school and cannot read or write. Her mother only went to primary school and none of her brothers or sisters went further than Form 3.

The family lives in an area where there are valuable rocks containing nickel. A number of overseas companies came to ask for the rights to find where the nickel is and to mine it if they find it. The provincial and national governments both had meetings with the land owners to discuss this. Susan's parents asked her to attend these meetings and gave her the power to make decisions on their behalf.

Activity 9

1 Why do you think Susan's parents asked her to attend the meetings in their place?

2 Who has authority to make decisions about the family land?

3 Susan was given power to make those decisions. Who gave her that power?

Type 4: A modern New Zealand family

Figure 3.8 Mr Grenfell and his family

Mr Grenfell, from New Zealand, described another way of making decisions.

'We had fortnightly "**family council**" meetings, with my wife and me and our five children, aged 13, 11, 9, 7 and 15 months. Anyone was allowed to suggest anything or to express any opinion about the family. Everyone else had to listen and then we took a decision by voting. In this way we made the following decisions:

1 Everyone must eat with a knife and fork.

2 Everyone must sit at the table until all have finished eating.

3 All dishes are to be washed immediately after each meal.

4 Mum and Dad should get up earlier to prepare breakfast.

5 The children should be given more pocket money as they grow older.

6 The young baby should be baptised.'

In the family, work in the house is also shared between all the family, including the father.

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Activity 10

1 List any ways in which the decision making in Mr Grenfell's family is similar to or different from your own family.

2 Did Mr Grenfell have authority in his family? Do you think his family respected him? Give reasons.

Activity 11

Copy the table below into your exercise book.

Family	Who makes decisions	Leadership style
Old British family	?	?
Tikopian family	?	?
Modern New Zealand family	?	?
Your own family	?	?

1 From what you have just read, complete the second column of the table to show who makes the important decisions in the family. Choose the correct answers from this list:
The mother
The father
The eldest person in the family
The eldest man in the family
The whole family
One of the children

2 Look back at the explanations of types of leaders on page 44 and discuss which (authoritative, persuasive, democratic) best fits each family. Write it in the last column.

Activity 12

1 In many families, different people or groups of people make decisions about different things. Which person or group in your family would make the following decisions?
- **a** Whether to build a new house
- **b** Whether to make a new garden
- **c** What to eat for dinner
- **d** Whether to take a sick child to the doctor
- **e** Whether a child should be sent to school
- **f** How to punish a child who has stolen coconuts from a neighbour's trees
- **g** Who a child should marry
- **h** Whether to buy some cooking pots
- **i** Whether to go to Honiara to live and work
- **j** Whether you or your brother or sister should go to church on Sunday

2 Write a story describing your family, like the stories of the different types of families in this section. Say who makes decisions, who has authority, who people respect, how decisions are made, who works in the house or garden, who looks after the money, what the main jobs of the children are, and so on.

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3 Changes in authority and decision making

Around the world changes are happening in families. In Britain today most families are more like Type 4 than Type 1. In many places, as children become educated, they begin to have less respect for their parents. This has been described by Joseph Lijembe of the Abaluyia **tribe** in Kenya:

Changes in the Abaluyia tribe

As children spend so much time at school they grow up without much close contact with their father. They learn new ideas and skills which their parents do not know, so they sometimes think that they are better than their father. Education makes them able to get a job, earn money and they become independent of their parents instead of relying on them for food and a home. They learn new customs and ways of thinking by mixing with other children. They begin questioning and disagreeing with their father's beliefs. They no longer obey their father and do not respect him or accept his punishment. The father's authority over his children slowly grows less.

Figure 3.9 A child in Africa learns a skill from her parents in a traditional way.

Figure 3.10 Children in Africa learn from a teacher in school.

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The two photographs (Figures 3.9 and 3.10) show changes in authority in East Africa. In the past children learnt skills from their parents. The girl is learning to crush maize. She is learning from her mother, so she is also learning to respect her mother.

The boys and girls are in school learning from a teacher. This means they may not learn to respect their parents so much.

In the following story a man from Malaita, Gabriel Gwaliasi, complained about this situation. Gabriel was an old man who died in the 1990s.

Gabriel's story

Before, our fathers taught us well. They taught us to work, not wander around, not to play around with other boys. But this time, when children know so much of everything, they no longer listen to their father. Even if you teach children well they will go to school and other places and see other children whose fathers have not taught them so well and they would follow them instead. Now children go and play football somewhere and mix with others and swear and do wrong things. If some people want to steal things, others will copy them. That's why I say this time things are wrong.

Figure 3.11 Gabriel Gwaliasi

Activity 13

1 List reasons why children in some places no longer respect their parents as much as they used to.

2 Discuss in groups whether the changes described here are also happening in your families.

3 In groups, make up a story and act out a role play to show a conflict between young people and their parents.

Authority, respect and decision making in larger communities such as villages, churches, schools or the whole country are very similar to that in families.

In the next two chapters you will learn about two types of **traditional leadership** and how traditional leadership is changing.

You will find out that leadership in communities is very similar to leadership in families and is also changing in very similar ways.

Activity 14

From all the examples you have read so far, and from your own experience of leaders, copy and fill in the following table.

Characteristics of leaders	Features of good leaders	Features of bad leaders

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CASE STUDY

Leadership in Gatokae, Marovo, Western Province

One example of leadership in a community is Gatokae Island in Marovo Lagoon, Western Province. Here, like most communities today, there are both formal and informal leaders.

It has a population of about 3090 people and 210 households. The people from this community live a partly subsistence lifestyle. They grow crops on their own tribal land, catch fish and collect shells from their reefs for their family's consumption.

Formal leaders

1 Jerry Tekopo—Tribal chief

Jerry Tekopo is one of the formal leaders in the Gatokae community. He is a tribal chief for the Kogungaloso tribe. He is a hereditary chief from the chiefly family.

His main roles include making sure that there are no arguments or disagreements among the members of the community. He also tries to be a good role model for his tribe. He makes sure that individual members in the community have access to basic services such as water supply, clinics, schools and recreational areas like sports fields. He is also the custodian who looks after his tribe's land.

He carries out his work as a leader mostly through formal meetings with community members where he discusses things concerning the community. However, at times he makes his own decisions. Some of his decisions and ideas cause disagreements between him and tribal members, but people carry them out because he is chief.

Activity 15

1 Read the accounts of leadership in Gatokae. Summarise these in a table like the one below. In the last column, write if these leaders are authoritative, persuasive or democratic.

2 Try to find out about leaders in your own home community. Do you have similar kinds of leaders or different kinds?

Name	Formal/ Informal	Title	How they are chosen	Main roles or jobs	Methods of leadership	Type of leadership

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2 Pastor Edrin Timmie—District pastor

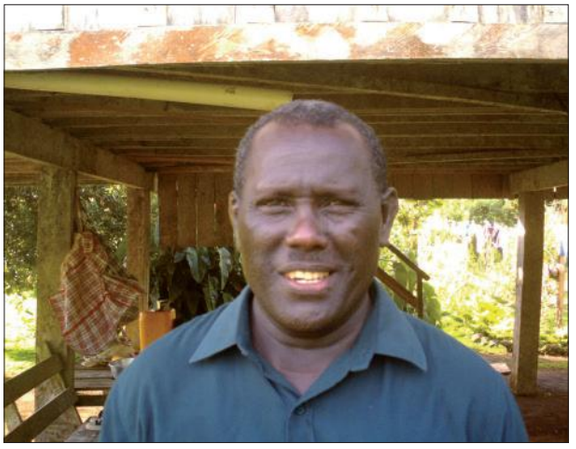

Figure 3.12 Pastor Edrin Timmie

Pastor Edrin Timmie is another formal leader. He is the district Pastor for the Seventh Day Adventist (SDA) Mission. He was appointed to that leadership position by the church to serve the SDA church members in that community.

His roles and responsibilities include looking after all things connected with the church and church members.

He carries out his role through formal meetings—including church board meetings—for officers who work for the church, and local business meetings for church members.

He holds these meetings to consult people on church matters concerning members. Decisions are usually made through voting and accepting the decision of the majority who support the idea.

3 Mr Udikolo Pelobule—Secondary school principal

Mr Udikolo Pelobule is another type of formal leader. He is the secondary school principal for Bekabeka Community High School, providing primary and secondary education for students from Gatokae and the surrounding area.

He was appointed by the Western Province Education Authority.

He looks after the school administration and makes sure students and teachers attend classes. He looks after the school money and buys what the school needs, and makes sure students follow the school rules.

The principal's work as a leader involves passing on orders from the Authority, as well as having formal meetings with staff to decide the smooth operation of the school. Decisions are usually made by voting. He then ensures that those decisions are carried out by the staff and students of the school.

There are very rare instances where the principal makes his own decisions because a specific case is urgent. When this happens, he discusses it later with his staff members to explain it to them.

4 Mrs Melva Luteni—Dorcas federation leader

Mrs Melva Luteni is a formal leader. She is a federation leader for the Dorcas Society members of the Gatokae community. She was appointed to her leadership position in that community. The Dorcas Society aims to help the poorer members of the community.

Her roles include coordinating the work of every Dorcas Society group in the Gatokae District.

She holds meetings with various Dorcas Society groups and provides support on how to achieve their group aims.

Decisions are often made during meetings with women members. These meetings are held every three months with each society, and there are other meetings with the members.

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Informal leaders

1 Mr Ronald Simeon—Sports leader

Mr Ronald Simeon is a soccer team manager. He is an informal leader. He was chosen by the sports members of the community.

He organises the Penjuku soccer teams to participate in competitions and tournaments. He makes sure that the players are disciplined at all times during tournaments. He organises training sessions for the players before tournaments, and he looks after the equipment and finds ways of securing funds to meet expenses.

He carries out his work with boys based on decisions made through club meetings. Sometimes he holds informal meetings to discuss how to carry out sporting matters. Formal meetings are often held where members of the club have to attend. Decisions are made during these meetings. However, the team manager usually makes his own decisions if members need to be trained.

Figure 3.13 Mr Ronald Simeon

2 Mr Ivan Ghemu—Businessman

Mr Ivan Ghemu does not hold an official leadership position in the community. He is regarded as an informal leader in the community. He is a businessman, and works as a managing director of a company called BIP Computers, which is based in Honiara. As a managing director he manages the day-to-day running of his business, controls the money and negotiates business opportunities.

People respect him when he goes home because he is a successful businessman and he is quite wealthy compared to other people in the village.

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Glossary

appointed chosen for a position or a job because of their qualifications or ability, without going through the process of election

authoritative being the decision maker

authority the power to make decisions and give orders

chief a traditional leader in the tribe, clan or village

democratic when decisions are made by consulting with others and reaching agreement

election choosing a leader or making a decision by everyone voting and counting the biggest number of votes

family council a group of family members who make decisions for the family

formal leader a person who becomes leader because they have an official position

influence having power to change other people's behaviour

informal leader a person who is respected although they don't have an official position

leader a person who exercises power or influence over others

leadership the position of a leader

persuasive able to make someone decide to do something, by giving them reasons why they should do it, or asking them to do it

power the ability to persuade or tell others what they should do

respect to behave in a good way towards people and consider their ideas and feelings

traditional leadership the kinds of leadership practised in Solomon Islands traditional communities, e.g. chiefs

tribe a social group consisting of people who are connected to a common ancestor

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Chapter 4

Traditional Leadership Systems

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Activity 1

Use your own knowledge to answer the questions, or ask your parents or relatives, especially older people.

1 Traditionally, who were the leaders in your village or in any area you know about?
   - **a** Were they men or women?
   - **b** Was there one leader, or many?
   - **c** What were the leaders called in your language?
   - **d** How would you translate this into English?

2 How were the leaders chosen or how did they become leaders?

3 Do traditional leaders still exist? Do they have as much power as they used to? If not, why not? What kinds of people have replaced them?

Figure 4.1 A traditional chief

1 Types of leaders

Traditionally in Solomon Islands there are three kinds of leaders. These are similar to the formal and informal leaders you learnt about in the last chapter.

In some areas, leaders are chosen in a formal way, and they hold a special position in the community. They are usually called chiefs. As soon as one chief dies there is a special way of choosing another chief. In most areas the chief is a man.

In some areas, like Tikopia or Shortlands, the new chief is chosen by **heredity**, which means that a close relative of the chief becomes the next chief. The chief, therefore, always comes from the same family. In some places they follow the rule of **primogeniture**, which means that the chief's eldest son always becomes the next chief.

In other areas, like Vella la vella, the new chief is chosen in a formal way by the elders of the tribe, but he may not necessarily be from the same family as the previous chief.

In places like these, where the chief is chosen in a formal way, he has power because of the position or office he holds. People respect him because he is chief, not just because of the kind of person he is. He may not be liked by other people but they still have to respect him because he is the chief.

In other areas, including most parts of Malaita, there was traditionally no formal position of chief. The leader is the person who gains the greatest respect in the tribe or family group by his own actions and because of the kind of person he is. Traditionally a man becomes the chief. He is chosen by **consensus**, that is, by everyone agreeing together.

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Most importantly, people look for someone who:

- is able to keep the tribe or family united, peaceful and happy
- is skillful in solving arguments or quarrels among the members of the group
- is loving or has a good feeling towards everyone
- can be easily approached to ask for advice
- is an ordinary, down-to-earth person, not someone who is proud of himself
- in some cases is a powerful man or **warrior**.

He is usually someone who gains a lot of wealth but then gives it away to others rather than keeping it for himself.

People respect and follow him because of his character and what he does, but there is no special way of choosing him. Such a person may be called a **big-man** rather than a chief. When he dies, another person will gain respect and become the big-man, but this person is not necessarily related to him. His sons and family do not have any special position or take over from him when he dies, so the system is not hereditary.

Activity 2

The following passages describe the traditional system of leadership in two areas: Longgu in North-East Guadalcanal and Tikopia in Temotu Province. The first is a big-man system. The second is a chiefly system.

Read the passages.

1 Describe how leaders were chosen traditionally in your area. Mention any ways in which the system was similar to the two systems described here. Was the system in your area hereditary or not hereditary?

2 If you do not know enough about this, try to ask some old people.

Big-man in Longgu

There are many different words in local languages for big-man. In the Longgu area he is known as a *Mwanekama*, which literally means man (*mwane*) big (*kama*) or big-man. There is usually only one *Mwanekama* in each village. He is easy to recognise. Here is what Ian Hogbin, who studied this area, said in 1914:

> He is of mature years, over forty at least; he walks and sits with dignity; he lives in the most solidly built of the houses. He always invites people to his house, feeds them and organises feasts. On special occasions he may wear strings of shell discs below each knee and bracelets of porpoise teeth, and in former times he would have had several wives. The villagers also show him respect. If he joins a group, those present wait for him to speak to them before speaking. They listen with attention to what he has to say. They will not start joking unless he does so first. Although they themselves may hit one another on the back and slap one another playfully across the thighs, they take care to avoid touching him at all.
>
> From *A Guadalcanal Society* by Ian Hogbin; Holt, Rinehart and Winston, 1964

Figure 4.2 A big-man's House at Longgu, about 1910

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Some of the older big-men were very powerful and, it is said, they did terrible things, including killing people they thought were enemies. Ian Hogbin goes on to say:

> Although he seems to have a lot of power, the big-man's only strength lies in his influence over the villagers. He rules and makes decisions by discussion but his words are more respected than those of others.
>
> A big-man must have certain qualities. To win support, it is essential that he be forceful, even-tempered, polite, hard working, a good speaker and an able organiser. He must be willing to tell people what to do, but also be kind and pleasant. But the main qualification is wealth in the form of vegetable supplies and pigs.
>
> Feasts are always held for births, marriages and deaths. The person who gives the biggest feasts and invites the biggest number of guests to feasts becomes famous and respected. In other words, people recognise him as their big-man.
>
> The position of a big-man like this, therefore, is not hereditary—he must win it through his own achievements. It is also not permanent. If the big-man does things which people do not like or loses their respect he may lose his power. As he grows older, another more powerful man may rise up and take his place.

Activity 3

1. List the personal qualities or characteristics which would help a person to become a big-man.
2. Imagine you plan to become the big-man of a village. List all the things you will do to make people respect and follow you.
3. The first paragraph, on page 59, describes the ways in which people showed respect to a big-man. Think of any important leader in your village. Describe the ways in which people show respect to him or her. Think of things people do and also things they do not do when that leader is present.
4. Choose a member of the class to be a big-man. Others act as village people: think of something to ask the big-man. Go up and ask for what you want, showing respect in different ways.

Chiefs in Tikopia

The following is based on books written about Tikopia by Raymond Firth. His first visit to Tikopia was in 1928.

> There are four chiefs in Tikopia, called *Ariki*. Each *Ariki* is the head of a clan and all Tikopians belong to one of the four clans. Tikopians respect all four chiefs, but show special respect to the chief of their own clan.
>
> When a chief dies, another chief is chosen immediately. The people raise him up in their arms to show that he is the new chief. The new chief is nearly always the eldest son of the former chief, but may sometimes be another close male relative such as a grandson or brother. When a chief knows he is likely to die he usually decides who the next chief should be.
>
> In theory, chiefs in Tikopia have complete power over the people and their property. Traditionally they could even send a man away from the island in a canoe without paddles or food if he did something very wrong. Usually they use their power wisely and listen to the people before they make a decision. Once they have made a decision, however, people are expected to respect that decision, even if they disagree with it. Once a man becomes the chief, people must obey him, even if he does things they do not like. Even a chief who treats people badly must be respected and obeyed, because he is the chief. The chief keeps this power until he dies.

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Figure 4.3 The four chiefs of Tikopia

Traditionally the chiefs were also religious leaders and it was believed their power and position came from the gods. They were believed to be directly descended from the gods, through their ancestors. One chief, Ariki Kafika, continued to practise his traditional religion until he died in 1955. His grandson, the father of the present chief, became a Christian in 1956.

Figure 4.4 Chiefs and elders doing traditional dancing in Tikopia in 1984. The man in the middle with the black lavalava is Ariki (Chief) Kafika, the 'number one' chief. The man on his left with the white headband is Ariki Tafua.

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Figure 4.5 Ariki Kafika, great-grandfather of the present Ariki Kafika, offers food at a religious ceremony for his traditional gods in 1952.

The chief is the guardian of all the land belonging to the people in his clan. Although the chief and his family work and produce their own food, the chief also receives gifts when the first crops are harvested, when children are born, when people are circumcised or married, and when they die. A Tikopian who goes away from the island should bring gifts to the chief when he or she returns.

In his turn, the chief also has a duty to give gifts to people and families on many important occasions.

People show great respect to the chief when they visit him in his house. They must crawl inside, sit cross-legged, never stand up in the house, and crawl out backwards.

Activity 4

Types of leadership

Draw up a table like the one below. Write the sentences in the correct column in the table.

Big-Men (e.g. Guadalcanal)	Chiefs (e.g. Tikopia)

1. Chosen by heredity
2. Gains power through his own ability
3. Usually the son of the last chief
4. Not related to the last chief
5. Can lose power if he loses respect
6. Must be obeyed even if people do not like his decisions
7. Not a permanent position

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8 Permanent position

9 Must be rich, strong or wise

10 Must be obeyed even if he is not strong or wise

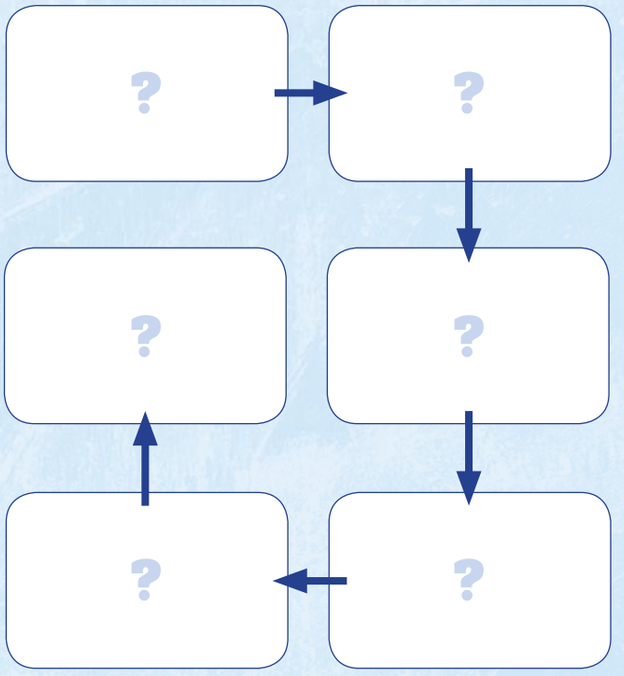
11 Relatives are also important

12 Relatives may not be important

Becoming a chief

Draw a flowchart like the one opposite. Arrange the following stages in correct order in the process of becoming a chief.

- A son is born into chief's family
- Remains chief until he dies
- Son is proclaimed new chief
- Chief dies
- People respect chief because he is the chief
- Trained to be a chief



Becoming a big-man

To become a big-man in Guadalcanal, Malaita or other islands is complicated. The following story tells how one man, 'Elota, became a big-man in Kwaio. You can read the full story in a book called *'Elota's Story* by R M Keesing, which might be in your school library. The book tells 'Elota's story in his own words.

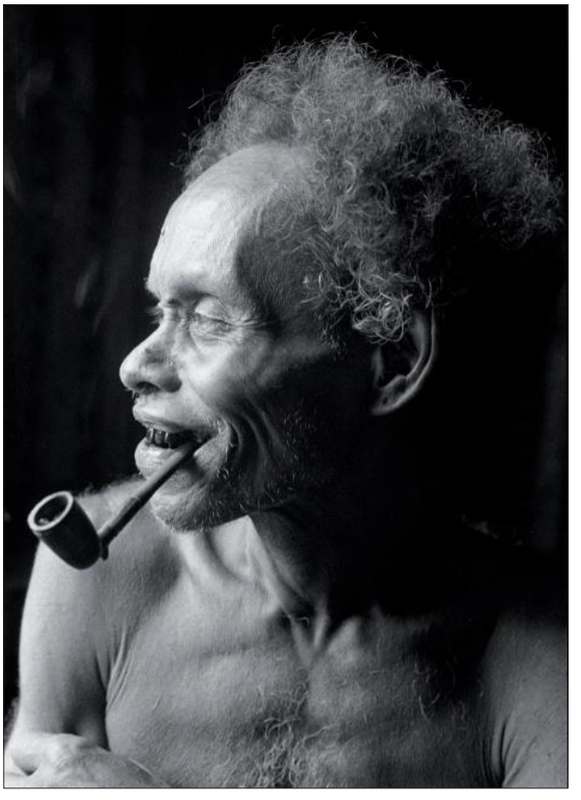


Figure 4.6 'Elota, after he became a big-man

Activity 5

Read the following eight stages and make a flowchart similar to the one in Activity 4 to show how 'Elota became a big-man.

Stage 1: Working hard in the garden and in other ways

To be a big-man you must be rich. You must work hard to get things you can sell for shell money. 'Elota grew taro which he sold to other people for feasts. He and his family made and

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Figure 4.7 'Elota's son working in the garden

Figure 4.8 Carrying pigs to a feast

sold bark cloth for wrapping peoples' valuable things; cane bracelets and arm bands for dancing; and custom baskets.

'Elota said, 'I had really understood about how, if you work hard and plan carefully, the money comes and comes and comes. I tell young people what my mother tried to tell me long ago. But young men these days are just like I was—they won't listen. I heard all my mother's advice, about making gardens and feeding pigs, but I didn't pay attention to them. But I learned my lesson.'

Stage 2: Keeping pigs

'Elota said, 'A house with pigs is a house into which money flows … If you feed pigs and raise lots of sweet potatoes for feeding them, the money will come.' He sold the pigs or used them for giving big feasts. He also stole pigs—which is acceptable in Kwaio—as long as you are not caught! 'Elota said, 'I stole my first pig when I was quite small.'

Stage 3: Giving feasts

The money he got, the food he grew, and the pigs he kept, helped him to give feasts. If you give a feast when someone dies, you receive a lot of shell money and other valuables. You also have to give away money and valuables, but this makes people respect you. The bigger the feast and the more you give away, the more people respect and admire you.

'Elota said, 'I gave fifty funeral feasts before my wife died: some small ones, some big ones. Some had only four pigs, some had as many as fifty. I had begun to make a name for myself.'

Figure 4.9 'Elota sharing out vegetables for a feast

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Figure 4.10 'Elota counts out shell money for a bride price

Figure 4.11 'Elota hangs up valuables for payment at his son's marriage.

Stage 4: Getting shell money

'Elota obtained lots of shell money and became a rich man, respected because of his wealth.

Stage 5: Helping to pay for marriage and compensation

'Elota did not get shell money to keep it. He used it to help his relatives and others to pay a bride price, or to pay compensation for wrong things they had done. This gained him more respect, especially from the people he helped. It was also a form of saving, as the people he helped would have to pay him back later, or help him make his feasts.

'Elota said, 'I have bought many girls for my relatives. Why do I buy them girls? Because of the advice my grandmother Rurui'a gave me, to work hard and gain money. I didn't believe her at first, but I've come to see she was right. The money I got for taro gardens has been spent on girls. The money I got from selling pigs has been spent on girls.' This is how 'Elota became respected.

Stage 6: Learning the names of the ancestors

'Elota said, 'When my uncle used to recite genealogies (the names and relationships of the ancestors) the others all got bored and ran away. I was the only one of us young people who stayed and listened to him … I listened to him and learnt it all. Even today I remember it all and can recount it.'

Stage 7: Killing people for blood money

In the old days another way to become a big-man was to kill people's enemies for them. If a member of one clan did wrong to another clan, the people of the second clan would offer large rewards, or *sikwa*, to those who killed a member of the first clan for them. Certain men specialised in such killing. They became rich and powerful by collecting many *sikwa* of pigs and shell money. They were then called *lamo*. 'Elota said, 'From the time I was very young, I remember the strong *lamo*—Tagailamo, Fuufu'e, Basiana, Maenaafo'oa. They were the men who were always involved in these killings. They were also involved in killing Mr Bell in 1972.'

But 'Elota himself was not a *lamo*.

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Figure 4.12 'Elota is on the right, thinking about how to settle a dispute about a boy who has run off with a girl from another clan.

Stage 8: Power and status as a big-man

Eventually 'Elota, by doing all these things, became a big-man, with power and respect in his community.

2 Traditional leaders

All communities had chiefs or big-men. They were political leaders who dealt with traditional government, laws and disputes between people. But they were not the only types of traditional leaders in Solomon Islands before contact with Europeans began.

Warriors were **military leaders** who defended people from attack or led them into fighting against their enemies. The most famous were the Ramos of Malaita or Malaghais of Guadalcanal. Not all communities had warriors. Sometimes the chiefs or big-men were the warriors who led people into fighting.

Priests were religious leaders who practised traditional religions and led people in prayers and sacrifices. In some cases the chiefs or big-men were also religious leaders, leading prayers and offerings to the gods.

Activity 6

Divide into groups.

1 Imagine that you live either in an area with a big-man or an area with a hereditary chief. There has been a dispute over land in your village. Two families both claim that a piece of land belongs to them. When a member of one family went to plant crops on the land they found members of the other family already digging the area. There was a big argument, resulting in a fight between the two groups, and one man was killed.

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The two families have now brought the matter to the big-man or chief to try to solve the problem. Make up a role play or drama to show what happened during the land dispute and how the big-man or chief solves the problem. Some groups should choose to show a big-man and some a hereditary chief.

2 Discuss and make a list of the advantages and disadvantages of having a big-man system or a hereditary chief system. Use a table like the one below.

	Advantages	Disadvantages
Big-man system	?	?
Hereditary chief system	?	?

3 Decide which system would be most suitable for your own community and give your reasons.

3 Changes in leadership

Activity 7

1 Today there are other kinds of leaders. Make a list of the leaders in your community.

2 Are any of the new leaders more important than the chief or big-man?

3 Classify the new leaders you listed in Question 1 as follows:

a Formal leaders: Those who have power mainly due to having a job or position which gives them authority

b Informal leaders: Those who have power mainly because people respect them

Because new types of leaders have become important, many traditional leaders have lost some of their power and authority. In many cases the new leaders challenged the traditional leaders or even replaced them. For instance, after the British government began to rule us in 1893, they appointed headmen to carry out the orders of the government in many areas. The headmen challenged the traditional leaders because they were given authority by the colonial government to look after local communities in the same ways the chiefs and big-men used to.

Activity 8

Changes in modern times have each produced different types of leaders:

- Modern government, with elected leaders and appointed leaders
- Christianity and other introduced religions
- Modern schooling and education
- Business and modern money
- Modern communications, including radio, newspapers and television
- Sports.

1 List two examples of each type of leader and suggest why these leaders are respected.

2 Suggest how each of the six types of new leaders listed above challenged or decreased the power of the traditional leaders. Think of what you read about young people challenging the leadership of their elders in their families in the last chapter.

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CASE STUDY

Changes in traditional leadership of Kolotubi community of Isabel

Leadership in communities in Solomon Islands is changing. These changes are a result of different ways of life and ideas coming from outside. Today the Kolotubi community in Isabel has adopted a lot of new leadership ideas in their traditional chiefly system.

Traditional leadership in Isabel

Traditionally, everybody belonged to a particular group called a tribe or clan. There were three main clans in the whole island. They were called Vihuvunagi, Posomogo and Dhonggokama. Each clan had its own chief. These clans were further divided into small groups or sub-clans. For example, the Vihuvunagi clan was subdivided into five sub-clans: called the shark (*ele*), crocodile (*vua*), snake (*poli*), eel (*oloi*) and thunder (*rete*).

Each clan had a chief. Usually a chief was appointed from within the chiefly tribe, clan or family. The person appointed had to meet the same qualities as in other areas, like Malaita (see page 58). Once people saw someone with these qualities, they would start to respect him as chief.

A chief could be replaced for a number of reasons. First, if he died, another person could be appointed to replace him. Second, if he or his people realised that he was no longer capable of leading them, or his behaviour was not acceptable to the people, he could be replaced by another, more capable, person.

Activity 9

What type of leadership did Isabel have:
a hereditary chiefly system like Tikopia or
a big-man system like Guadalcanal and Kwaio?

Modern leadership in Isabel

How chiefs are chosen today

Today the new system of voting introduced by the British is used to choose the chiefs.

The Kolotubi village is split into two separate church communities, the Church of Melanesia (COM) and the Episcopal Church of Solomon Islands (ECOPSI).

Each church community elects four chiefs separately to represent their church community in the Kolotubi council of chiefs, which is made up of eight village chefs. The selection process for the two communities involves nominations and then elections of their four chiefs. The final eight candidates with majority votes are installed as the new chiefs. The village chiefs are replaced after every three years through the same process.

Under this process, anybody can be a village leader, so long as the people want him or her to be their leader. They usually choose a man, but a woman could be chosen. Since everyone is involved in the selection process, they must try to work with the person they choose.

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Usually, people look for the following qualities in the people they elect:

- a person who can speak well and can make good decisions
- a good personality
- someone who obeys customs and traditions
- a willingness to work
- skill at some things, for example, house building
- an even temper
- an understanding of customs and traditions
- literacy: someone who can read and write
- someone who is good at giving advice and solving problems
- the ability to welcome visitors well.

Activity 10

Compare these criteria for choosing a modern chief with those given for choosing a traditional chief. Copy and complete the table.

In the first column, write criteria which are the same in both lists.

In the second column, write criteria used for traditional chiefs but not modern chiefs.

In the third column, write criteria used for modern chiefs but not traditional chiefs.

Criteria for choosing chiefs

Same for traditional and modern chiefs	Traditional chiefs only	Modern chiefs only

Kolotubi house of chiefs

The Kolotubi house of chiefs consists of the eight elected village chiefs. They choose a chairperson from their group to be in charge of the council of chiefs. The chairperson becomes the overall leader of the chiefs and the whole village community. He or she is in charge of all the working committees. He or she must also ensure that there is close cooperation and unity within the committees and the village. (See Figure 4.13 on page 70.)

Working committees

There are seven working committees. Each one is in charge of one aspect of the village. They plan and supervise the work carried out by the villagers in the areas they look after. For example, the church committee organises and supervises any church work. The village chairperson makes sure all the committees do their work.

When meetings are held

The village council of chiefs meets every three months or when there is a need. For example, when community work is needed, the council must decide how this should be done.

Paramount chiefs

Another change in leadership is that Isabel has chosen one of the chiefs to become the **paramount chief**, or the most important chief, to look after the whole island. The first paramount chief of Isabel was the late Bishop Dudley Tuti, who was formerly the leader of the Church of Melanesia in Isabel. This position did not exist traditionally, as each chief was only in charge of his own area. Many places now choose paramount chiefs, but this is not traditionally part of Isabel custom.

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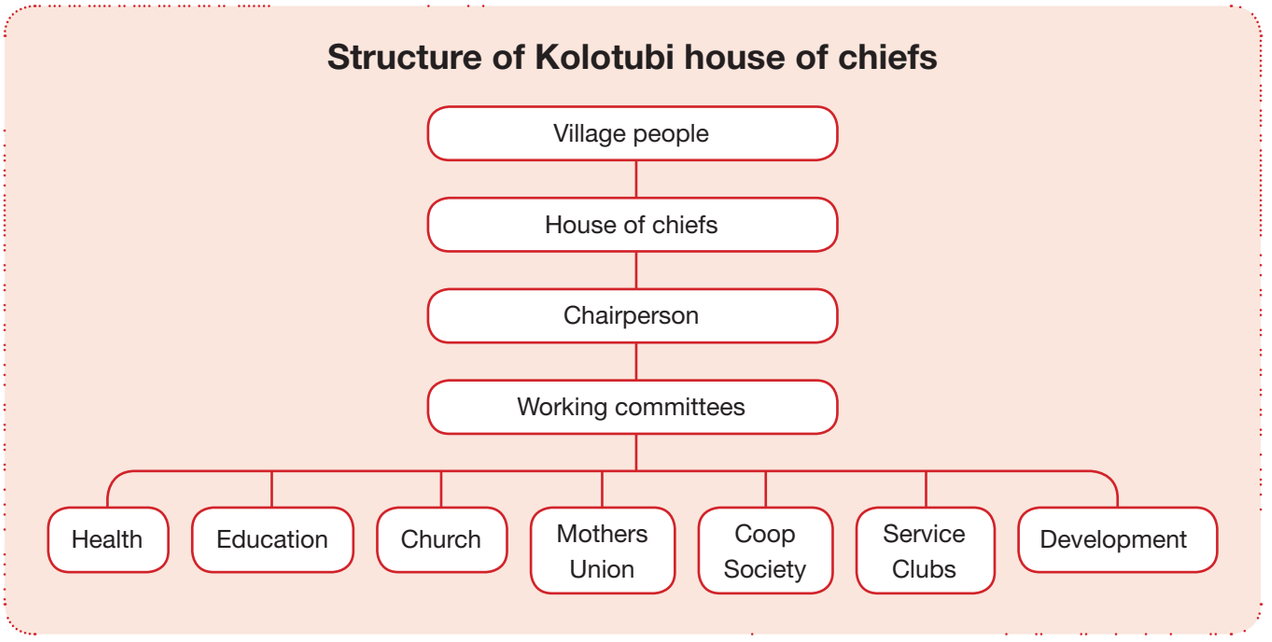

Figure 4.13 Kolotubi house of chiefs

Activity 11

1 What are the differences and similarities between the traditional leadership you learnt about earlier and the present leadership in Isabel? Use a table like the one below.

Traditional leadership and present leadership	
Similarities	Differences

2 In groups, make lists of the good things in traditional leadership and the good things in present leadership. Use a table like the one below. Which kind of leadership do you think is best? Give reasons.

Good things about leadership	
Traditional leadership	Present leadership

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Glossary

big-man someone who becomes a leader because people begin to respect him for the kind of person he is or the actions he does, not by inheritance or election

consensus making decisions by discussion and everyone agreeing on something without voting

heredity when something is passed on to you by your parents or other close relatives

military leader a leader of people who fight e.g. the army

paramount chief a very important chief, often the leader of a group of chiefs

priests people who look after religious life and practices

primogeniture the system of inheritance where things are always passed from the father to the eldest son

warrior fighter

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Chapter 5

Introduction to Mapping Skills

1 What is a map?

Activity 1

1 Your teacher will give you a sketch **map** of your school. On the map:
   - **a** name the main buildings
   - **b** name any other **features** marked.

2 Mark:
   - **a** the route from your classroom to the principal's office
   - **b** the route from the main entrance of the school to your classroom so that someone visiting the school can find your classroom
   - **c** any other routes suggested by your teacher.

3 Use the map to describe to a visitor how to get from the school entrance to your classroom.

4 Look at the map you have filled in. From this example, answer the following questions.
   - **a** Explain in your own words what a map is.
   - **b** Make a list of the things a map can show you.
   - **c** Do all of the things on the map look real like a picture or photograph? How are they different from a picture or photograph?
   - **d** Suggest three ways in which maps are useful.
   - **e** This map shows your school. What are the main differences between the map of the school and the school itself?
   - **f** A map shows the place looked at from what angle?

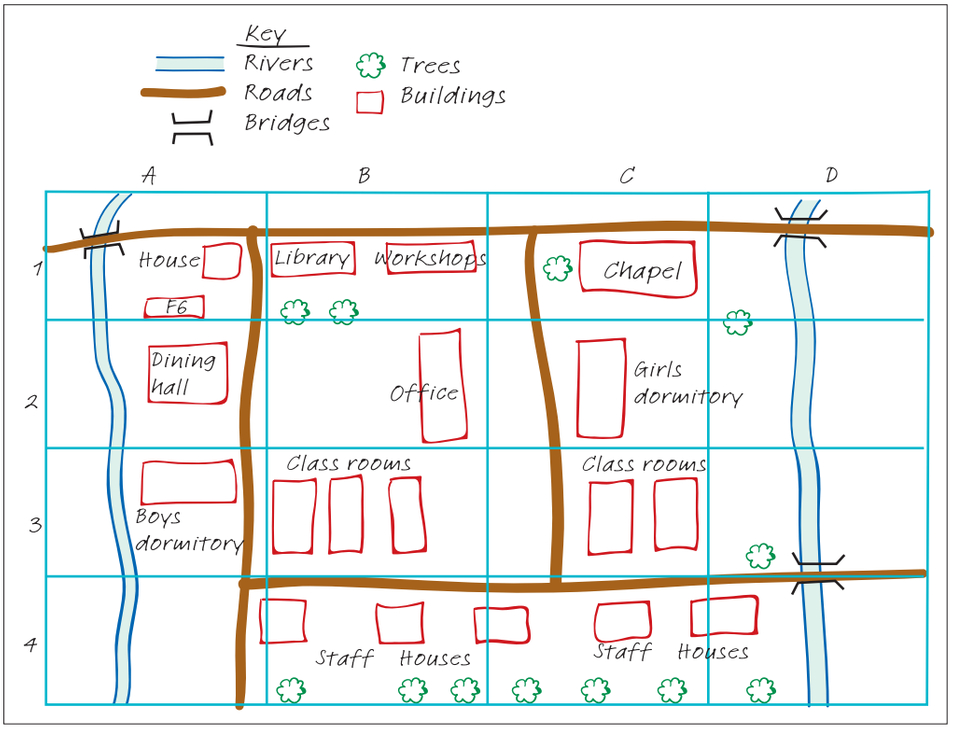

Figure 5.1 A map of St Luke's School

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Look at the map of St Luke's School in Figure 5.1. It shows the following standard features of maps.

1. It is much smaller than the real school. Maps are 'scaled-down' versions of the real thing, just as a toy car is a 'scaled-down' version of a real car. We have to scale-down or reduce the size of the school to fit it onto the paper, just as we would have to reduce the size of the school to draw a picture of it. We reduce the size by using a scale.
2. We usually draw a picture looking straight ahead from where we are standing. That's the way we usually see the school. The map is a picture looking down from above, as a bird would see it.
3. Because we are looking down from above, the map is useful for showing directions, that is, how to get from one place to another, for example, from the dining hall to the chapel.
4. Sometimes things are too small or difficult to draw on a map so we represent the real thing. On this map, trees are represented by circles with crosses in the middle ⊕ and bridges are shown like this ⌒. These are called **symbols**.
5. Some maps, like this one, are divided into squares called a **grid** to help you find a place on it. You can find a place by knowing which square it is in.

2 Map scales

To use a map you need to know about scales, directions, symbols and grids.

Figure 5.2 is a photograph of Mary. Do you think Mary is really this size? Obviously, she is much bigger. When we take a photograph we reduce the size of the person. In the same way, when we draw a map we reduce the size of the area we want to show on the map.

Mary is actually 160 centimetres tall. Measure the size of her from head to toe in the photograph. She is only 8 centimetres tall in the photograph. This means in the photograph she is 1/20 of her real size. All parts of her body must, therefore, be 1/20 of their real size. Her nose must be 1/20 of its real size and her arms 1/20 of their real length.

We can say that the **scale** of the photograph of Mary is 1 : 20.

1 centimetre in the photograph represents 20 centimetres in reality.

Her height in the photograph is 8 centimetres, so her real height in centimetres is 8 × 20 = 160 centimetres.

Figure 5.2 Mary

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Activity 2

How long are Mary's arms in centimetres? in millimetres? in inches? Measure the length of her arm in the photograph in centimetres, millimetres or inches and multiply by 20.

This is called a scale or representative fraction, i.e. 1 : 20. It means that any length in the photograph can be multiplied by 20 to find the length in reality. The real Mary is 20 times the size of the photograph.

Maps also use scales, often expressed as representative fractions. To draw a map on paper we need to reduce in size the area we want to draw. The representative fraction tells us how much we have reduced it. A representative fraction of 1 : 100 means we have reduced everything to a hundredth of its real size. A representative fraction of 1 : 5000 means we have reduced everything to a five-thousandth of its real size.

Activity 3

1 In your exercise book, draw a map of the top of your desk. You will have to reduce its size. Measure the width and length of the top of your desk. Measure your exercise book. By how much will you need to reduce the size of the desk to fit it onto the page of your exercise book? By a quarter of its real size? By a tenth? The size of the reduction will be the representative fraction of your map, for example, 1 : 4 or 1 : 10.

2 If the distance on a map from A to B is 10 centimetres and the representative fraction is 1 : 500, what is the real distance from A to B in centimetres? How far is that in metres?

Other ways of using scales

Another way of using scales is to use actual units. In the example in Question 2 of Activity 3, we can say that 10 centimetres on the map represents 50 metres on the ground. So 1 centimetre on the map represents 5 metres on the ground. We can write the scale as 1 cm : 5 m.

To make it easier we can actually draw the scale on the map. This is called a line scale.

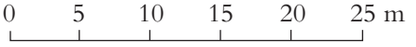

Figure 5.3 An example of a line scale

Activity 4

Draw a line scale for 1 cm : 5 m. Draw a straight line 5 centimetres long. Mark each centimetre with a tick along the line. Mark 0 at the beginning of the line. If the scale is 1 cm : 5 m, the first tick on the line will represent 5 metres, so mark this 5 m. Now mark all the points in metres from the 0 mark.

Activity 5

Now practise drawing a real map with a scale. Use the steps below to help you.

- You may not have a long tape measure for measuring metres, but you can use a scale by counting your paces, or the average length of your step. Choose any route around the school or school area. Draw a sketch map of the route, showing where you turn corners and any buildings or other features on the way. An example is shown in Figure 5.4.
- Walk along the route and count the number of paces or steps along each straight stretch. Mark these numbers on your map.
- What is the total length of your map in paces? What is the size of your paper? Divide the

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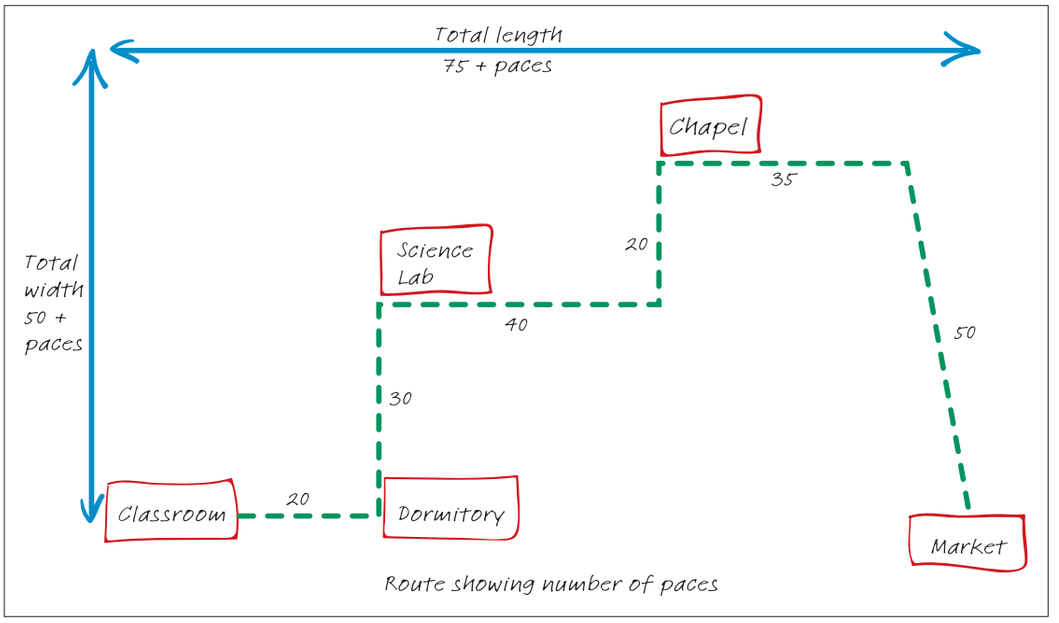

Figure 5.4 An example of a sketched map of a route at school

number of paces by the length of your paper in centimetres to find a suitable scale, for example, if your paper is 20 centimetres long and the length of your route is 200 paces: 200 ÷ 20 = 10. So your scale could be 1 cm : 10 paces. Add a few extra paces on either side of the route at the beginning and end to allow space for buildings, etc.

- Now redraw your sketch map using a scale. Use your original map to find the number of paces between each of the major points. Use your scale (for example, 1 centimetre represents 10 paces) to convert the paces into centimetres and measure this distance on the map. So, in this example, if the first distance is 30 paces it will be shown by 3 centimetres on the map. Note that your scale may not be the same as this example. Choose your own scale.
- To make it more mathematical, you can measure the average length of your pace in centimetres or metres and convert your paces into measurements in metres.

3 Following directions

How would you describe in words the route you drew in Activity 5?

You could describe it by telling someone where to turn left and right and how many paces between each turn. You could find direction by looking at the position of the sun or using important landmarks or features (for example, turn right at the chapel). However, it is better when using maps to describe directions using the points of the **compass**.

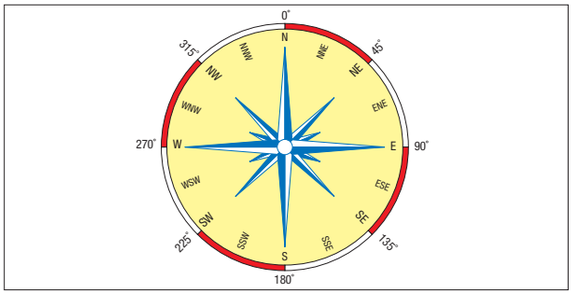

Figure 5.5 The points of the compass

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The main feature of a compass is a magnetised needle which can spin around as illustrated in Figure 5.5. The Earth has a **magnetic field**, just as if a huge magnet lay inside it. Because the compass needle is **magnetised**, one end of it is attracted to the Earth's North Pole and the other end points to the Earth's South Pole. So wherever a compass is, its needle always points to the North Pole. The end of the needle that points to the north is always clearly marked by a colour or by a letter N.

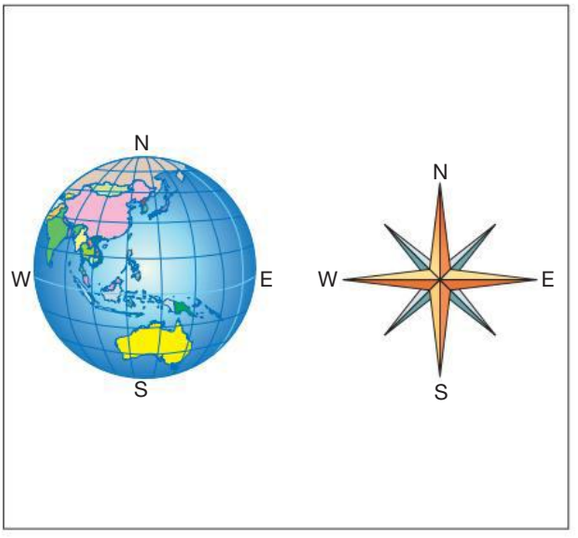

Figure 5.6 A compass needle always aligns with the North Pole, showing us which way is north.

Points of a compass

You learnt in primary school that a compass has four main points, known as **cardinal points**. These are north, south, east and west. If you are facing north, then south is behind you and east is to your right. However, if you are facing south, then north is behind you and west is to your right.

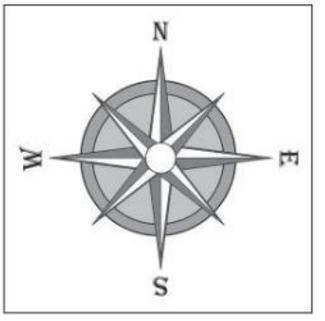

Figure 5.7 The cardinal points of the compass

Activity 6

1 If you are facing east, is north to your left or right?

2 If you are facing south, is west to your left or right?

3 If north is behind you, which way are you facing?

4 If west is to your left, which way are you facing?

5 Use the map in Figure 5.8 to answer these questions.

- **a** What direction is the reef from the school?
- **b** If you stand at the bridge and look towards the playing field, what direction are you facing?
- **c** In what direction is the playing field from the mangrove swamp?
- **d** In what direction is the river flowing?

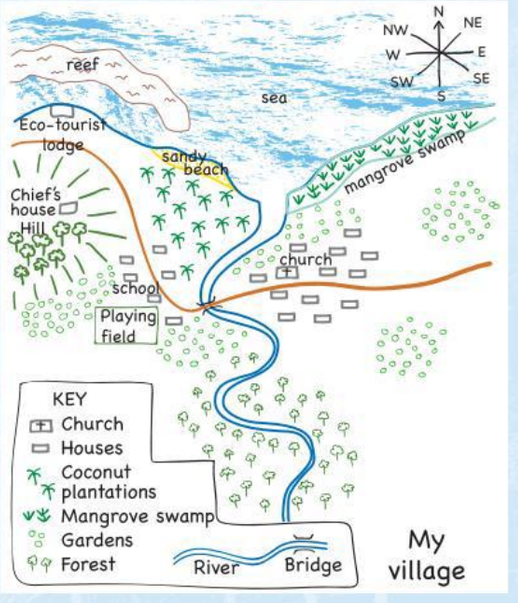

Figure 5.8

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The points of a compass can be used to describe the direction of travel, or the positions of features in relation to one another. Between the cardinal points of a compass are the **inter-cardinal points**. The inter-cardinal points increase the number of compass directions to eight. The inter-cardinal points combine two cardinal points. For example, south-west: you go south and west at the same time.

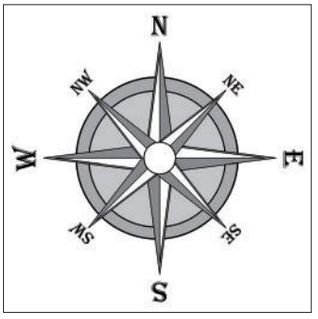

Figure 5.9 The inter-cardinal points of the compass

More accurate than an eight-point compass is a sixteen-point compass. For example, south-south-west means south of south-west.

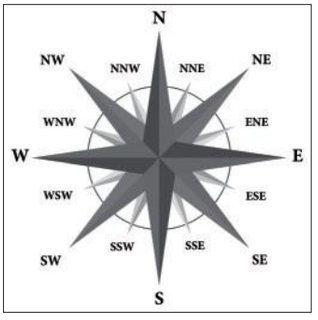

Figure 5.10 A compass showing sixteen points

Activity 7

1 Using the map you drew for Activity 5, mark with an arrow where north is. Describe the route you drew using points of the compass and distances. Remember to use the scale on the map.

2 Show along the route any important features, such as trees, rivers or streams, buildings, shops, stores, bridges.

4 Use of symbols

How did you mark the features on the last map? You might have used pictures or you might have used symbols. As you have learnt in primary school, symbols are used on maps to show features where there is not enough space to draw a picture. So if you want to mark a church on a map you might use a cross: +. You can also use shading or colours. For instance, if you want to show the crops grown you might shade all the areas growing potatoes in yellow.

If you use symbols, you need to use a **key** next to the map to show what each symbol means.

Activity 8

Copy the table below, using larger spaces, and fill in the key with any suitable symbols.

Features	Symbol
Road	?
Bridge	?
School	?
Hospital	?
Forest	?
Soccer field	?
High land	?

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5 Main characteristics of a map

In addition to what you have learnt, maps should usually have other features. These include a title, a border, a north point and a key.

The title gives the name of the place or area which the map shows. It also describes its purpose, that is, it tells us what the map is supposed to show. For example, 'Map of school gardens to show crops grown'.

The border shows the limits or borders of your map. It is a line around the edge of the map.

The north point shows which way north is.

The key explains which symbols have been used to represent particular features.

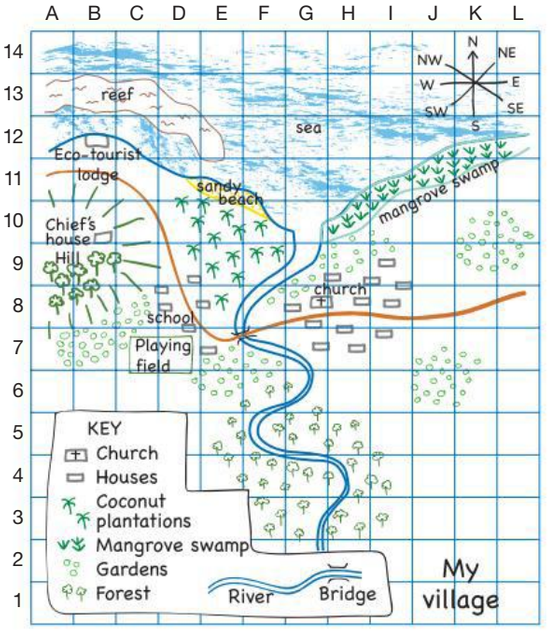

Figure 5.11 Sketch map with a grid

6 Grids

To make it easy to find places, some maps are divided into squares called a grid. A simple grid uses letters and numbers to identify each square, for example, square C4 is the square where the **horizontal** line C meets the **vertical** column 4. This is called a grid reference. These can also be called **coordinates** and you will learn about this in Mathematics.

Activity 9

On the map in Figure 5.11, what are the grid references for:

a the church?
b the chief's house?
c the eco-tourist lodge?

7 Types of maps

The map in Figure 5.12 shows all the features of a map learned so far.

In addition to the kinds of maps we have learnt about, there are other kinds of maps using symbols or colour shading to show special features of places.

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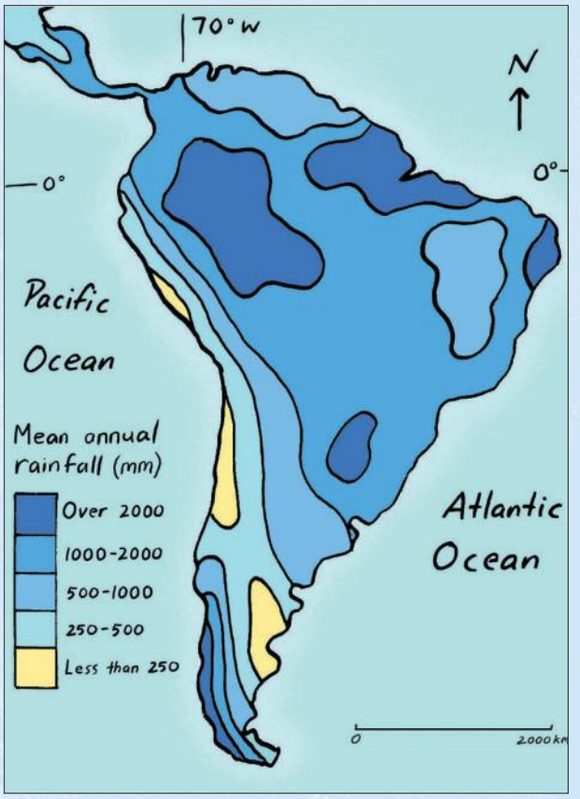
Activity 10

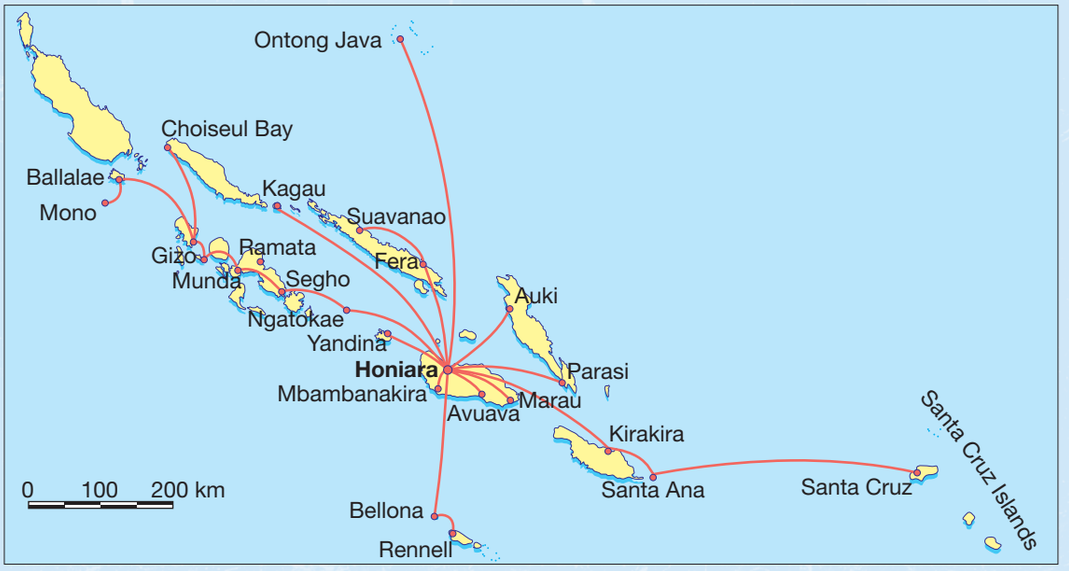
Look at the examples of different types of maps. State what kinds of features each one shows.

Map 1 Political map

Map 2 Rainfall map



Map 3 Route map



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Atlases

Sometimes maps of many places, and different types of maps, are combined in one book. This is called an **atlas**. Atlases often contain maps of all parts of the world. Ask your teacher to show you an atlas, or find one in your library.

Maps can be classified into three main types.

1 **Maps of the natural environment**
The most common of these types are **relief maps** or physical maps. These are concerned with such features as mountains, hills, rivers and lakes. Other less visible features of the natural environment are also represented on maps. Examples of these are rainfall maps, soil maps and geology maps, which show different types of rocks.

2 **Maps of the cultural environment**
These maps represent human features such as roads, buildings and air routes, as well as social and political features. For example, population maps and maps which show regional and national boundaries are cultural maps. Economic maps showing crops or industries or other products are also types of cultural maps.

3 **General maps**
General maps combine both cultural and natural features, and they are the most useful kind of maps for everyday use. Many of the maps in atlases are general maps. They include natural features such as rivers, lakes and mountains, and also such cultural features as buildings, roads, railways and

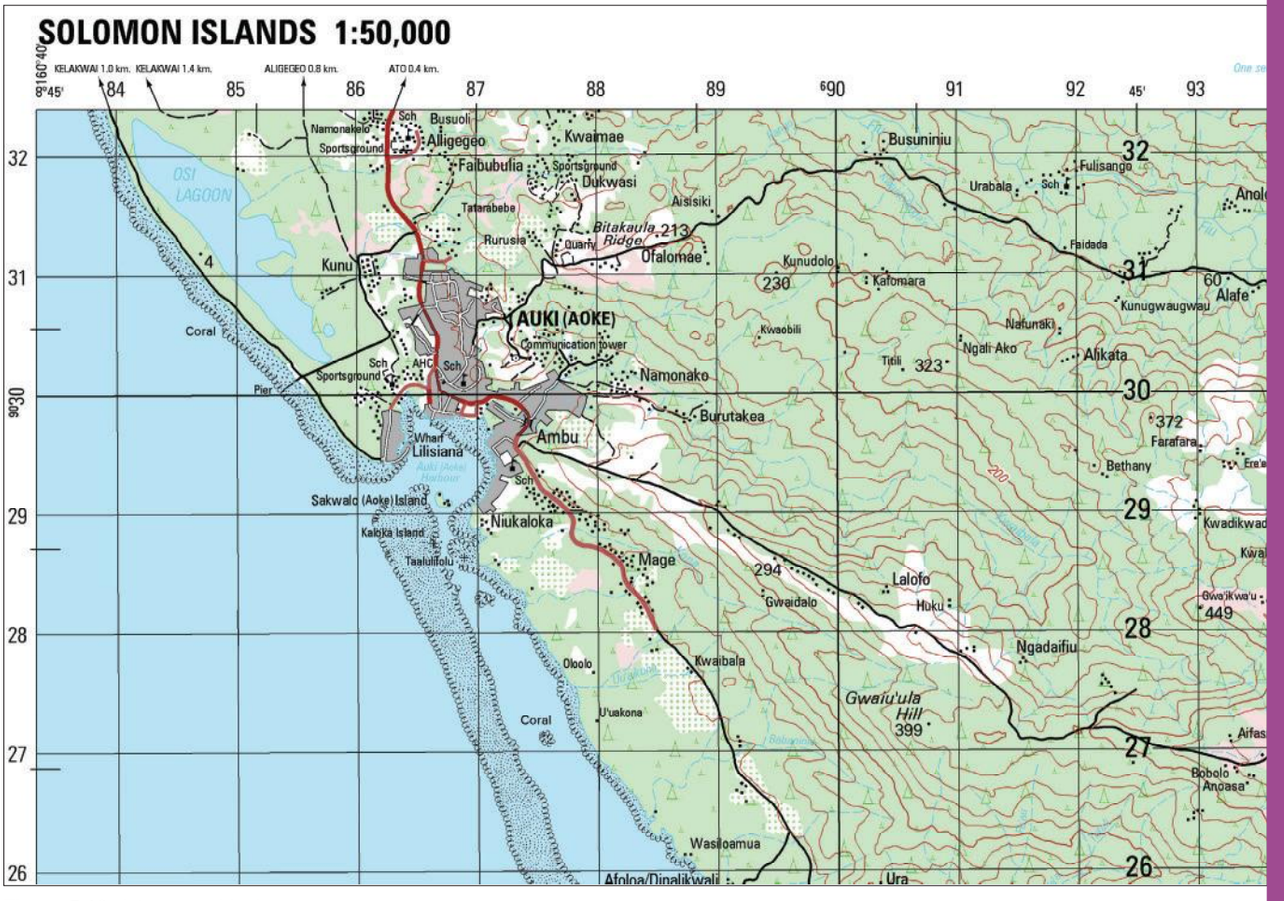

Figure 5.12 A topographical map

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important boundaries. The amount of detail included depends on the scale of the map. Atlas maps will only show the major features of the environment.

Other types of maps include:

- **Topographical maps**
  Large-scale general maps are called **topographical maps.** These are usually printed on large sheets and show many details of both the natural and cultural environment. An example is shown in Figure 5.12.
- **Relief maps**
  Some maps show the height and shape of the land, for example, whether there are hills, valleys or flat land. One way to show this is by using different colours to show different heights. This is called layer shading. The map must have a key to show what height each colour represents.

Activity 11

Look at the map in Figure 5.13 with its key and answer the questions. Use the grid or **compass points** to help you.

1 Where is the highest land?

2 Where is the flat land?

3 Where is the round hill?

4 Where are the two steep valleys?

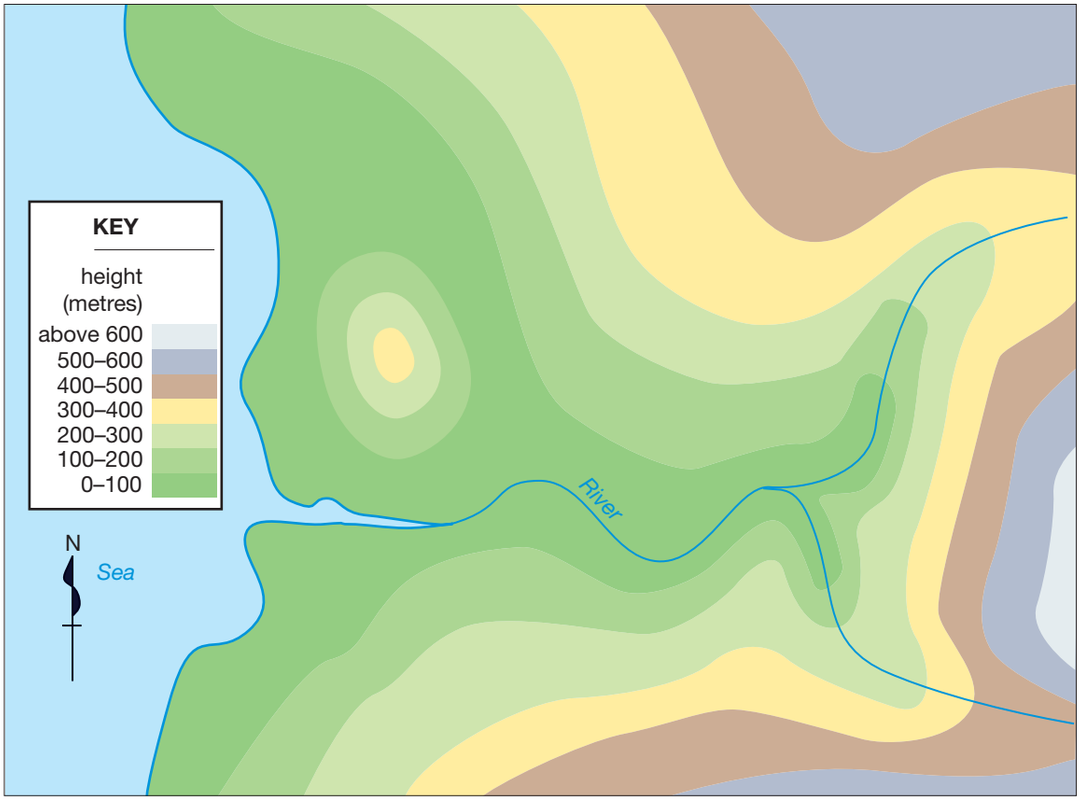

Figure 5.13 A relief map

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8 Differences between maps and photographs

Activity 12

In groups, look at Figure 5.14 which shows a map and a photograph of the same area. Then complete the activities.

1 List the differences between the two with regards to their size, the shapes of things shown, the use of colours, distances, directions, symbols and any other differences you can see.

2 Report back your group's ideas and hold a class discussion of the differences between maps and photographs.

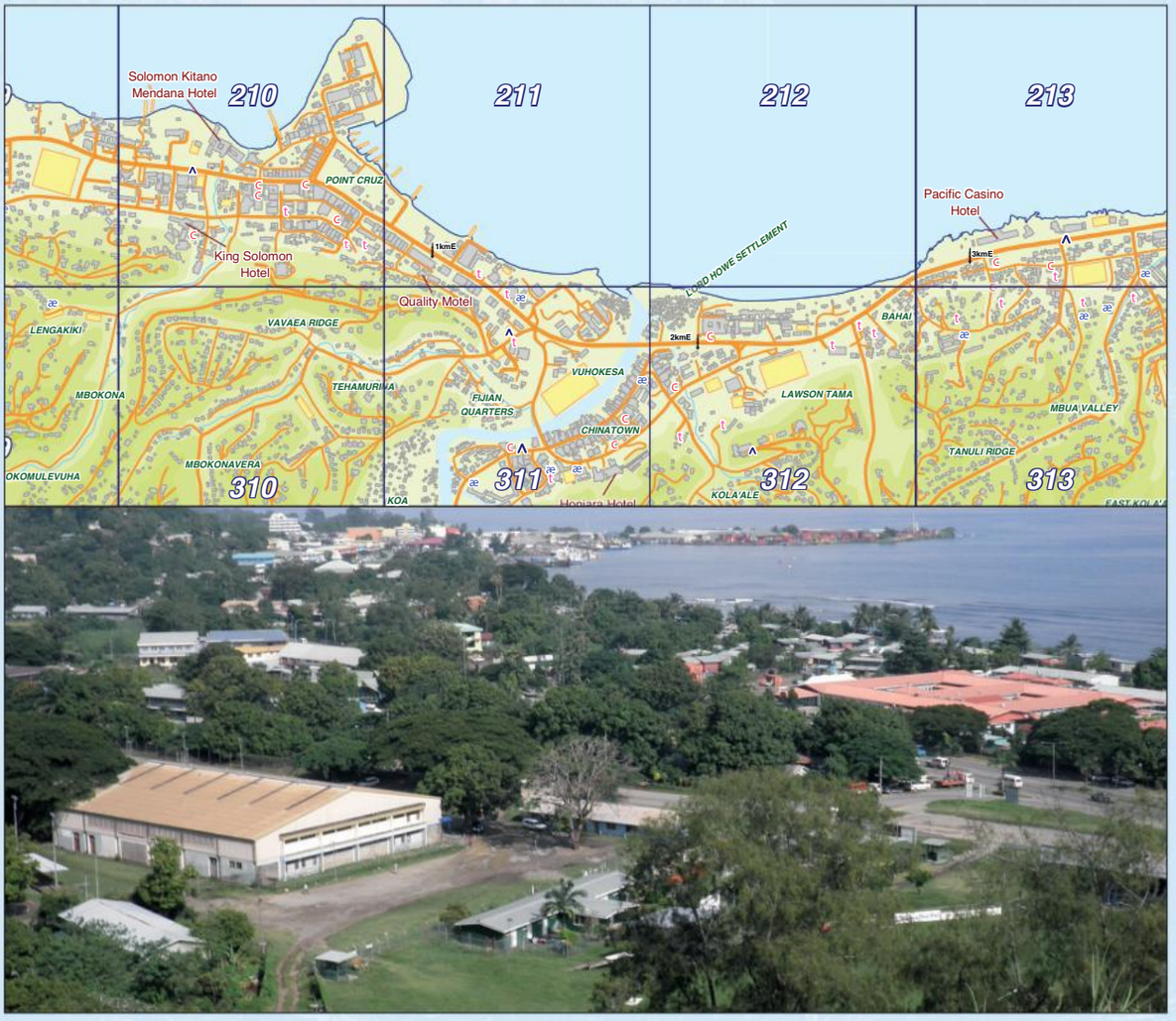

Figure 5.14 This map and photograph represent the same area. The photo was taken from the top of the hill east of Lawson Tama looking across Lawson Tama towards Point Cruzo.

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9 Importance of maps

You have learnt some basic information about maps. These basic ideas are useful for people to know about certain places. Because of this, maps are important. Some of the reasons why people use maps are to:

- find locations of places. For example, when people are not sure about how to get to a certain place, they may use a map to show them the location of that place. The map therefore guides them to reach that place.
- find directions of a particular place in relation to another place. For example, all maps show the direction for north. From this, people can work out the direction of one place on the map in relation to another.
- find out about the features of a particular place. For example, some maps (topographic maps) show natural features such as rivers, mountains, swamps or flat land areas. This information gives people a good understanding about a particular place.
- find out about the distance between two places. People can use the scale on a map to calculate any distance between two places on the map.

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Glossary

atlas a book which contains maps of all kinds

cardinal points the main points of the compass: north, east, south, west

compass an instrument for finding direction

coordinate a pair of numbers representing a point where two lines intersect each other at right angles

feature main part or characteristic of a place

grid a set of horizontal and vertical parallel lines intersecting each other to form squares

horizontal across

inter-cardinal points points on a compass between the main points, e.g. north-east, south-west

key list of symbols used on a map, to show what they mean

magnetic field an area affected by the force of a magnet

magnetised (needle) a compass needle that is always attracted towards the direction of the North Pole

map a drawing of a place looking directly down from above

relief map map showing hills, valleys, flat land by using colour for the different heights

scale information on a map (a line or a fraction) which shows how much smaller than real life a map is

symbol a sign, drawing or colour on a map which represents a real feature

topographical map map showing details of natural and cultural features, on a fairly large scale

vertical upwards

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Chapter 6

Volcanoes, Earthquakes and Tsunamis

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1 How do we know that the Earth moves?

Activity 1

1 How would you describe the earth we live on?
   - **a** Solid and stable (never moving)
   - **b** Rarely moving
   - **c** Unstable and often moving
   - **d** Very unstable and frequently moving

2 Give reasons or evidence for your answer to Question 1.

3 Have you ever felt an earthquake or seen a volcano erupt? If so, describe what you saw or how you felt. Did the earthquake or volcano cause any damage or have any permanent effects?

4 Are there any traditional stories or beliefs about earthquakes or volcanoes in your home area? If so, briefly tell the story or describe what people believe.

People who were living in Western Province or Choiseul on 2 April 2007 would definitely say that the Earth is unstable and often moves. Here is a description of what one person experienced. Delster was a student at Gizo Community High School. He later received a medal from the Governor General for his bravery.

Delster's earthquake and tsunami experience

On the morning of 2 April 2007, I was on my way to school at Gizo Community High, when the 8.1 (on the **Richter scale**) earthquake shook. I decided to run back home. Members of my family were already standing outside our house when I joined them.

Suddenly, three lines of small waves formed just off the reef outside, several metres away from the coastline.

The waves came rushing through without stopping and crashed through the front line of our houses. Our family could not save any belongings because the tides were running like currents without stopping. We decided to head to the hills.

I was the last to escape and on my way, I saw a five-year-old girl, named Julia, locked inside a nearby house, calling out for help.

I quickly responded by kicking the door open. Suddenly a strong wave carried me inside the house where the two of us started to struggle. I told Julia to hold tight from behind on my school bag.

Figure 6.1 Delster receives a medal for his bravery from the Governor General.

continued on page 88

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There was a lot of water and debris. At one stage, I had to tell Julia to stand on a higher object while I dived under an electric cable before reaching out to her once again.

The struggle inside the house took several minutes.

We managed to keep going when another strong current-like wave broke open a louvre window, which effectively threw us outside and took us inside another house.

This was to be our second struggle; however, it was not so tough or long-lasting. We faced many hurdles because the water had already filled the inside of the house. But our luck came when I broke open a window with an object. The deep water inside carried us outside once again to dry land.

Having safely reached dry land, I met my mother, who had also freed herself from another house, after facing a similar ordeal.

I called out and hugged my mother, while Julia was passed on to her uncle.

Three things tell us that the Earth is unstable and often moves: earthquakes, **tsunamis** and volcanoes. All three occur in Solomon Islands. All have similar causes.

2 The Earth's rocks and plate tectonics

The rocks which make up the Earth are not as solid as they look. They can move and, if they do so, we feel this as an earthquake. If this movement happens under the sea it can cause big waves, called a tsunami. This movement occurs because rocks deep inside the Earth are hot and under great pressure. This means they can slowly be bent like the wet mud builders use. Rocks which are very hot can melt; they become liquid and flow fast. In places these rocks flow out of cracks in the Earth, forming volcanoes.

Although no-one knows much about what goes on under the Earth's surface, scientists think they understand the different layers or structure of the Earth. There is no way to measure the actual temperature deep inside the Earth, so scientists can only make estimates. There are four layers inside the Earth, shown in Figure 6.2.

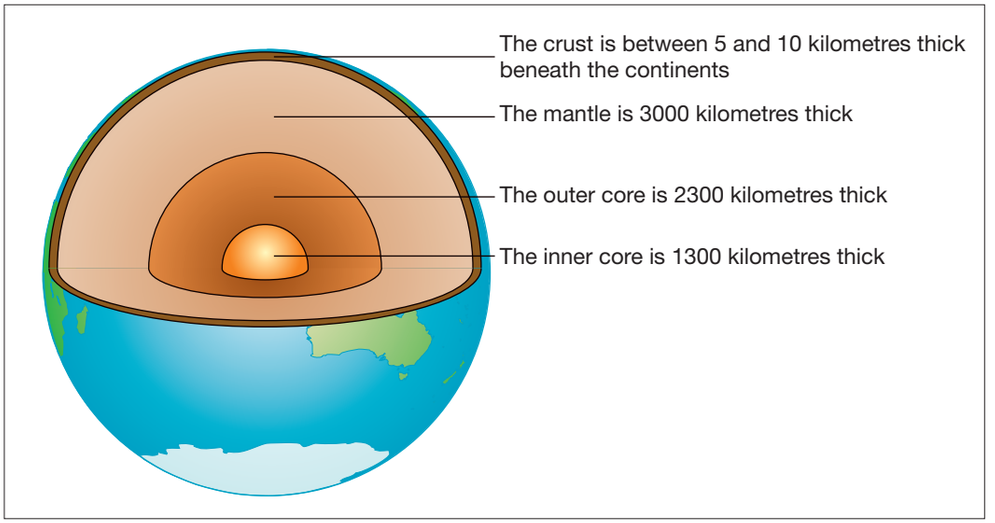

Figure 6.2 The structure of the Earth

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Their estimated temperatures are:

- **inner core**—70 000 °C
- **outer core**—50 000 °C
- **mantle**—ranges from 1000 °C to 40 000 °C
- **crust**—0 °C or the temperature of the air at the surface.

Activity 2

Answer the questions in your own words, without copying the text.

1. What happened to Delstear was caused by a tsunami. What is a tsunami and what causes it?
2. Which is the hottest part of the Earth?
3. When do hot rocks flow out to the Earth's surface?

The inner and outer cores

The centre of the Earth is called the inner core. It is a hot, dense layer of solid iron and nickel. Surrounding this is the outer core, which is a hot layer of liquid iron and nickel.

The mantle

The mantle surrounds the outer core and is the thickest layer of the Earth. The mantle is made up of many different rock materials that are very hot. These hot rocks are called **magma**. The hot rocks in the mantle are under great pressure and this causes them to flow very slowly or bend. If there is a crack in the rocks above, these very hot rocks become liquid and flow out of the crack to form a volcano.

The crust

The crust sits above the mantle. As Figure 6.3 shows, it is made of many huge pieces called

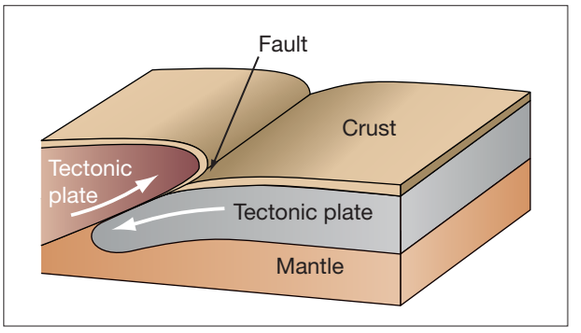

Figure 6.3 Tectonic plates

tectonic plates. The plates fit together well at the boundaries, where two plates meet. Sometimes, the plates move. The friction between the plates causes earthquakes near the edges of these plates. The theory that explains this process is called **plate tectonics**. It also explains why earthquakes and volcanoes are found near **plate boundaries**.

There are cracks in the Earth's surface where two plates meet. Because the temperatures deep down under the surface are very hot, the rocks near the bottom of the cracks become **molten** and flow to the surface as **lava**, forming volcanoes.

If you walk down a steep slope, friction between your feet and the ground prevents you from sliding. Suddenly, however, the friction may give way and you slide down the slope. Similarly, most of the time when the plates push against each other, friction stops them from moving. Suddenly the pressure becomes too great and the plates move violently, rubbing against each other so that the land on either side shakes. This is what causes an earthquake.

Volcanoes and earthquakes are generally found in regions where two plates meet. Earthquakes occur regularly all along these plate boundaries, although they occasionally occur in other places.

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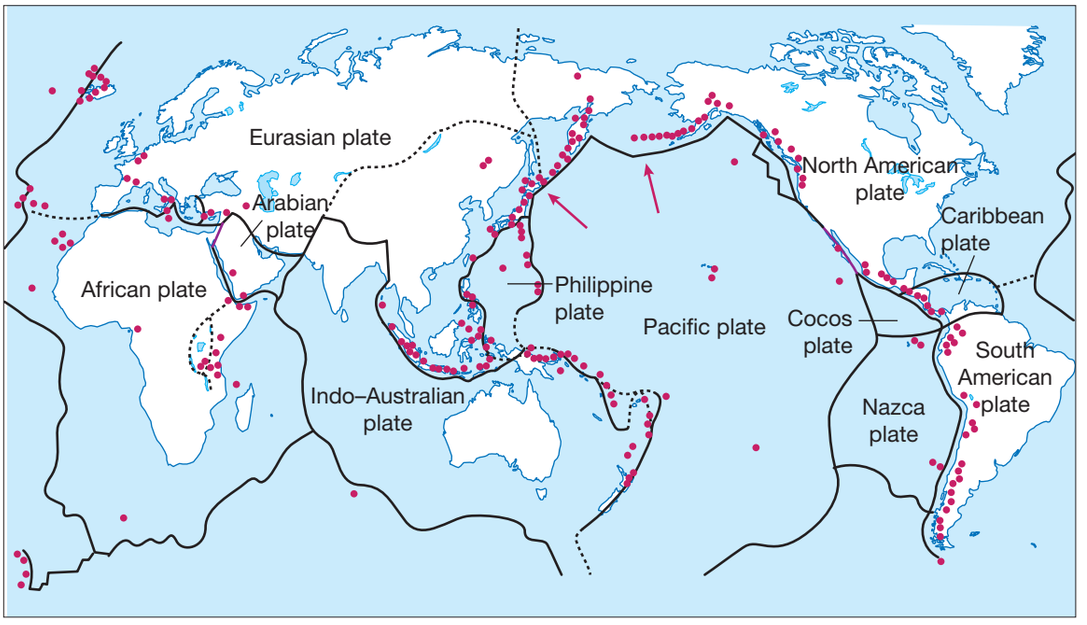

Figure 6.4 Map of the world's tectonic plates, active volcanoes and the **Ring of Fire**. The black lines show the boundaries of the plates.

There are well over 500 **active** volcanoes and thousands of **dormant** and **extinct** ones in the world, mostly near plate boundaries. Many are located in the Pacific Ring of Fire. The map in Figure 6.4 shows the plates, plate boundaries and the location of volcanoes in relation to plate boundaries, including the Pacific Ring of Fire. This is located around the edge of the Pacific Plate, which includes almost the whole of the Pacific Ocean.

Activity 3

Look at Figure 6.4, a map of the world's plates.

1. How do you think the Ring of Fire got its name?
2. Explain in your own words why most earthquakes and volcanoes are located along the edge of plates.
3. Do you think the middle of the continents far from the sea have many earthquakes? Explain your answer.
4. Is Solomon Islands in an earthquake and volcanic zone? Why?
5. Name five countries which have a large number of volcanoes.
6. What types of problems do you think the people who live close to these volcanoes might have?

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Plates in Solomon Islands

Figure 6.5 shows a more detailed map of the plates on which Solomon Islands lies. We are actually at the meeting point of four plates: the large Pacific Plate on one side, and the smaller Solomon Sea, Woodlark and Australian plates on the other side. The white lines show the plate boundaries and the white arrows show the directions the plates are moving.

The three smaller plates are moving towards the large Pacific Plate. As they move, they slide underneath the Pacific Plate, pushing the edge of the Pacific Plate up higher.

Simbo is on the Woodlark Plate. Ranongga is on the Pacific Plate. The Woodlark Plate is slowly sliding down and pushing Ranongga upwards along the **subduction zone**.

During the big earthquake on 2 April 2007, Simbo moved downwards and Ranongga was pushed upwards by more than two metres, raising the coral reef on the coast of Ranongga out of the sea so the coral and the fish on it died.

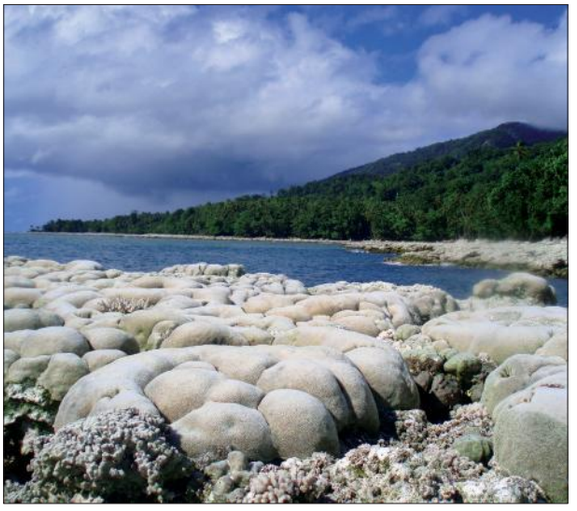

Figure 6.6 Coral raised out of the sea at Ranongga during the 2007 earthquake

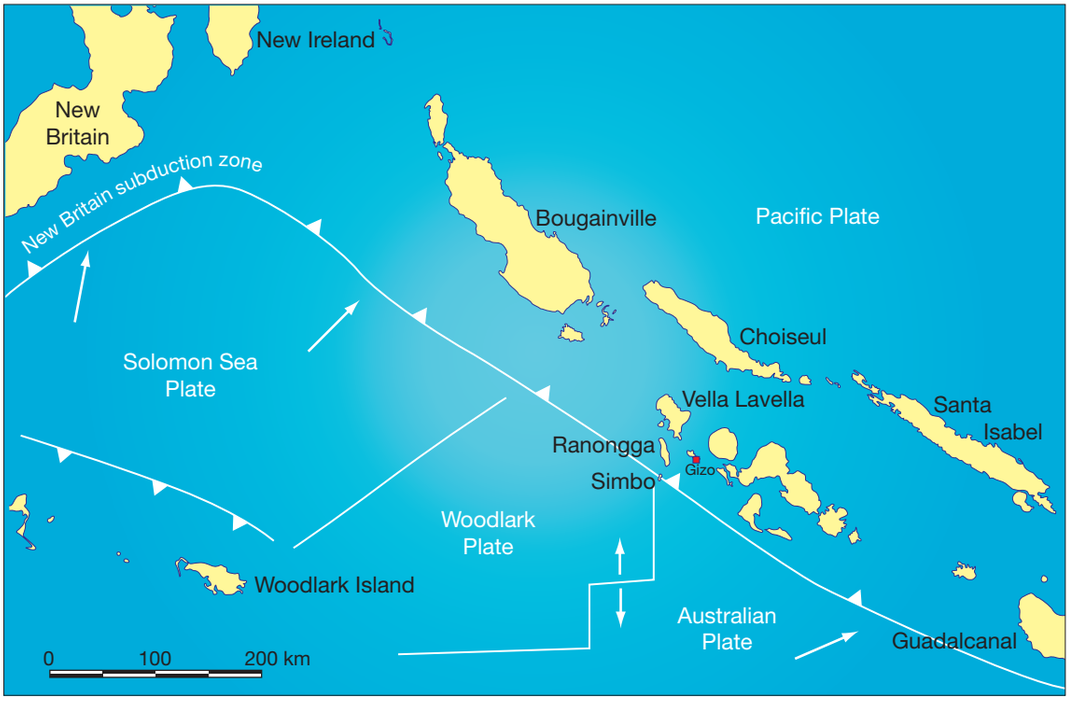

Figure 6.5 Plates on which Solomon Islands is situated

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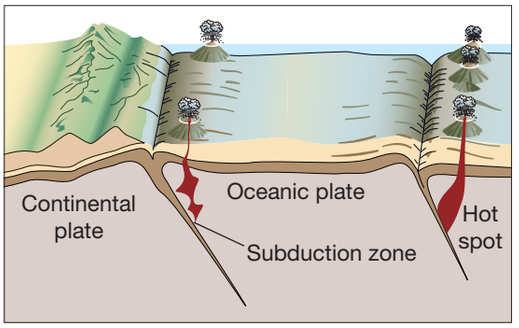

Figure 6.7 The area where two plates meet

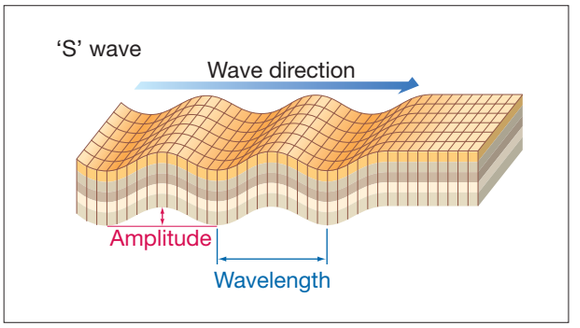

Figure 6.8 The 'waves' formed by an earthquake

Activity 4

Copy the diagram in Figure 6.3 on page 89. Label the Woodlark Plate (this is in place of the **continental plate** label in the figure) and the Pacific Plate (in place of the **oceanic plate** label in the figure). Mark the positions of Simbo and Ranongga on the diagram.

3 Earthquakes

Earthquakes usually occur at the meeting points of plates. An earthquake occurs when one plate slides over or under another. This causes the rocks to move, like waves on water. The waves travel along the ground and, as they reach you, the ground moves up and down. It may even be difficult to stand up. Most earthquakes are so small that they are not felt by people, but big ones can destroy buildings.

Measuring earthquakes

Scientists can measure the strength of an earthquake in two ways. **Magnitude** is the strength of the earthquake where it starts in the crust. It is measured on the Richter scale, named after a scientist called Richter.

A medium earthquake is five on the Richter scale. An earthquake with a range of six to seven on the Richter scale is damaging. The Guadalcanal earthquake in 1977 measured 6.6. People were killed on the Guadalcanal Weather Coast area from landslides which buried villages and caused damage to homes. The Western Solomon earthquake of 2 April 2007 measured 8.1. It destroyed many buildings and also caused a huge tsunami that killed many people.

The second way to measure an earthquake tells you how much damage is likely to occur. This is called the Mercalli scale, and is shown in Figure 6.10. This scale is useful for people to know what damage has been caused to buildings and roads.

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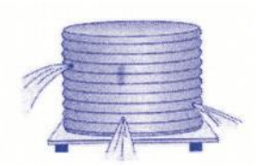
 **1** Very slight—not felt by people but recorded by instruments	 **2** Very weak—hardly noticed except on upper floors of tall buildings	 **3** Weak—hanging objects sway	 **4** Moderate—felt indoors by people not moving around. Walls may crack.
 **5** Fairly strong—buildings shake, small objects move, rumbling sound	 **6** Strong—people frightened, roaring sound. Damage to buildings. Water tanks leak.	 **7** Very strong—difficult to stand. Some houses collapse, windows break, electricity wires damaged, causing fires.	 **8** Destructive—people panic, buildings sway violently or fall down. Roads and bridges crack. Landslides
 **9** Very destructive—buildings, roads, pipes, bridges badly damaged	 **10** Devastating—major landslides, buildings destroyed	 **11** Catastrophic—ground cracks open, bridges fall	 **12** Major disaster—almost everything destroyed, trees fall, major landslides

Figure 6.9 Mercalli earthquake **intensity** scale

Activity 5

1 Which of the two ways of measuring do you think is most useful to ordinary people? Give reasons.

2 If you lived in an earthquake zone, what sort of buildings should you avoid making? Where would it be dangerous to make buildings?

3 Form groups, and choose one of the tasks below. Use the diagrams and information in Figures 6.9, 6.10 and 6.11 to prepare lists.

a Draw up a list of rules for earthquake zones such as Western Solomon Islands. The rules should tell people what to do or what not to do to avoid damage, injury or loss of life due to earthquakes.

b Write a list of things to do during an earthquake, giving advice to people about what to do if they feel an earthquake.

Compare your answers with those from different groups.

Figure 6.10 Earthquake damage in India

Figure 6.11 Road cracked by an earthquake

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4 Tsunamis

What is a tsunami?

Imagine you are living in a village near the sea. One day you are standing on the shore fishing. Suddenly you notice that the sea level is going down as if it was low tide, but it is not time for low tide. The sea goes down much faster than normal and the whole reef in front of you becomes dry. You can even see many fish stranded on the dry reef. What would you do?

This is exactly what people saw in the Western and Choiseul Provinces on 2 April 2007. Some people rushed down onto the beach to see what was happening, or to catch some of the fish. Others, who had also felt an earthquake and knew that the two things must be connected, ran away from the beach up the nearest hill. Soon those who had gone down to the beach started running away from the beach also, as the sea rose rapidly. It rose higher than the highest normal high tide, and continued to rise until it came into their houses, swamped their fields and even destroyed whole villages. This was a big tsunami which killed 54 people and destroyed dozens of villages. On page 87, you read what happened to Delster during this tsunami.

Those who thought it was connected with the earthquake were right. That morning the land had moved violently along a **fault** in the Earth's surface, under the sea less than 100 kilometres south-west of Gizo Island. Simbo moved down and pushed Rannonga upwards. This caused a series of huge waves in the sea above the place where the Earth moved. This is called a tsunami. The waves moved towards Gizo and Simbo, the nearest islands, and then right across the parts of Western and Choiseul Provinces facing the west.

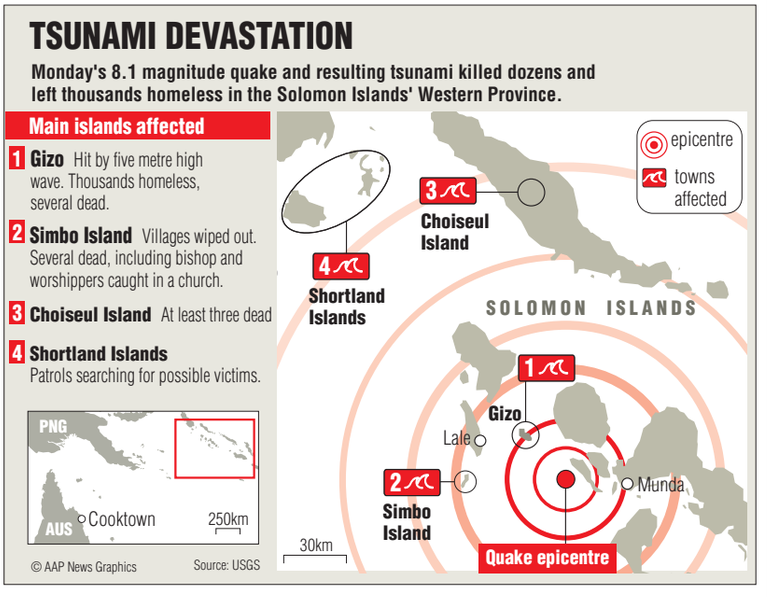
Following is a newspaper report written at the time of the tsunami.

Western Solomon's Tsunami Disaster, 2nd April 2007

At least 54 people lost their lives in the Solomon Islands after a very big earthquake of magnitude 8.1 shook the western part of the country on the morning of 2 April 2007, causing a tsunami.

The quake took place at 7:39 a.m. Solomon Islands time, causing major damage to the resort town of Gizo, the Western Provincial Headquarters.

The first quake was immediately followed by two more of magnitudes 6.7 and 6.4. The quakes were measured at a depth of 10 kilometres (6.2 miles) at a distance of 345 kilometres (215 miles) west-north-west of the Solomon Islands' capital of Honiara, on the island of Guadalcanal.



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Around 2000 people, or 10 per cent of the population, in the provincial capital of Gizo lost their homes, while some 500 houses may have been damaged or destroyed. Reports from other islands suggest similar or worse levels of damage.

The quakes sent waves three metres high into Gizo shops and homes, and knocked out power and some communications. Property damage is estimated in the millions of dollars, and the death toll is expected to rise.

There are reports that Gizo Hospital, Gizo church and Gizo Hotel have suffered damage. The Gizo Hotel reports that all residents and guests have moved to higher ground.

The Provincial Disaster Office in Choiseul Province evacuated people from coastal areas when the tsunami warning was issued.

Sasamunga Hospital in Choiseul Province was partly flooded and large parts of south-west Choiseul Province have also been affected, while 15 houseswere reportedly swept away in Simbo.

'The warning was the earth **tremors**,' Premier of the Solomon's Western Province Alex Lokopio told New Zealand National Radio. 'It shook us very, very strongly and we were frightened, and all of a sudden, the sea was rising up.'

Map of Gizo. The arrows show the direction the tsunami came from.

Gizo residents are sheltering in hills around the island's main town, for fear of another tsunami.

Many villages in the country's remote Western Province reported people being drowned as waves swept over their homes.

It is reported that most survivors moved to the hills and have not returned.

Roads are destroyed and there has been heavy damage to phones and electricity. Many people will be sleeping outdoors and are not expected to return to their homes yet. There are no accurate figures yet about the number of people who may be missing.

Fresh water is in short supply in some areas, while temporary, localised food shortages have been reported. Some of the affected areas are so isolated they can only be reached by boat.

The Pacific Tsunami Warning Centre in Honolulu issued a tsunami warning for much of the Pacific, including Australia, Papua New Guinea and Indonesia. There have been reports of damage in Papua New Guinea to the west of the Solomons, but no loss of life.

A tsunami watch was issued for New Zealand, the Philippines, American Samoa, Guam and Fiji.

BBC News website, 2 April 2007.

Whole villages have been flattened.

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Activity 6

Read the newspaper report on pages 94–95 and answer the questions.

1 In what kinds of places are people likely to be in most danger during tsunamis? Why?

2 What was the strength of the earthquake that caused the tsunami?

3 What sort of damage did the earthquake cause to Gizo town?

4 How many people were reported homeless as a result of the destruction from the tsunami?

5 What kinds of problems do you think people faced after the tsunami?

6 How high were the tsunami waves?

7 Where did the people take shelter during the tsunami and why do you think they went there for shelter?

Activity 7

Look at the map of Gizo Island and the photograph in the newspaper article.

1 Why was only one side of the island affected?

2 Why would people find it hard to run away?

3 From what you have just read:
   a What warning of the tsunami did people in Gizo have?
   b Why did people in Gizo and Simbo have less warning than people in other parts of Western Province?

4 What might people in Western Province do to make sure that this kind of damage does not happen again?

Why are tsunamis so destructive?

From where a tsunami starts, waves travel outward in all directions. The height of a wave is measured from the bottom to the top. The length is the distance between the top of one wave and the top of the next. As Figure 6.12 shows, a tsunami has a much smaller wave height in the open sea, and a very long **wave length**, often hundreds of kilometres long. As it approaches land, where the sea is less deep, the bottom of the wave hits the bed of the sea and the wave increases in height and violently crashes onto the shoreline. There may be more than one wave and the wave coming after the first one may be even larger. Luckily, the tsunami which struck Gizo travelled slowly.

The largest tsunami in recent times started in the sea south of Java in Indonesia and caused huge waves which spread very rapidly to hit the coasts of Indonesia, Malaysia, Sri Lanka, India and even East Africa. Most people did not have time to escape. Tens of thousands of villages and even small towns were destroyed, and 225 000 people in 11 countries were drowned.

What to do before and during a tsunami

Signs of an approaching tsunami

There is often no advance warning of an approaching tsunami. However, since tsunamis are caused by earthquakes, an earthquake that happens near the sea may indicate that a tsunami will shortly follow.

The first sign of a tsunami that can be seen is when the water along the shoreline moves out to sea suddenly. Areas which are usually covered with water become dry. However, this warning arrives only a very short time before the waves, which normally arrive only seconds or minutes later.

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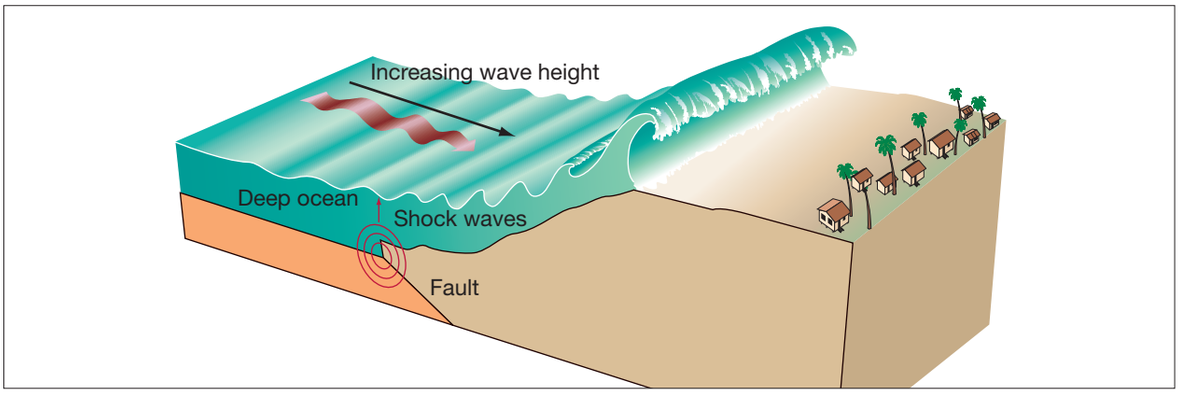

Figure 6.12 Waves of a tsunami increasing in height as they reach the shore

The effect of a tsunami ranges from one that is too small to notice to one that is very destructive.

Areas with low coastlines are in great danger. Drowning under the waves is the most common cause of death associated with a tsunami. Tsunami waves can destroy houses and other buildings as well as roads, bridges, wharves and other structures. Other **hazards** include flooding, contamination of drinking water, and fires from electrical lines being damaged.

Figure 6.13 Tsunami destruction in Indonesia 2004

Figure 6.14 Tourists on the beach in Thailand running away from an approaching tsunami wave. Notice how the water has gone down in front of the wave.

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Warnings and prevention

A tsunami cannot be prevented or easily predicted, but there are some warning signs of an incoming tsunami.

Tsunami warning signs

1 Water moving out to sea from the coast before the wave's arrival.

2 Tsunami warning systems: tsunami regions with a high risk of tsunami may use tsunami warning systems to detect tsunamis and warn the general population before the wave reaches land. This can be done with the help of computers, but it is very expensive.

3 Animals fleeing: an early warning comes from animals, which sense danger and flee to higher ground. People, on the other hand, head down to the shore to investigate.

Reducing the effects of tsunamis

Activity 8

In groups discuss the following ideas about how to reduce the effects of tsunamis. Complete a table, like the one below, to show the advantages and possible problems of each method of reducing the effects.

Ways of reducing the effects of tsunamis

Method	Advantages	Possible problems

While it is not possible to prevent a tsunami, in some countries where tsunamis are common, some steps have been taken to reduce the damage caused on shore. These measures include the following.

1 Building of tsunami walls. Walls are built in front of coastal areas which have a high population to prevent tsunamis from causing damage.

2 Planting trees. Trees planted on shorelines can reduce tsunami effects. The trees can block the waves and reduce their strength before reaching buildings.

3 Education and awareness. The students in one primary school in Asia were all saved during the 2004 tsunami because they had just learnt about the signs of a tsunami and ran up the hill when everyone else was running down to the beach. A schoolboy in Samoa was given a medal by the President for warning his village when the water suddenly went dry before the tsunami in 2009. A very good way to reduce deaths and injuries is to teach all school children and adults in villages near the sea about the warning signs of a tsunami and what to do when they feel or see these signs.

4 Radio and newspapers: Warnings about tsunamis can also be broadcast on the radio or television or printed in newspapers.

5 Position of buildings. People who live in villages near the sea should think about where to put houses. It is best to build on land sloping up from the beach, not on flat land or land behind a sand bar, which may be lower than the sea. Important buildings like hospitals, clinics, schools and churches should be built at least 800 metres from the shoreline.

6 Types of buildings. Most tsunamis have a wave height of around two metres, so houses should be built with a floor that is three metres or more above the high-water mark. It helps to have concrete posts and a concrete base for a house as these will less easily be washed away.

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Tsunamis: What to do

Warning signs

Usually people on the beach can see the water going out a long way. The seawater then comes back very fast and covers the beach. This can happen more than once. If you live near the coast, you need to know what to do if you feel a strong earthquake, if there is an unusual change in the sea level, or if you hear a roaring sound.

Before and during a tsunami

The following are guidelines for what you should do if an earthquake occurs and you are in a coastal area.

- Turn on your radio to learn if there is a tsunami warning. Usually a tsunami will arrive within 20 minutes of the earthquake or other warning sign.
- Move to a safe place immediately: inland to higher ground or more than 800 metres from the beach. Stay there for several hours.
- Stay away from the beach. *Never* go down to the beach to watch a tsunami come in. If you can see the wave, you are too close to escape it.
- If the sea suddenly goes down, away from the shoreline, this is nature's tsunami warning. You should move away immediately.

After a tsunami

- Stay away from flooded and damaged areas until officials say it is safe to return.
- Stay away from debris in the water; it may be a safety hazard to boats and people.
- Save yourself—not your possessions.

5 What is a volcano?

Different countries have traditional stories and beliefs about volcanoes.

Figure 6.15 Vulcan, Roman god of fire

Volcanoes are named after Vulcan, the Roman god of fire. The Romans believed he lived under an island called Vulcano in the Mediterranean Sea. This island is a volcano. They thought he was a blacksmith—a person who makes things by heating metals—and that he made weapons for the other gods. When Vulcan made these weapons, the Earth would shake and the island would **erupt**.

Figure 6.16 A volcano erupting

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In Polynesia, people regarded the eruption of volcanoes as the action of Pele, Goddess of volcanoes. She erupted whenever she was angry.

A volcano is a hill or mountain formed when molten rock comes to the surface and becomes solid. The molten rock and other materials come to the surface of the Earth through a **vent** or crack in a process called an eruption.

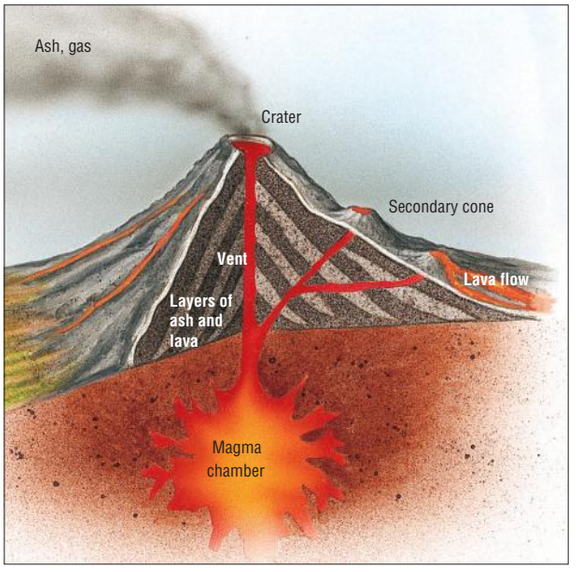

Figure 6.17 The structure of a volcano

Activity 9

Make your own copy of the cross-section of a volcano in Figure 6.17. Colour and label the diagram carefully. Use it to answer the questions.

1. Magma and lava are both names for molten rock. What is the difference between magma and lava? Think of where each is found.
2. What other material is erupted out of a volcano?
3. What is the name of the hole at the top of a volcano where the lava comes out?

Major volcanoes: locally and around the world

Activity 10

Use the map in Figure 6.18 to help answer the questions.

1. Name any volcano in the province (or state) you come from.
2. Which two provinces/states have the largest number of volcanoes?
3. Identify how many of the volcanoes are on land and how many are under the sea.
4. Are most of the volcanoes separate islands or part of the larger islands?
5. What is the total number of volcanoes?
6. An active volcano is one which sometimes still erupts. In which province/state are most of the active volcanoes?

Activity 11

1. Using the map in Figure 6.19 and the world map in Appendix 3 of this book, state which countries the volcanoes are located in and the capital city of each country.
   - Mt Vesuvius
   - Mt Karakatoa
   - Mt Pelée
   - Mt Manua Loa
   - Mt Pinatubo
   - Mt St Helens
2. Name any two volcanoes that are close to Solomon Islands. Which countries are they located in?

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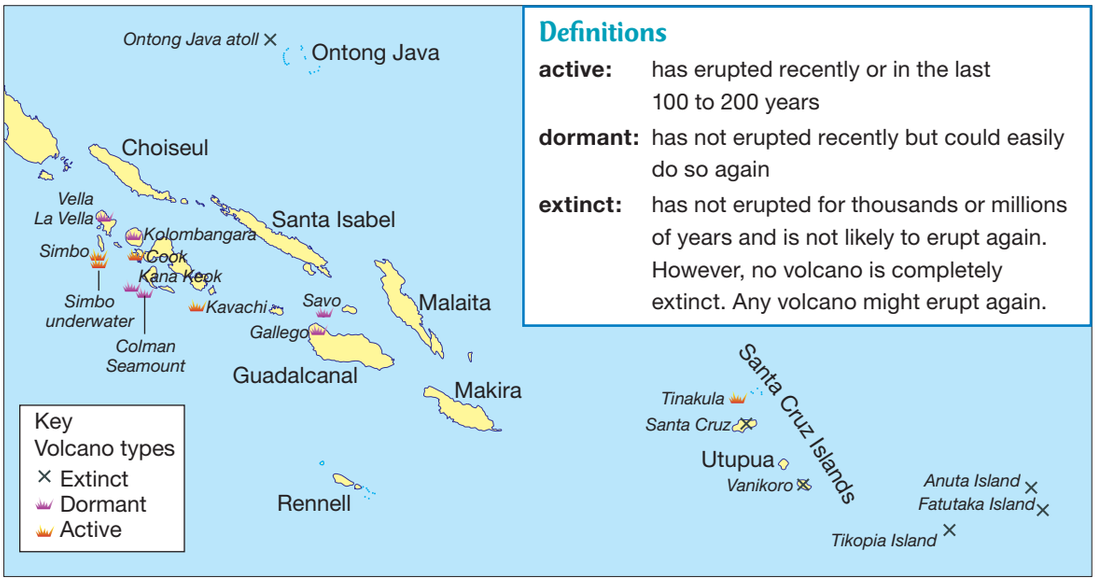

Figure 6.18 Major active, dormant and extinct volcanoes in Solomon Islands

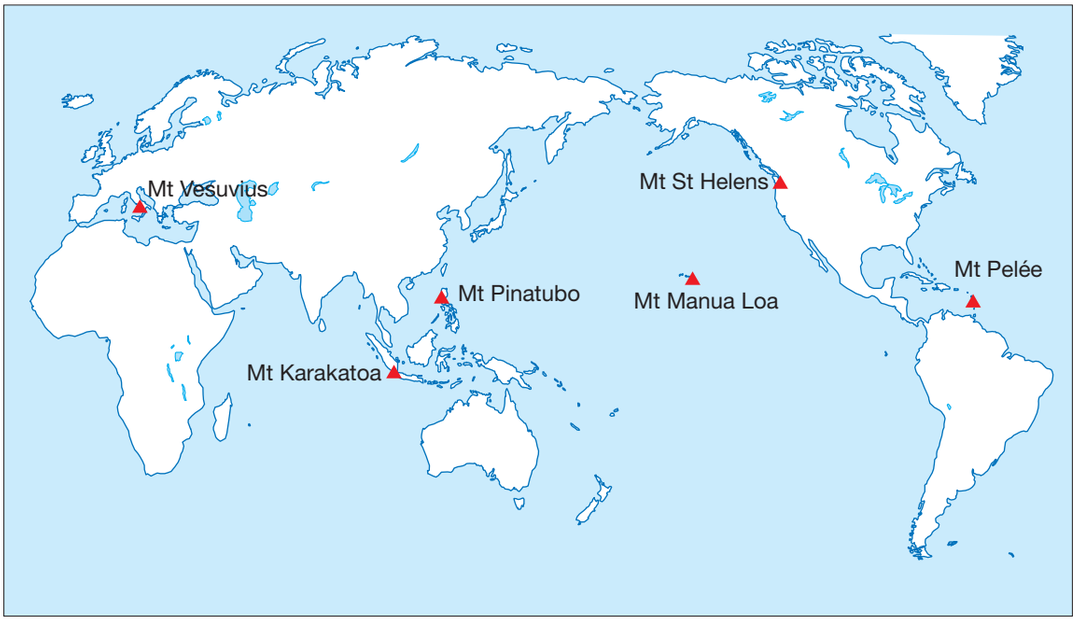

Figure 6.19 Major volcanoes around the world

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How volcanoes are formed

Look back at Figure 6.17, which shows the structure of a volcano.

As we have seen, the rocks or magma in the Earth's mantle are very hot, but the pressure of the rocks above prevent them from becoming completely liquid. In places under the ground where there are cracks or weak spots in the Earth's crust, the pressure becomes less and this magma turns into hot liquid rock and escapes to the surface. This escape is often under pressure, resulting in volcanic eruptions, where molten rock forms a mountain and pours down the mountainside (see Figure 6.21). When magma erupts through the Earth's surface like this, it is called lava.

Lava can be thick and slow-moving, or thin and fast-moving. Rock also comes from volcanoes in other forms, including **ash** (finely powdered rock that looks like dark smoke coming from the volcano), **cinders** (bits of broken lava), and **pumice** (lightweight rock that is full of air bubbles and is formed in explosive volcanic eruptions—this type of rock can float on water).

Features and types of volcanoes

Most volcanic mountains are shaped like a **cone**, similar to the one in Figure 6.20. They are built around an opening that connects with the molten rock or magma below the surface of the Earth. The top of the opening is called a **crater**.

As the map in Figure 6.18 shows, scientists put volcanoes into three groups: active, dormant, or extinct.

Active volcanoes

A volcano is active if it erupts continuously or frequently and is predicted to have more eruptions in the future.

Figure 6.20 The volcano of Stromboli. Notice the smoke coming out of the crater and the small settlement on the side where the lava does not flow.

Figure 6.21 Lava flowing down the side of Stromboli

There are many active volcanoes in the world. One of the most famous is Mount Stromboli in Italy. Tinakula volcano in the Temotu Province in Solomon Islands is also an active volcano. It erupts quite regularly and the fire from the molten rock coming out can often be seen from Santa Cruz or Reef Islands.

Some active volcanoes are under the sea. Kavachi, south of Vagunu island in Western Province, has no island above the surface but at night you can sometimes see molten rock glowing under the water and the water boils. Traditionally it is named after a sea god, Kavachi, and is called Rejo te Kavachi or Kavachi's oven.

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Figure 6.22 Tinakula, Temotu

Figure 6.23 Kavachi erupting from under the sea

Figure 6.24 The hot springs on Savo

Dormant volcanoes

If a volcano has not erupted for a long time and is now inactive, it is classified as a dormant, or sleeping, volcano.

Savo is a dormant volcano as it has not erupted for a long time, although there are custom stories about eruptions. It is still hot at the top and has hot springs coming out of the ground and flowing down the sides to form hot streams. Megapodes like to live there because they can bury their eggs in the warm sand. The water in the springs is hot enough to boil a megapode egg or a potato.

Extinct volcanoes

If a volcano has no record of eruption, it is regarded as extinct. However, some so-called 'extinct' volcanoes can erupt suddenly without warning. For example, Mount St Helens in north-west United States of America

Figure 6.25 The eruption of Mount St Helens in 1980. It reduced the height of the mountain by 390 metres and formed a crater three kilometres wide.

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suddenly erupted after a very long period of inactivity. Mount Pinatubo in the Philippines was dormant for about 460 years until its big eruption in 1991. Mount Lamington in Papua New Guinea was thought to be extinct but suddenly erupted in 1951, killing 3000 people.

Figure 6.26 Mt Lamington erupting in 1951

Activity 12

1 Which of the three types of volcano do you think are most dangerous? Give your reasons.

2 Do you think the people of Savo are completely safe?

3 Would you be completely happy living on an extinct volcano?

4 Explain why you think the rock deep down in the Earth's crust is in partly liquid form and the rock on the surface is in solid form?

Calderas

In Solomon Islands Tikopia, Anuta, Vanikoro and Santa Cruz all lie on extinct volcanoes. At some time in the past Tikopia erupted with a huge explosion, blowing off the top part of the mountain. This left behind a huge hole or crater, called a **caldera**, which became filled with water to form Lake Teroto. This is surrounded on three sides by the high crater walls. On one side the sea has eroded away parts of the crater wall so the lake is only separated from the sea by a low sand bar. During Cyclone Zoe in 2002 the sea swept over this and made the lake salt. Many volcanoes, including Kolombangara in Western Province, have wide craters or calderas at the top formed by big explosions.

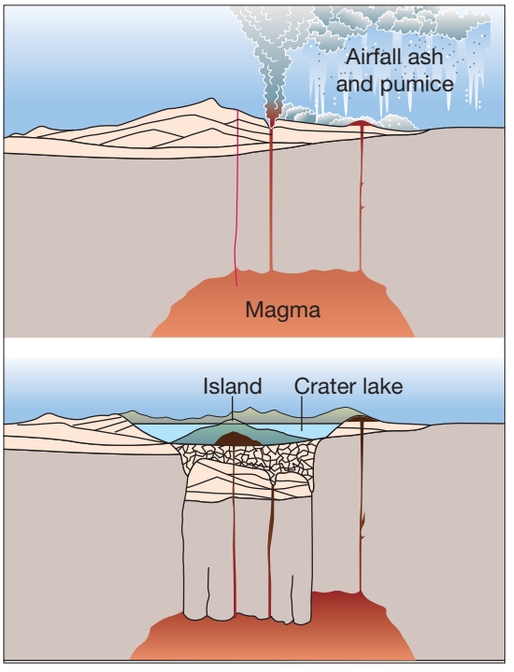

Figure 6.27 How a caldera is formed

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Activity 13

Describing photographs or drawings

A photograph or drawing can be divided into five areas as marked on Figure 6.28. The bottom can be called the foreground, as these areas are closest to the person who took the photograph. The top is called the background, as these areas are furthest from the person who took the photograph.

1 Using what you read about Tikopia on page 104, and the words on the photograph, write a description of Tikopia as you see it in the photograph. Mention where the hills are (this is the crater), where the lake and sea is and what kind of vegetation you can see.

2 What would be some of the problems of living on an island like Tikopia?

Figure 6.28 Tikopia

Volcanic plateaus

In other places, huge amounts of lava flow out gently to form a wide lava plateau, or flat area of high ground. Ontong Java atoll is on top of a huge lava plateau which is larger than Papua New Guinea, now covered by the sea. It is thought to be formed by the largest volcanic eruption in the last 200 million years!

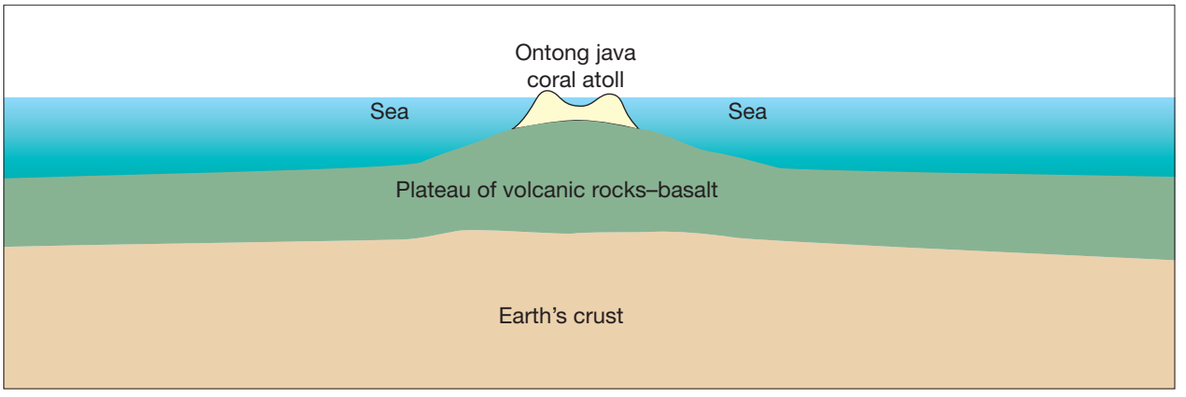

Figure 6.29 Ontong Java atoll sits on a huge lava plateau.

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Effects of volcanoes

Types of volcanic hazards and their effects

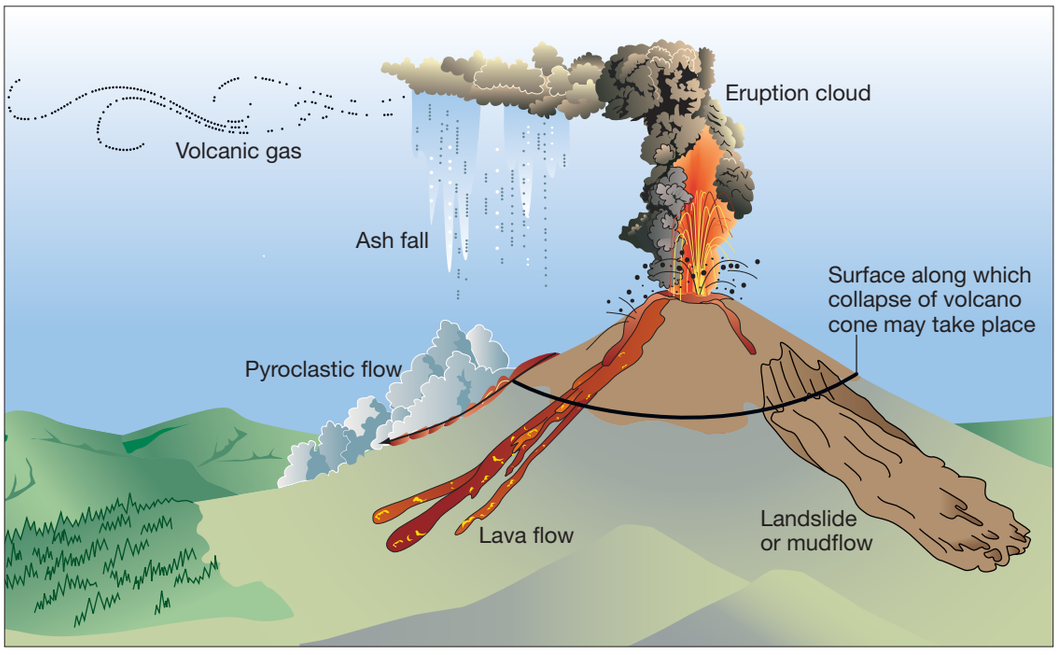

Figure 6.30 Hazards caused by volcanoes

Activity 14

Read the following text (pages 106–108) and design a poster warning people about the hazards associated with volcanoes.

Hazards are natural features which cause danger to human lives. Volcanic eruptions can cause damage and loss of life, so they are hazards.

People who live close to volcanoes face all kinds of volcanic hazards when a volcano erupts. Some of these hazards are shown in Figure 6.31.

Gases are released from volcanic areas. They are poisonous and can kill people.

Blast effects happen when powerful eruptions blow the top off the volcano, as once happened in Tikopia. In 1883 the top of Karakatau Island in Indonesia blew off, causing tsunami waves which killed 30 000 people. The explosion was the loudest sound ever heard by human beings and was heard on the other side of the world. The dust made it dark at midday and affected sunsets all over the world for more than a year.

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Lava flows can bury gardens and plantations and can cause major damage to buildings and roads from the heat (sometimes in excess of 10 000 °C) and the force of the flow.

Figure 6.31 Lava flow from Manam Island, PNG

Pyroclastic flow is the most dangerous hazard. It consists of a hot, fast-moving cloud of rock and ash from an eruption. It flows down the mountainside at a very high speed and destroys everything in its way. People can die from burns or be buried alive. In 1951 Mt Lamington, in Oro Province of Papua New Guinea, erupted with a pyroclastic flow that killed up to 3000 people. There is a custom story on Savo that a lava flow, probably a pyroclastic flow, once killed all the people on the island.

Figure 6.32 Pyroclastic flow: Lava blocks tumbling down Tinakula in 2006

Mudflows (or lahars) are produced when heavy rains mix with volcanic materials (not just mud) or where an eruption takes place in a lake or onto snow and ice. Heavy mudflows can cause destruction and even kill people. Figure 6.34 shows a mudflow in the Rabaul area of Papua New Guinea in 1994. In Indonesia in 2006 a mud flow started and lasted for years. It has buried eight villages, including the houses of 11 000 people.

Figure 6.33 Mudflow in Rabaul in 1994

continued on page 108

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Ash clouds may be carried 40 kilometres or more from an erupting volcano and settle over the land and houses, forming deposits that may be metres thick. Ash can destroy power and telephone lines, block roads, block the engines of jet aircraft, damage crops, contaminate water and affect human health. Ash covered the whole of the town of Rabaul in Papua New Guinea in 1994. Many buildings collapsed and roads were covered deep in ash. Luckily, people had been warned, and nearly all escaped, but the whole town has now been moved to Kokopo.

Figure 6.34 Volcanic ash damaged buildings in Rabaul in 1994.

Benefits of volcanoes for people

Although volcanoes create hazards for people, they also bring us benefits. Some of these include fertile soils, new land, electrical power or energy, mineral resources, industrial products, recreation and tourism.

Fertile soils

Volcanic materials like ash and lava make the soil more fertile for the growth of plants and crops because they add nutrients or plant foods to the soil. Volcanic islands in Solomon Islands such as Simbo, Kolombangara, Savo and Tikopia have very fertile soils. In Tikopia, people do not need to practise shifting cultivation by moving their gardens regularly, as in other parts of Solomon Islands. Some areas were cleared for taro plots generations ago and are still being used.

New land

Volcanoes can also build new land. Many of the islands of Solomon Islands were formed by volcanic activity. Kavachi is trying to form a new island today and an island sometimes appears above the sea before being washed away.

Electrical power

The internal heat from volcanoes is used to produce electric power. For example, the Californian city of San Francisco depends on electricity produced from volcanic heat and New Zealand also produces electricity this way.

Mineral resources

Many valuable minerals mined in the world come from magmas from extinct volcanoes. Such minerals include copper, gold, silver, lead and zinc.

Industrial products

People use volcanic rocks as building materials. Pumice is used as a rough stone or abrasive for cleaning things. Some volcanic rocks also contain chemicals which are useful to industry.

Recreation and tourism

Volcanoes provide interesting and beautiful scenery for tourists to visit. Some countries build parks and monuments as recreation for people.

Many Solomon Islanders have visited the **hot springs** of New Zealand. There are a number of small tourist resorts on Savo where people go to see the hot springs and the megapode birds.

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Activity 15

Copy the text and complete the gaps with the correct word from the box.

magma	openings	gas
ash	physical	lava

Volcanoes are part of the _____?_____ environment. When a volcano erupts, underground molten rock called _____?_____ pours through its main _____?_____ before reaching the surface. Steam, _____?_____ and _____?_____ are often thrown into the air. The molten rock runs down the side of the mountain and cools to form _____?_____.

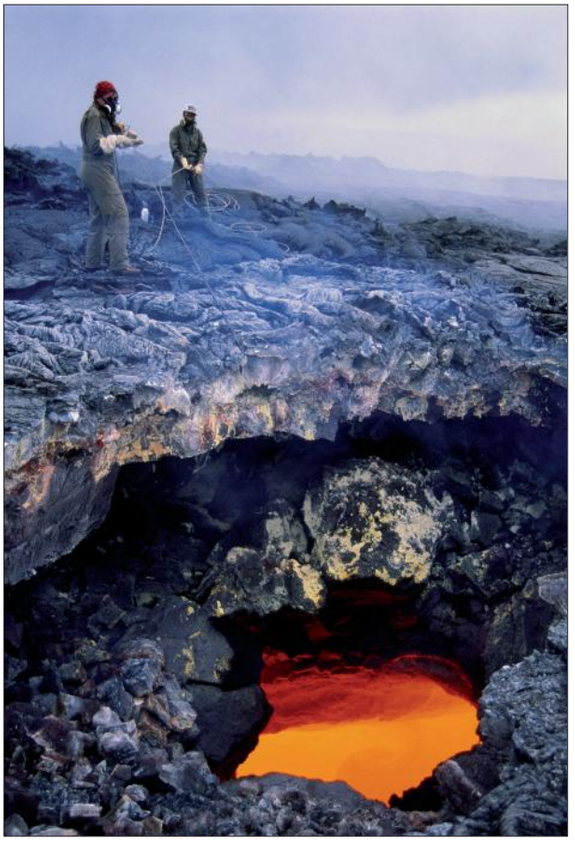

Figure 6.35 Scientists regularly take samples from active volcanoes to get information on the state of the volcano.

Monitoring volcanoes

It is very difficult to predict when a volcano will erupt. Scientists measure the temperature within the rocks. If the temperature increases, it may mean that an eruption is about to happen, so the scientists can warn people.

Study of the volcanoes around Rabaul in Papua New Guinea helped to give warning of the eruption in 1994. A hundred thousand people were moved away and only five were killed.

People have also been warned by the unusual behaviour of animals: running away or going to hide. Animals seem to sense volcanic activity and earthquakes better than we do.

What to do if a volcano erupts

If a volcano erupts there is not much you can do except run away. That is why people were evacuated from Rabaul in 1994.

However, if you live in a volcanic area there are things you can prepare in case an eruption occurs. You can prepare an emergency kit containing first aid, food, water and torches and you can make sure you know a route by which you and your family can escape.

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Glossary

active (volcano) a volcano which regularly erupts

ash solid material thrown out of a volcano

caldera a very large crater caused when the top of a volcano is blown away by an explosion

cinders solid, burnt material thrown out of a volcano

continental plate a plate which forms a large piece of land or continent

cone round, steep-sided hill—a common shape for a volcano

crater the hole at the top of a volcano where the lava comes out

crust outer layer of the Earth

dormant (volcano) a volcano which has not erupted for a long time but might erupt again

erupt to burst out with violence

extinct (volcano) a volcano which has not erupted for hundreds or thousands of years and is not likely to erupt again

fault crack in the Earth's crust where the rocks on each side are moving in different directions

hazard an event or thing which may cause danger to people

hot springs hot water flowing out of the ground along a fault or near a volcano

inner core the rocks in the centre of the Earth

intensity measure of the amount of damage caused by an earthquake

lava molten rock which comes from a crack in the earth and moves across the land surface

magma very hot or molten rock inside the Earth

magnitude measurement of the strength of an earthquake

mantle thick layer of the Earth beneath the crust

molten hot and flowing like a liquid

mudflow mud flowing over the ground where rain or other water mixes with volcanic materials

oceanic plate a plate which forms the bed of the ocean

outer core rocks between the centre of the Earth and the outer crust

plate boundaries the lines where one plate meets another and friction often takes place

plate tectonics the idea that earthquakes and volcanoes are formed where two plates meet

pumice lightweight rock which comes from a volcanic eruption

pyroclastic flow ash and rocks that flow down the side of a volcano at great speed

Richter scale a scale which measures the power of an earthquake

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Ring of Fire the area around the Pacific Ocean where many volcanoes occur

subduction zone the area where one plate moves under another one

tectonic plate layers of rock at the Earth's surface which are separated by cracks or faults along which the Earth moves

tremors small movements of the Earth's surface

tsunami powerful waves that occur when the earth under the sea moves due to an earthquake

vent the hole in the centre of a volcano out of which lava and other substances burst or erupt

wave length the distance between the top of one wave and the top of the next

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Chapter 7

Rivers and Streams

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Activity 1

Visit a river or a stream near your school and discuss the following questions with your classmates. When you have decided on the answers, write them in your exercise book.

1 Where does the river or stream begin and where does it end?

2 Where does the water in the river or stream come from?

3 Which direction does the river or stream flow and does it flow faster in some places than others? Can you explain this?

4 What types of materials are carried by the river or stream and where are they dropped?

1 The water cycle

The Earth's water does not stay in the same place. There is a continuous movement of water from the Earth's surface to the air or atmosphere, and back again. Along the way, water may become a liquid, a gas, or even a solid. This continuous movement of water from the oceans to the atmosphere, on to the land and back to the oceans is known as the **water cycle**.

These are the steps of the water cycle:

1 Heat from the sun provides **energy** for the water cycle to operate.

2 Heat from the sun **evaporates** water from the sea, the land, lakes and rivers. Water that is evaporated becomes a gas called **water vapour**.

3 Due to heat, water is lost from plants and also evaporates into the atmosphere. This process is called **transpiration**.

4 As hot air expands, it rises and cools. Water vapour **condenses** onto fine dust particles to form tiny water droplets in the atmosphere. Billions of these droplets form clouds.

5 As these water droplets combine, they become too heavy to float in the atmosphere. As a result, they fall as rain. As they fall, some of the water may evaporate before it reaches the ground.

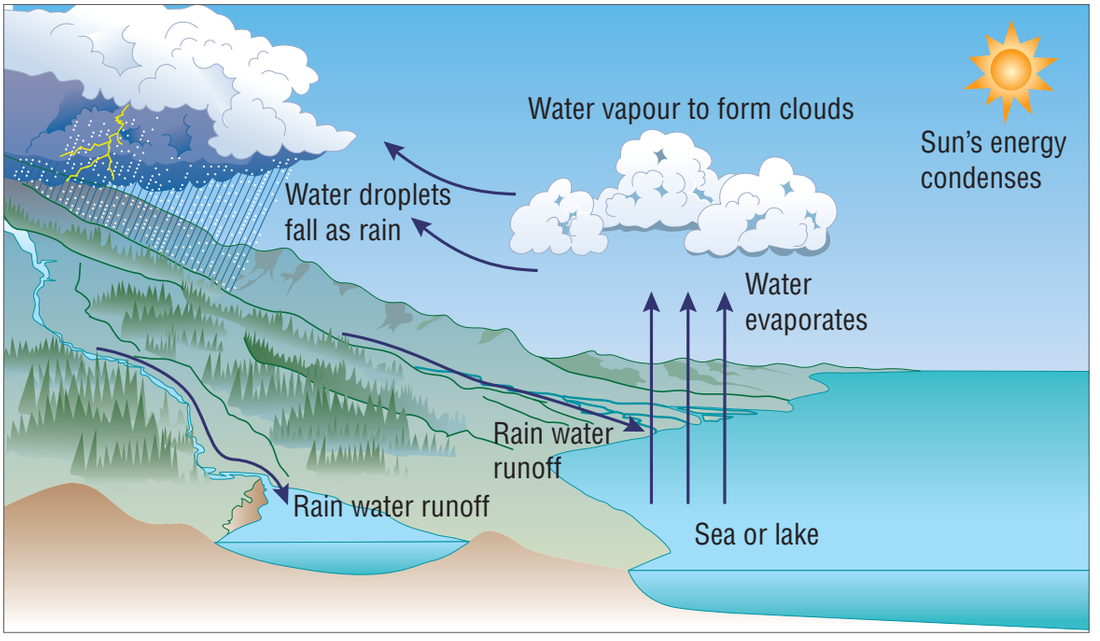

Figure 7.1 The water cycle

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Three things may happen to water once it reaches the Earth's surface:

1 It may sink into the ground, forming a source of underground water in the rocks below the soil, called the **water table**. This is the water we find when we dig wells.

2 It may be absorbed by plants and then transpired back into the air.

3 It may run over the land, as **runoff**. Through gravity this will run towards the lowest part of the land, forming streams and rivers.

Most of the Earth's rivers reach lakes and seas, where again water may be evaporated back into the atmosphere. In this chapter you are going to look at the last part of the water cycle, when the water flows over the land, forming rivers and streams.

Activity 2

Go outside any time it rains and observe parts of the water cycle. Answer the following.

1 Where does the rain come from?

2 Where does the water go when it reaches the ground?

3 If it flows along the ground:
- **a** Does it carry anything with it?
- **b** Does it dig or wear or wash away the ground in places?
- **c** Does it deposit anything on the ground?

What is a river?

A river or stream is a collection of surface water that flows in a **channel**. Streams are smaller than rivers. Rivers are part of the water cycle. They are formed from the collection of rain water that drops on the Earth's surface. The starting point of a river is called the river **source**. Some rivers have their source in a spring—a point where water flows out from the ground to the surface. This water comes from the water table. Other river sources originate from lakes, or runoff from rain water in the mountains.

The end point of a river is called the river **mouth**. This is usually where it flows into a lake or the sea. Smaller rivers that join larger ones are called **tributaries**. Rivers have two **banks**—two opposite sides where the width of the river ends (left and right bank). They have a **bed** (the bottom of the river) over which the water flows. The whole area occupied by a river and its tributaries is called a **drainage basin**. The high land separating one drainage basin from another is called a **watershed**.

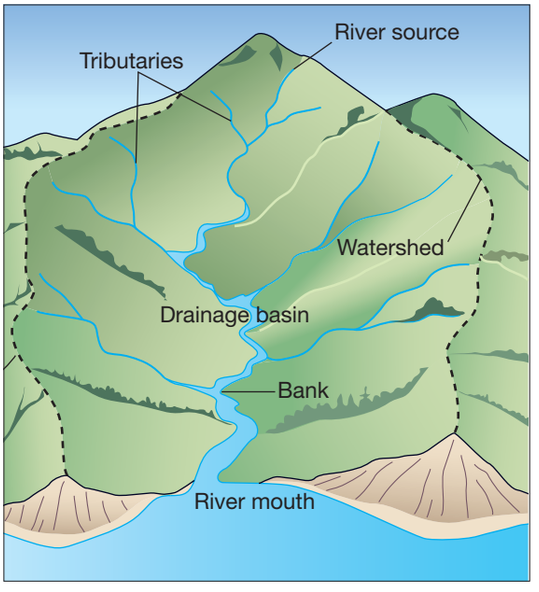

Figure 7.2 The different sections of a river

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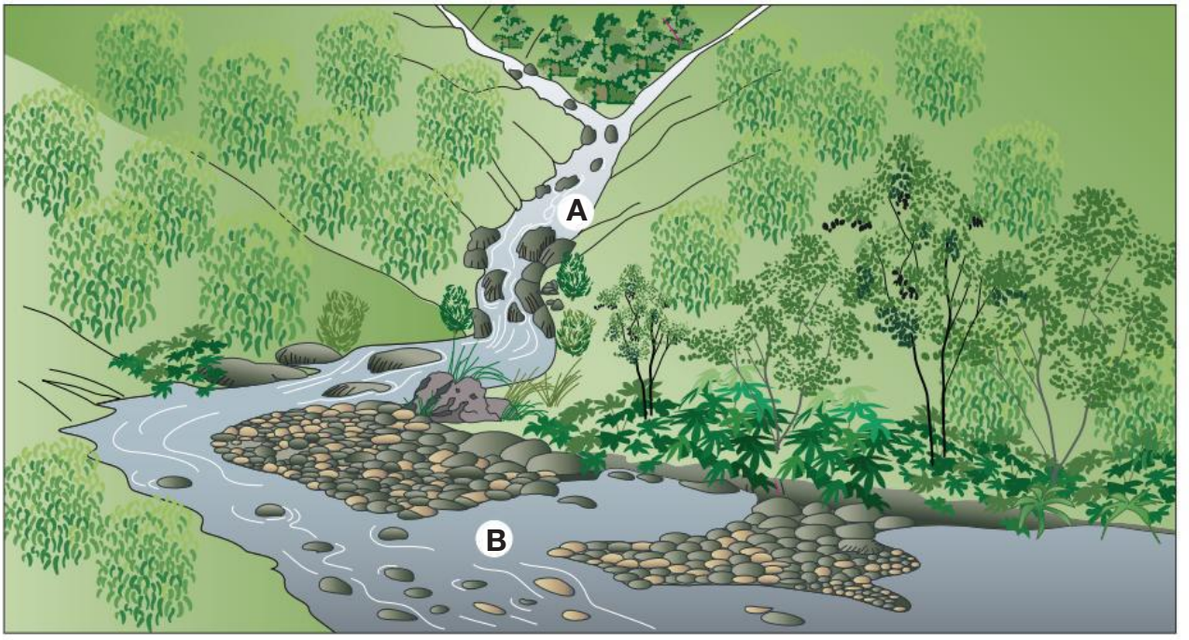

Figure 7.3 Streams are usually quite shallow, and are found in the upper course of rivers.

Activity 3

Look at the picture of a stream flowing in a small valley in a hilly area and answer the questions in your exercise book. Two sections are marked: A and B. Give reasons for each of your answers.

1. In which section do you think the stream is flowing fastest?
2. In which section do you think the stream is flowing most slowly?
3. In which section do you think the stream is wearing away its bed?
4. In which section do you think the stream is depositing material on its bed? What sort of material?

All rivers and streams have energy caused by the movement of the water. They can use this energy in three ways, as shown in Figure 7.3.

- At A the slope is steep so the stream is flowing fast. It has a lot of energy so it wears away or **erodes** its bed.
- Below A the stream is using its energy to carry away some rocks or soil eroded from the section above A. The material it carries is called its **load**.
- At B the stream is flowing more slowly because the slope is less steep. The stream does not have enough energy to carry away its load, so it **deposits** some of its load on its bed.

All rivers and streams do these three kinds of work all the time. If you look at a river or stream today it is never exactly the same as it was yesterday. When a river flows down from the mountains to the sea, it also changes the surface of the Earth. It wears away rocks or washes away the top soil, and moves sand and stones of all sizes, as well as other materials.

The river then drops these materials where the flow slows down and can no longer carry them. A flowing river continuously attempts to carve

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away all of the mountains or hills in its path to create a wide, flat valley where it can flow smoothly towards the ocean.

The three types of work which rivers and streams carry out affect the shape and size of the valleys where they flow. The three types of work are explained in more detail below.

Erosion

Erosion occurs in all rivers. Erosion is the wearing away of the river bed, river banks and channel as a result of river flow. Running water is very powerful. The water from rivers and streams has a lot of energy when it is travelling very fast. This energy can wear away the sides and banks of a river's channel as well as the river bed.

The faster the water flows in a stream, the heavier the stones it is able to carry. The dragging of stones along the river bed and sides also wears these away by friction. This is like rubbing a hard surface with sandpaper. In places rocks get caught in holes in the bed, called **potholes**. The water spins them around in the hole and the hole becomes deeper by friction.

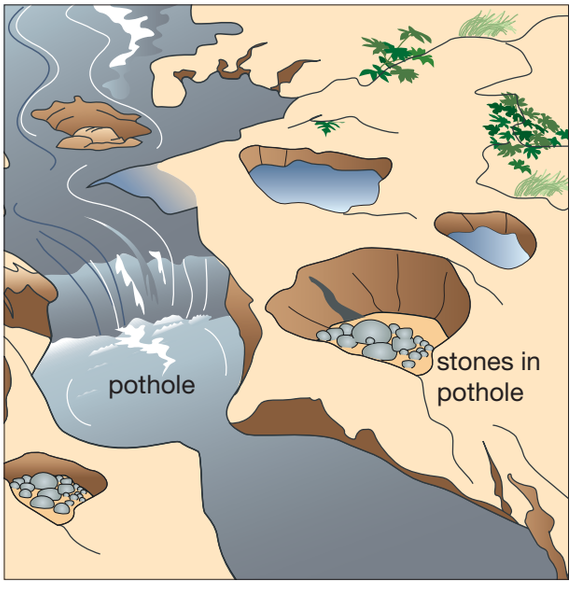

Figure 7.4 How a pothole is formed

As the stones and rocks move along, they also hit the river banks and the river bed, causing pieces of rock to break off. These processes gradually erode the river bed and channel sides, making the river wider and deeper.

Transportation of load

All the rivers in our islands carry eroded materials such as mud, sand, stones of many sizes, tree branches and leaves, all the way from the mountains down to the sea. These materials are called its load. The finer material is called **sediment**. The transportation of materials is a very important part of river flow. The size of materials carried by a river depends on the strength of its flow.

Where the flow of the river is fast, it has greater strength to move heavy materials. When it slows down, it drops the heavy materials to the floor or river bed and only carries materials that are light. Even a slow river can carry small grains of clay, as shown when the water is brown in colour. As the strength of flow increases, sand, gravel, and even rocks are washed away and moved downstream.

Figure 7.5 A river in Makira carrying a heavy load

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Deposition

Rivers drop materials they carry downstream along the river banks, flooded plains or at the river mouth, depending on where the river slows down. The pieces of material fall to the bottom and are deposited. Most of this **deposition** occurs in the plains.

Figure 7.6 Sediment is deposited along the sides of Guadalcanal River.

Activity 4

Re-read the explanations above of erosion, transportation and deposition. Then visit any stream or river. Even a gully where water flows when it rains will show you some of these things.

1. Try to suggest in which places each of these three types of work may be taking place. What evidence is there that the river or stream is:
   - **a** eroding its bed
   - **b** transporting material downstream or
   - **c** depositing some of this material on the bed or banks?
2. Visit the same place again in a few days' time. Can you see any changes in the stream or river? You might look for changes in the amount of water, the bed, the banks or the load. Is the material being carried by the stream or river in exactly the same place as it was before?

Activity 5

Think of any river you know and discuss the following questions with your classmates. Any of the rivers flowing from the hills or mountains of our main islands (Guadalcanal, Malaita, Isabel, Makira, New Georgia, Choiseul, Kolombangara) will show the same pattern.

1. Where does the river start from?
2. What shape is the **valley** there?
3. What happens to the shape and width of the valley as it comes near to the sea?
4. What is the shape of the valley just before it enters the sea?

2 Stages of a river

The three processes above—erosion, transportation of load, deposition—can be found all the way along a river. However, certain processes are more commonly found in certain sections of the river. Rivers can be divided into four sections. In each section, certain features are common.

The upper course

This is where the stream begins. As you can see in Figure 7.2, this is usually in a hilly or mountainous area. Here, the river or stream flows down steep slopes so it has plenty of energy. Its main work is erosion of its bed and it flows in a steep sided or v-shaped valley. This kind of valley can be found on almost any of our islands.

Upper courses often contain **gorges** and **waterfalls**, which are both formed where the slope is steep and the river has a lot of energy for erosion.

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Gorges

A gorge is a steep-sided river valley which is very narrow and deep. Most gorges have rocky sides. The river cuts this deep valley by erosion. Gorges are created over thousands of years.

Figure 7.7 The Xiling Gorge, China

Figure 7.8 Lunga gorge on the middle part of the Lunga river beyond Mt Austin near Honiara.

Waterfalls

A waterfall is a steep fall of a body of water in a river channel. Waterfalls can occur when a river reaches the edge of a **cliff** or **plateau**. They are usually found in sections where the river flows along steeper slopes. You can see this in Figure 7.10.

A waterfall can develop where there is a band of harder rock overlying softer rocks. The river wears away the softer rock more quickly than

Figure 7.9 A waterfall in Guadalcanal

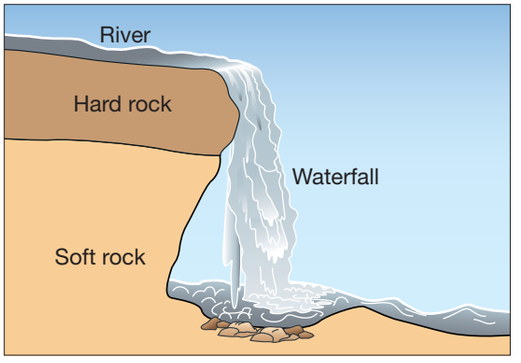

Figure 7.10 Cross-section of a waterfall

the hard rock. As a result, a step is formed where the soft rock used to be. Water falls over this step.

The middle course

In this section the slopes are less steep and the river begins to widen its valley by eroding its sides and banks. It does not have enough energy to transport its whole load so it deposits some of its load on its bed or on the land on either side. The valley becomes wider and flat-bottomed, with some flat land beside the river, such as that in Figure 7.11. This is covered by material deposited by the river.

This kind of valley can be found on all our main islands where rivers are approaching the sea.

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Meanders

As the land becomes flatter, the river begins to wind from side to side, forming **meanders**. The outer side of the river has further to go so it flows faster and wears away the bank. The inner side flows more slowly and deposits material. Therefore the meander is constantly changing position.

Figure 7.11 A meander in Makira. Note deposition on the inside of the bend and an erosion cliff on the outside.

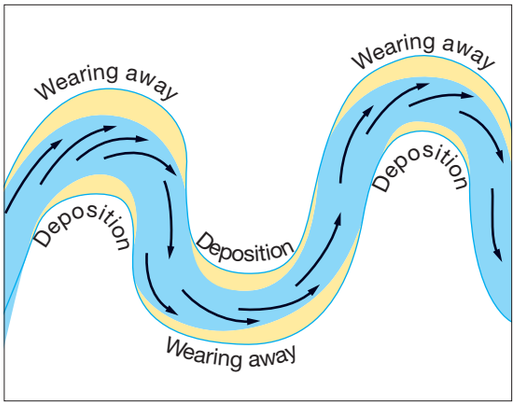

Figure 7.12 Meanders are formed on outside bends of a river.

The lower course

Here the land is almost flat, so rivers do not have enough energy to carry away their load. They deposit material on either side of the river. This happens during wet weather especially, when the river rises up and floods the land on either side of the channel. It becomes covered with layers of sediment, which often forms very fertile soil. This is called a **flood plain**.

Some of the Earth's largest rivers have built up large flood plains. Millions of people use these fertile flood plains for farming, especially in Asia. Examples include the Huang Ho and Yangtze of China, the Mekong of Vietnam, the Ganges and Padma of Bangladesh, and the Indus of Pakistan. The rivers on the Guadalcanal plains all flow over flood plains.

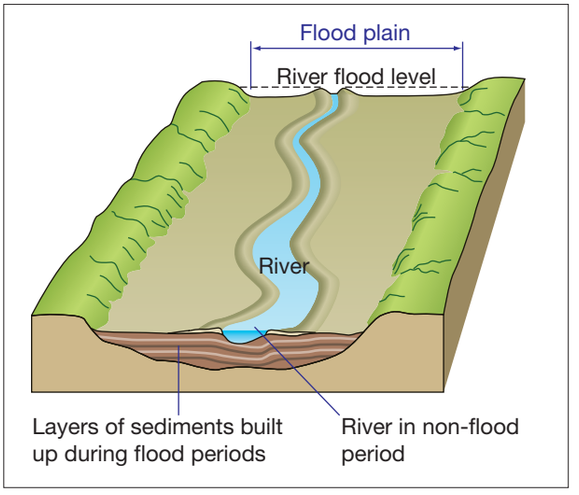

Figure 7.13 Over time, layers of sediment built to form a flood plain.

Activity 6

If you live near a river or stream with a meander, go and look at it. Observe the speed of the river on the inside and outside of the meander. Can you see any evidence of erosion or deposition? Try to return to the same place a few days or weeks later and observe any changes.

Activity 7

Find Bangladesh in an atlas. Is it flat or hilly? Are there many rivers or few? Name some of the rivers.

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Deltas

The place where a river flows into the sea is called a **delta**. The energy of a river slows down once it reaches the sea or lake. The river will therefore deposit its sediment at this point. After a long time, if the tides and currents in the sea or the waves are not strong enough to wash them away, the layers of sediment can build up into rich, fertile soil called a delta. The low speed of the river will result in the river channel becoming blocked with sediment. Therefore, the river is forced to divide into a number of separate channels or **distributaries**.

Figure 7.14 This river shows no delta. No sediment has built up.

Figure 7.15 This river has a delta, where sediment has built up at the river mouth.

You can often see a kind of delta where a road on a steep slope meets a flat road. The rain brings sediment down the steep road and this is deposited on the flat road as the speed of the water slows down. This forms a heap of mud on the flat road, often in a D shape like a delta.

Activity 8

After reading the above descriptions, think of the valleys where the rivers or streams on your home island flow, or think of the island where your school is. Try to divide the valleys into the three parts: upper, middle and lower. Answer the following questions in your exercise book.

1. In which part of the course are there fewest settlements? Why? What might be some uses for this part of the course?
2. In which parts of the course are there most settlements? Give at least two reasons.
3. In which parts of the course are the best soils likely to be? Give reasons.
4. What danger is there for settlements near rivers in the middle or lower course?
5. Which parts of the course might be suitable for large plantations? Give reasons.
6. Which parts might be suitable for generating hydro-electric power or storing water? Give reasons.
7. On the weather coasts of our islands, rivers may not have lower courses like those described above. Some may only have the features of upper courses. Why is this?

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Figure 7.16 The Mississippi valley, United States of America

Activity 9

1 On the map above, find the Mississippi River in the United States of America. Look at its mouth. Find the city of New Orleans.

2 In 2005 a huge cyclone (called Hurricane Katrina) swept waves from the sea and flooded New Orleans, killing many people. In 2007 another cyclone with big waves killed thousands of people in Bangladesh and destroyed hundreds of thousands of houses. Discuss with your classmates why places built on deltas are particularly likely to be damaged by cyclones.

3 Can you suggest why some of the Earth's rivers have no deltas at their mouths?

Figure 7.17 New Orleans after Hurricane Katrina

Figure 7.18 A cyclone flooded Bangladesh in 2007.

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3 Importance of rivers and streams

Activity 10

1 List five different ways local people in your village and community depend on or make use of rivers and streams or the water from rivers and streams.

2 List and describe any five ways in which the use of a river or stream can damage or pollute it.

3 Suggest three things you can do to prevent the destruction or **pollution** of rivers or streams.

4 List and explain any ways in which rivers can cause problems to humans.

Uses of rivers and river valleys

We use rivers for various purposes. Some of these purposes include the following:

- *Drinking:* Water is taken from rivers either directly or through channels, reservoirs or pipes to people's houses and used for drinking.
- *Food:* Some communities depend on the fish that live in or travel along rivers. They catch fish for food.
- *Domestic:* River water is used for cooking, washing clothes and bathing.
- *Human settlements:* Many settlements, including many major cities of the world, are situated on the banks of rivers, especially on their fertile flood plains. Name any settlement on your island situated on the banks of a river.
- *Farming:* Most deposited soil on flood plains is also used for farming, forming some of the main food-growing areas of the world, such as the rice-growing flood plains of Asia. Parts of the Guadalcanal Plains, which are made up of flood plains, were used in the past for large-scale rice growing and are now used for growing oil palm.
- *Hydro-electric power:* The power of rivers provides some of the electrical energy we use in our everyday lives. Hydro-electric power stations use the energy from falling water to make electric power for lights and machines. Hydro-electric dams are used in some rural areas in Solomon Islands, such as Malu'u in North Malaita, to provide power for lights and for machines.
- *Rivers for transport:* Villages and towns situated close to rivers may use river transport to move people and goods.
- *Irrigation:* Farmers take water directly from the river or reservoir to water their crops. Irrigation channels carry water from the river to the farmer's crops. Sometimes farmers use machinery to get this water from the river.
- *Construction:* The rocks and gravel collected and moved by rivers are used in the construction of buildings and roads.
- *Recreational uses:* People also use rivers for recreational purposes. This includes boating and pleasure cruises. People who live a long way from the sea use rivers for water sports such as canoeing, rowing and swimming. Every weekend people from Honiara use the Mamara and Bonege rivers for recreational purposes.
- *Tourism and waterfalls:* Rivers are also good

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tourist attractions. The powerful forces of rivers create beautiful scenery, such as natural waterfalls, gorges and lakes. People visit waterfalls, such as Mataniko or Tenaru Falls near Honiara, to look at their natural beauty and the endless amount of water pouring down.

- *Rivers and nature:* Rivers provide homes for different types of animals and birds. Many rare plants and trees grow by rivers. Other animals or birds use the river for food and drink or for catching fish.

Activity 11

1 Look at the following six photographs of activities involving rivers. In your exercise book write the number and location of each photograph and say how the river is being used in the photograph.

2 Think of one river or stream you know. List any ways in which the river or stream is used by people.

Picture 1

Picture 2

Picture 3

Picture 4

continued on page 124

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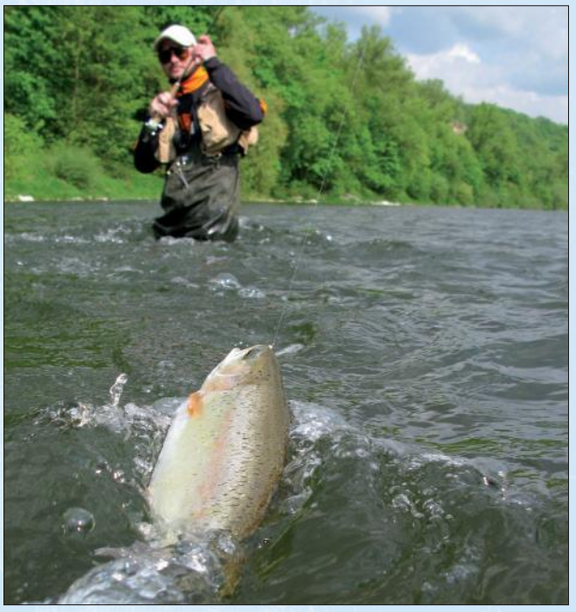
Picture 5



Picture 6

Problems associated with rivers

Although rivers benefit humans in many ways, they can also create problems. Some natural problems rivers can create are:

1 **Flooding**
Rivers can flood during heavy rains. Flooding rivers can destroy food gardens and villages that are nearby. They can also drown people.

2 **Barriers to land transport**
Rivers can only be crossed by canoes, boats or bridges. Because of the difficulty of crossing rivers, they have sometimes become boundaries for people's settlements.

3 **Disputes over river use**
As we have seen, many rivers are used for water supply, irrigation and hydro-electric power. This can produce disputes between groups of people wanting to use the water for different purposes.

The Nile flows from central Africa to Egypt and supplies millions of people in Egypt with all their water for drinking, irrigation and other needs. This is because Egypt is a desert and has almost no rain. If people upstream use too much water for water supply or irrigation, or obstruct the flow with dams for hydro-electricity, the people of Egypt will not have enough water. The Egyptians themselves built a dam at Aswan which prevents sediment from flowing down to the lower parts of the river. This sediment used to be deposited on the flood plain to make the soil fertile, but now farmers have to use fertilisers.

In this case there are international agreements about water between the countries along the Nile. In the Middle East there are disputes over water between Israel, which is a Jewish country, and the surrounding Arab countries. There are many other similar disputes in the world over water. As the world population grows and demand for water increases, many people believe that wars will be fought over the use of water in some rivers.

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Activity 12

Use the map below to answer the following.

1 Which countries could affect or cut off the supply of water to Egypt?

2 Which river is disputed between Israel and the Arab countries?

3 Which other river might cause disputes between countries? Name the countries.

4 The whole area of the Middle East shown on the map is a desert area. Why does this make disputes over rivers more likely?

Figure 7.19 The Nile, Tigris and Jordan Rvers in Africa and the Middle East

Activity 13

Explain how each of the human activities shown below may damage the rivers.

Picture 1

Picture 2

Picture 3

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4 Pollution

Pollution is when the cleanliness of a river is destroyed and it becomes unsafe for people to use. This happens as a result of people's activities. If people on the upper part of a river pollute it, the people living downstream will suffer. This is common on large islands where there are inland villages on the upper parts of rivers.

River water can be polluted in many ways. Some of the ways include:

- *Sewage:* In rural villages in some parts of the world the river is used as a toilet. Both human waste and animal dung are dumped in the river. This leads to all types of water diseases such as typhoid, cholera, hepatitis, dysentery and diarrhea. People who live upstream must use proper toilets and waste disposal to prevent this problem.
- *Industrial waste:* People living in towns pollute rivers by draining poisonous wastes from industrial plants, such as canneries or factories, into drains and rivers. These wastes can kill fish and destroy the natural habitat of all living things in rivers. When people eat fish that feed on poisoned water they can get sick. For example, there is a danger that the rivers flowing from Gold Ridge on Guadalcanal may be polluted by chemicals from the gold mine. The mining company tries to prevent this by storing waste water and solid waste from the mine behind a tailings dam.
- *Agricultural waste:* Insecticides, pesticides, fungicides and fertilisers from farms together with animal dung, poultry droppings and other farm wastes are washed by heavy rains into nearby streams, polluting the water and making it unsafe for drinking. For example, this has happened in the past on the plantations or rice farms on the Guadalcanal Plains.
- *Solid wastes:* Unwanted materials—like rusty cans, scraps and plastic containers, together with rock debris from mines and quarries—are thrown or washed into rivers by heavy rain, causing pollution. This has happened to all the rivers and streams flowing through Honiara.
- *Clearing of forests:* Clearing of forest through agricultural practices or logging on **headwaters** can affect water in a number of ways. First, clearing trees and forests on headwaters can result in headwaters drying up. Second, logging trees clears the ground, and top soil is washed away during rain into rivers, making rivers dirty to use. This has happened in recent years to many rivers and streams in Solomon Islands. This is probably why flooding has increased so much in Guadalcanal in recent years.

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CASE STUDIES

1 The Ngalimbiu River

Activity 14

Look at the map and photographs of the Ngalimbiu River on the Guadalcanal Plains. Use the information you have learnt in this chapter to answer the following.

1 Write down the numbers of the photographs which show the following sections:
- the upper course
- the middle course
- the lower course.

Identify the features on each photo which show you which section of the course it is.

2 Very few people live in the upper course. Suggest reasons for this.

3 Suggest one possible future use of the upper course.

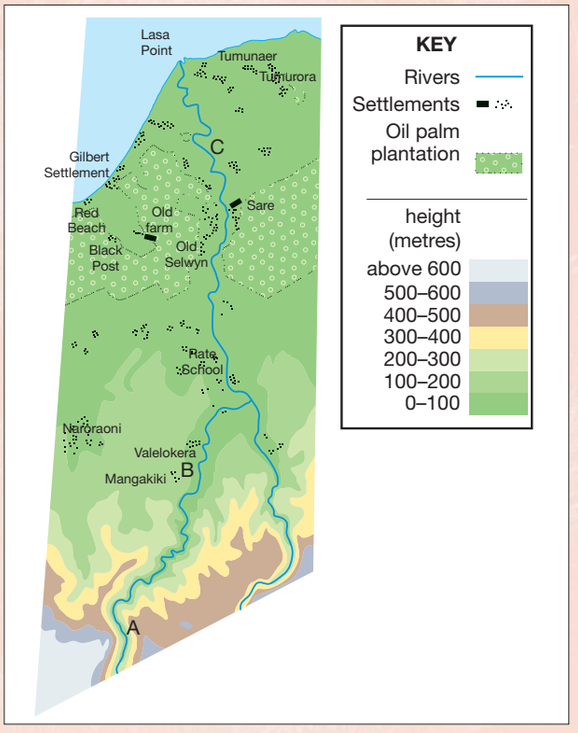

Figure 7.20 The Ngalimbiu River

4 Some logging has taken place in this section. What effect might this have on the areas downstream?

5 Most settlement is found in the middle or lower course. Suggest two reasons for this.

6 The lower course or flood plain has been used for large-scale plantations of oil palm. Suggest three reasons why the area is suitable for plantations.

Picture 1

Picture 2

Picture 3

continued on page 128

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7 In 1986 the area was affected by heavy rain from Cyclone Namu. The land on either side of the river was flooded and many houses and villages, and the bridge over the river, were washed away. It was suggested that human activity may have made the flooding worse. What kind of human activity might that be, and how might it make the river more likely to flood?

Figure 7.21 The bridge over the Ngalimbiu River was destroyed by Cyclone Namu.

8 The former Selwyn College was near the banks of the Ngalimbiu at Najilagu. It was severely flooded and all the students and staff had to swim hundreds of metres to safety. By the time the flood stopped all the classrooms and buildings had filled with mud. Describe how the three kinds of work of a river caused this mud in the classrooms.

Figure 7.22 Selwyn College after Cyclone Namu

9 Selwyn College was moved and re-built elsewhere. Do you think this was a sensible decision?

10 The plantation workers' housing has been re-built near the river and the bridge is being re-built. Suggest what might be done to prevent the area being flooded again.

Figure 7.23 The Matepono River flooded some people's gardens in 2008.

The photograph above shows a similar problem to that which affected Selwyn College. This is on another river flowing across the Guadalcanal plains: the Matepono River. In 2008 this river rose over its banks after heavy rain and flooded some gardens belonging to local farmers.

The farmers claimed that this was caused by waste material from the gold mine at Gold Ridge. They said this waste was brought down by the river as part of its load and deposited near the mouth where the land is flat and the river does not have enough energy to carry away the load. This blocked the mouth of the river and caused the flooding, as the water could not escape to the sea. The mining company, however, denied that their waste was put into the river. They said it is stored behind the tailings dam. They said that the heavy rain and clearing caused by logging and plantations might have brought down more sediment.

11 Write two sentences to support the ideas of the landowners or two sentences to support the ideas of the mining company.

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The case study of the Ngalimbiu and Matepono rivers on the Guadalcanal Plains showed some of the problems which may occur when river valleys are changed by 'development', that is when people make use of them to try to improve their lives.

Activity 15

Name three kinds of development which have occurred in the Ngalimbiu and Matepono valleys and three kinds of problems this has caused.

Figure 7.25 Part of the Amazon forest along a tributary of the Amazon

2 The Amazon River

The Amazon River in South America is the second longest river in the world and flows through the largest drainage basin.

Figure 7.24 The Amazon River Basin

Activity 16

Look at the map of the Amazon Basin above and find it on the world map in Appendix 3. Compare it with the size of Solomon Islands, Papua New Guinea, and Australia. Copy the following sentences and write the missing or correct words.

The Amazon Basin is in the continent of ___?___ ___?___. Most of it flows through the country of ___?___. It is much bigger / smaller than Solomon Islands; bigger / smaller than Papua New Guinea; and about half / a quarter the size of Australia. Three other countries on the edge of the Amazon Basin are: ___?___, ___?___ and ___?___. The Amazon flows into the ___?___ Ocean. The large town in the middle of the Amazon Basin is called ___?___.

The Amazon Basin begins as hundreds of tiny streams high in the Andes Mountains, just like the Ngalimbiu and Matepono begin in the mountains of Guadalcanal. However it has many hundreds of tributaries, each much larger than the Ngalimbiu or Matepono. Some are over 1600 kilometres long—more than the length of the whole Solomon Islands from Shortland Islands to Tikopia. The Amazon itself is 6275 kilomtres long; that is the distance from Solomon Islands to China!

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The Amazon Basin is very wet, with about 2000 to 3000 millimetres of rain falling each year, similar to the Guadalcanal Plains. Because of its great length and many tributaries it carries more water than any other river in the world: up to 120 million litres of water per second near the mouth, where it is 300 kilometres wide! This is more than the length of our longest island, Isabel. The whole of Guadalcanal, our largest island, could disappear inside the river!

Like the Ngalimbiu and Matepono, the Amazon carries sediment in the form of its load, some of which is deposited near its mouth to form a delta. It deposits three million tonnes per year—enough to cover the whole of Honiara.

Like the Ngalimbiu and Matepono also, people use the Amazon and its valley to try to improve their lives and the lives of the people of Brazil; that is for 'development'. As with the Ngalimbiu and Matepono, however, some of this development has also caused problems.

Development has been similar to that on the Guadalcanal Plains and surrounding areas: logging to cut down the forests; clearing the land for plantations of oil palm or for ranches to keep cattle; mining, including gold mining; building roads and towns. The problems caused, therefore, are also similar to those of the Guadalcanal Plains, but on a much larger scale.

Activity 17

1 Read the passages below. Make a comparison between the Amazon Basin and the Guadalcanal Plains. Copy the table below. Use this table to suggest things which are similar in the two areas and things which are different.

2 Suggest one thing we might learn from our study of the Amazon Basin which could help us to develop Solomon Islands wisely.

Comparison of Amazon Basin and Guadalcanal Plains	
Similarities	Differences

Clearing the forest

One of the biggest problems is that the forest is being cut down rapidly. It is being cut down, like many areas of forest in Guadalcanal, to sell the logs for timber. But it is also being cut down, as on the Guadalcanal Plains, to make way for plantations of oil palm. In the Amazon large areas are also being cut to clear land for cattle ranches—huge farms which raise cattle for meat. Clearing for plantations and ranches is often done by burning the forests. In one year there were over 8000 huge fires in the forest and a single fire can destroy an area of forest larger than the whole of the Guadalcanal Plains. One fire destroyed 10 000 square kilometres—an area twice the size of Guadalcanal!

As in Guadalcanal, when the trees are cut down the soil no longer has a supply of nutrients from the dead vegetation, and it soon becomes infertile. There are no trees to stop the rain from falling directly onto the soil, and there are no tree roots to bind the soil together and stop the rain from running away. So the heavy

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Figure 7.26 Part of the Amazon forest being destroyed by fire

rain washes away the soil through soil erosion, and causes huge floods which can drown whole villages.

The problem in the Amazon is worse than on Guadalcanal. In the Amazon there are different groups of people. The original inhabitants are called Indians. They live in small tribes in villages of leaf houses, similar in some ways to traditional Solomon Islands villages, but they mainly get food from hunting and gathering fruit and other products from the trees. Once the forest is cleared they cannot survive. The people who are clearing the forest are people from outside, originally settlers from Europe, who want to sell the trees and make money from large plantations and ranches.

These outside people are more powerful than the Indians and they often force the Indians to sell the land for small amounts of money or even take away their land by force. They have guns and are often supported by the government. The Indians cannot defend themselves so they often lose their land and are forced to work on the plantations for low wages.

Figure 7.27 Amazon Indians are the traditional inhabitants of the Amazon.

Roads and landless settlers

One thing which leads to the rapid destruction of the forests is the building of roads. The government has built huge roads across the Amazon and this encourages more plantation owners and ranchers. It also encourages people without land to come from other parts of Brazil and settle in the Amazon basin.

Solomon Islanders are lucky. We all own our own land. In Brazil, however, over 80 per cent of the land is owned by only 4 per cent of the population and millions of people own no land at all. These are the ones who are moving in to settle in the Amazon Basin.

Figure 7.28 A road across the Amazon Basin

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Mining

As in Guadalcanal also, there are minerals in the Amazon Basin, especially gold. So some of the forest is destroyed and people lose their land to gold mining. Again the gold miners sometimes take the land from the landowners by force and then employ people to work in the mines in very poor conditions, for low wages. Their mines pollute the water supplies with chemicals and waste products.

Figure 7.29 Gold mining in the Amazon Basin

Resistance and change

Slowly the Indians, and other people in Brazil who do not want to see all the forests destroyed, are fighting back. In places Indians have been allowed to set aside 'reserves' where they can live a traditional way of life and where logging, plantations and mining are not allowed. There is a strong movement of landless people who occupy the land of the rich landowners and force them to give away some land. Since 2000, Brazil has elected a government which supports the landless people and the Indians rather than the rich plantation owners.

The amount of forest being destroyed each year has slowed down so it is possible people will realise they cannot go on destroying the forest for ever.

Some of the major rivers of the world

Activities 18

1 The world map in Figure 7.30 shows some major rivers of the world. Table 7.1 shows some information about these rivers. Using an atlas or the world map in Appendix 3, write down the name of each river and the main countries it passes through.

2 From the atlas, which rivers pass through areas with very few people and which pass through areas with very many people? You can judge by looking at the number of towns along the rivers.

3 From what you have learnt, suggest the main reason why many people live on the flood plains of many of these rivers.

4 What dangers would the people living along these rivers face?

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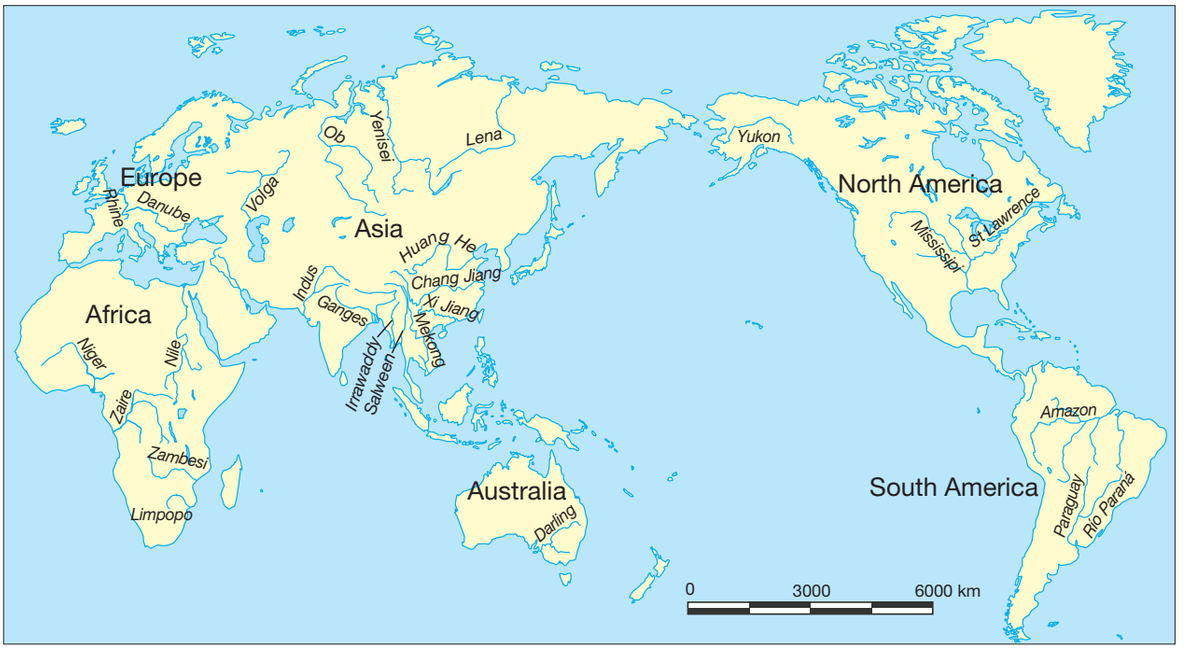

Figure 7.30 Major rivers of the world

Name	Length (km)	Location	Facts
1. Nile	6695	Northeast Africa	World's longest river. Brings water from the wet areas of East Africa to the desert areas of Egypt and Sudan.
2. Amazon	6437	South America	World's second longest river. Flows through the world's largest area of rain forest, which is being destroyed by farming and logging.
3. Yangtze	6300	China	Longest river in China. Very large population of rice farmers and big cities on fertile flood plains.
4. Danube	2810	Europe	Longest river in Europe. Flows into the Black Sea—a sea almost surrounded by land. Many big cities and industries along it and very polluted.
5. Ganges	2506	South Asia	Flows from the highest mountains in the world, the Himalayas, across a big plain into the sea at the Ganges Delta. Lower part is very fertile and densely populated, especially for rice farming.
6. Murray	2375	Australia	Flows from New South Wales through Victoria and South Australia. Very important for irrigation for crops, including rice. Not enough water in recent years.

Table 7.1 Major rivers of the world

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Glossary

banks the sides of a river or stream between which the water normally flows

bed the bottom of the river or stream

channel a narrow area or ditch that contains flowing water

cliff a very steep, rocky slope

condense (condensation) when water vapour changes into water

delta the mouth of a big river, where layers of sediment or silt can gradually build up to form a new piece of land

deposition (deposit) when a river drops the material it is carrying because it slows down

distributaries where a river divides into different channels, usually because sediment blocks the channel

drainage basin *see* river basin

energy power caused by the movement of water in a river. This helps it to erode its sides and bed and transport its load

erode (erosion) to wear away the river bed, river banks and channel by river flow

evaporate water changing into water vapour

flood plain the flat land of the river valley close to the river banks. It is usually found in the lower course of a river and often floods

gorge a narrow stream or passage between steep rocky hills

headwaters upper areas of a river

infiltration water which sinks into the soil or rocks

load the materials carried by a river

meander a large bend in the course of a river

mouth the end of a river, where it empties into a lake or sea

plateau an area of flat highland, often steep at the edge

pollution (pollute) making the river dirty or throwing rubbish into it

potholes round holes in the bed of a river or stream that occur when friction is caused by sediment and small rocks brought down by the river

rain water droplets that fall from clouds

river basin or drainage basin the area drained by a river and its tributaries

runoff water from rainfall or snow melt that flows across the surface instead of sinking into the ground

sediment small particles of soil or rocks that are transported by the river. Also called silt

source the start, or beginning, of a stream or river

transpiration (transpire) water or water vapour given off by plants, especially leaves

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transport (transportation) to move sediment, rocks and other materials by the river

tributary a river or stream that flows into another stream, river, or lake

valley the area of land across which a river flows, usually surrounded by higher land

water cycle the movement of water and water vapour around in a circle. Water is evaporated from the sea to form clouds and rain which falls on the land and flows back into the sea along rivers and streams

waterfall a sudden drop in a river as it flows over a cliff or very steep slope

watershed or water divide the line along a range of hills which divides two river systems

water table the area of rocks underneath the ground filled with water

water vapour water in the form of an invisible gas

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Chapter 8

The Sea and Coastlines

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Activity 1

1 If your school is near the sea, find out:
   - **a** what direction the school is from the sea
   - **b** how far it is from the school to the sea
   - **c** how long it takes by bicycle or car to walk to reach the sea
   - **d** how the sea is different from a river or lake.

2 If your school is far from the sea, write about how people get there. Do they travel on foot, by truck or by boat on a river? How long does it take? How much does it cost? What would you expect to find when you get there?

1 The sea and oceans

Most villages in Solomon Islands are situated close to the **sea**. Every day we can see the sea; sometimes it is rough, and sometimes smooth. We can fish, swim and play in it or sail on it. It stretches far away into the distance and connects us to other lands and peoples. A few of us live far from the sea and may only see it occasionally.

A very large area of sea between two continents is called an ocean. Can you name at least three oceans?

The sea and oceans taste salty compared to fresh water from rivers and streams that flow on land. The fish, shells and other animals that live in the sea survive in water that has salt, and are different from those that live in fresh water. However, some live in both fresh and salt water.

The sea is salt because, as we learnt in Chapter 7 on the water cycle, the sun's heat constantly evaporates water from the sea. This leaves behind any chemicals found in the sea and these chemicals make it taste salty.

If water is constantly being evaporated from the sea, why doesn't it dry up?

Figure 8.1 The beach at Nukukaisi in Makira

Figure 8.2 Undersea animal life

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Activity 2

If your school is near the sea, go down to the beach and answer the following questions by observing what you see. If you cannot go down to the sea, try to answer these questions from your knowledge of the sea.

1 Look at the waves.
   - **a** On a calm day, are there any breaking waves far out to sea?
   - **b** Where do the waves break?
   - **c** When do you get breaking waves, even in the deep sea? Why?
   - **d** What causes waves?
   - **e** Do the waves always break directly on to the **shore**, i.e. the whole wave hits the shore at the same time? If not, what sometimes happens?
   - **f** Observe any floating object on a fairly calm day beyond the area where the waves are breaking. Does it move in towards the shore with the waves, or just go up and down but stay in one place?
   - **g** Observe a floating object near the shore where the waves are breaking, or throw something like a coconut shell into the water. Does it move towards the shore when the waves break?

2 Look at the beach.
   - **a** What different kinds of material do you find on the beach? Where do you find the largest and smallest material?
   - **b** If you come back in one or more day's time, will all the material be in the same place? What moves it?
   - **c** Where did the material on the beach come from?
   - **d** If there is a **headland** and a **bay**, observe the different material on the headland and in the bay. What is the difference? Is there any beach on the headland at all? If not, what is there?
   - **e** On a headland the waves will continuously hit the shore or cliffs. What happens as they do this? What evidence is there for this?

3 Is there any coral in the sea or on the shore? If so, where do you find the coral? Which coral is live and which is dead?

4 Is there any mangrove in the area? What sort of places is it found?

5 If possible, sit in the sea near the shore while waves are breaking. What happens to you when the wave breaks and rushes towards you? What happens to you afterwards when the water flows back to the sea?

2 The work of the sea

The sea does two things. It destroys and it also makes new land.

The sea destroys

If you did the last activity, you probably found yourself pushed towards the shore as the wave broke and dragged back down the beach as the water went back. As you probably felt, moving water is very strong. Have you ever been swimming and found yourself being washed out to sea? The sea can wash away sand, soil and rocks, just as it can pull you out to sea if you are not careful. The moving waves, currents and tides change our shores. They damage cliffs, sand and beaches. They carry away rocks and soil, which are put down and built into new land in another place.

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Figure 8.3 Coastlines erode when waves crash up against them.

The sea makes new land

Sand and stones are collected as a result of wearing away and breaking of cliffs and beaches. They sink into the sea near the shores, and are carried away by tides and currents. Other material is brought into the sea by rivers and streams. All this material may be moved by the sea and finally thrown onto the shore to form new land.

The work of waves

Both the destruction of land and the making of new land is done by the work of waves. Waves act in three ways:

1 The movement of the water itself can move material.

2 If the water hits against the shore or a cliff, this can break the rocks into pieces.

3 The waves can throw these broken pieces onto the **coastline** or cliffs with great force, causing the coastline to be washed away or eroded.

3 What are waves?

Activity 3

Fill a shallow bowl with water. Blow across the top of the water. What happens? What causes this?

Waves are caused by the wind. They are created when the wind blows over the surface of the water. The friction of the wind causes the waves. Therefore, the more wind the bigger the waves. Waves are biggest and have the most power when the wind is strong and has been blowing for a long time.

Remember your observation for Activity 2? When you watched an object, like a log or coconut, floating in the deep sea beyond the breaking waves, did it move forward with the wave or just move up and down? Usually it just moves up and down but stays in one place. It only moves forward if it is pushed by the wind.

If you throw a stone into a pool or bowl of water it will cause waves. The water in the waves seems to be moving towards the edges, but is it? If the water was moving from the middle to the edge, the middle would become dry and all the water would end up at the edge. This does not happen.

These experiments show that water in a wave does not usually move forward. It actually moves round in a circle. That is why it does not usually break. Waves usually only break near the shore and this causes the water to actually move forward. Waves break near the shore because the water is shallow. The base of the wave touches the sea floor and starts to slow down, while the top of the wave moves faster, rises up and eventually topples over under its own weight, breaking on to the shore.

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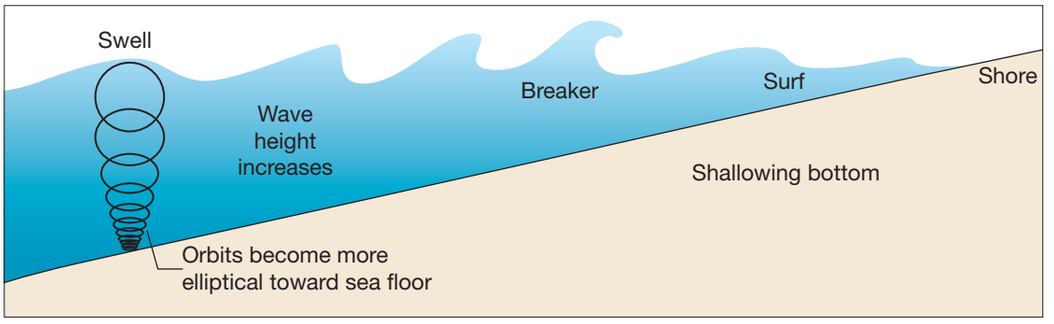

Figure 8.4 Waves offshore make a circular movement. Breaking waves usually happen close to shore.

That is why, when you observe an object far out to sea it just moves up and down, not forwards. But an object in a breaking wave will actually be moved forward with the wave.

Figure 8.5 A large breaking wave

Figure 8.6 Small waves

Types of waves

There are two kinds of waves. **Destructive waves** can destroy the beach and carry sediment from the beach out to sea. **Constructive waves** do the opposite. They increase the size of the beach by piling sediment up onto the **shoreline**.

Activity 4

Think of a wave breaking on the beach. If you have been swimming in the sea, think of what happens. As the wave moves towards you, where does it push you—towards the shore or away from it? After the wave has broken and before the next wave, where does the wave pull you?

A wave has two parts. As it breaks it pushes water up the beach. This is called the **swash**. A few seconds later the water flows back down the beach towards the sea. This is called the **backwash**.

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Constructive and destructive waves

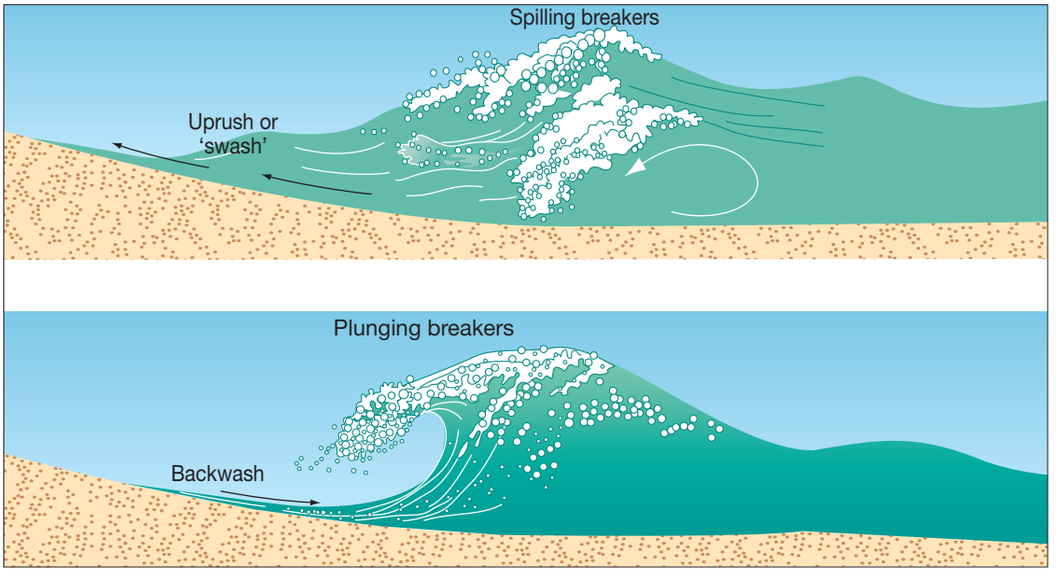

Figure 8.7 The swash and the backwash

If the wave spills or pushes forward up the beach, the swash is stronger than the backwash. The wave will push material up the beach and leave it there. This is a constructive wave.

On flatter coasts constructive waves may deposit sand and other material to form **sand dunes**.

If the wave breaks downwards, the backwash is stronger than the swash. The wave then drags material away from the beach. This is a destructive wave.

If waves hit a beach or a cliff by force they can break the rocks into pieces and the destructive waves take away the pieces. This is a form of erosion. The bigger the wave, the more erosion it causes when it breaks. On a sloping coast, big waves can cut into the land and form a cliff. The cliff gradually moves back, leaving behind a flat area called a **wave-cut platform**.

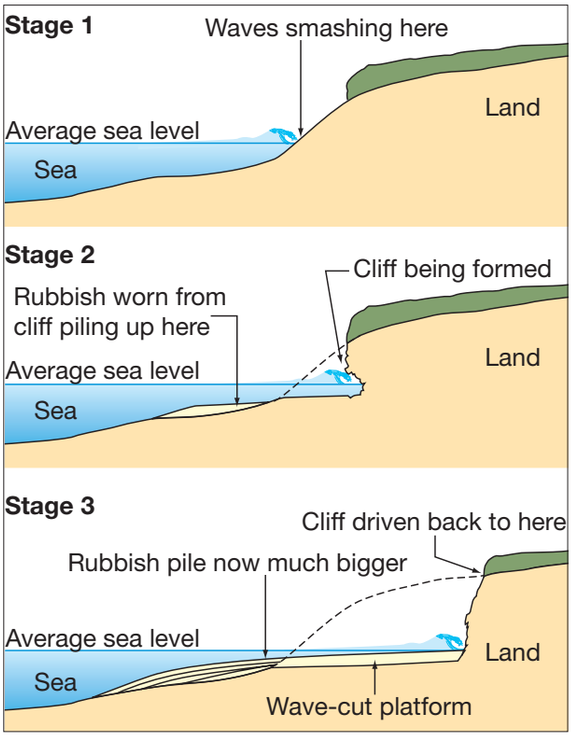

Figure 8.8 Formation of a cliff and a wave-cut beach

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Long-shore drift

Waves can also move material along the beach.

Activity 5

If your school is near the sea, do the following activity.

Throw a coconut shell into the sea near the shore where the waves are breaking. Watch its movement for some time. Does it stay in one place or move along the beach?

If you do this, you will often see the coconut moving along the beach, especially if it is a steep beach.

Waves often break at an angle to the beach and the swash pushes the coconut along the beach in one direction. The backwash pulls it straight down the beach. The next wave throws it along the beach again and the backwash pulls it straight down. This means it moves along the beach in a zigzag way, as shown in Figure 8.9. This is called long-shore drift.

In this way sand and other material move along the beach and often block the mouth of a river. This can be seen in many rivers in Solomon Islands.

Figure 8.10 A **sand spit** at the mouth of the river at Kira Kira, almost blocking the mouth. Sometimes it disappears or forms in the opposite direction when the wind changes.

If the wind changes direction the waves and the long-shore drift also change direction and another sand spit may push the river mouth in the opposite direction.

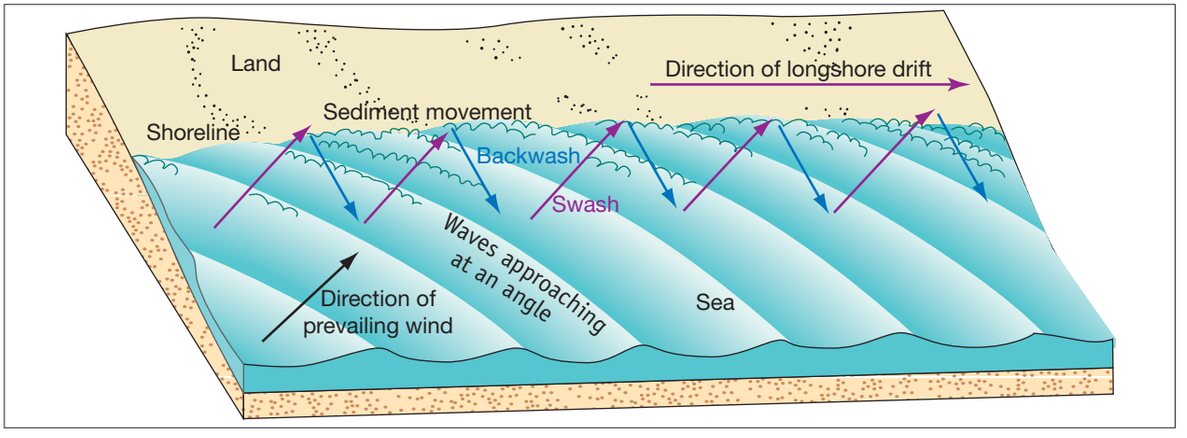

Figure 8.9 Long-shore drift occurs when waves hit the beach at an angle, rather than straight onto the beach.

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Activity 6

1 If you live near the sea, try to see what damage it is doing to your shore. Is it breaking a cliff? Making a cave? Wearing away an archway? Taking away sand? Is there any work being done to protect your shore?

2 Can you see any evidence of the waves building up material or depositing it on the shore?

4 Features of coastlines

Actions of the sea cause many kinds of features which can be seen along our coastlines.

Activity 7

If your school is near the **coast**, go down and look at it. Draw a sketch map to show the coast and name any places on it. Mark on it, in their correct positions, all the features that are highlighted in the paragraph opposite.

A coastline is where the land meets the sea. It includes the shallow water area in which waves break, the beaches and cliffs and coastal dunes of sand. There are often bays—bodies of water that are sheltered by the shape of the coast from strong waves—and headlands or points —areas where the coast points out towards the open sea. Where a river runs into a bay on the coastline, the bay is termed an **estuary**. In an estuary, fresh and ocean water mix, creating a special home for many plants and animals.

Some coasts in Solomon Islands have special features. There may be **coral reefs** near the shore or out to sea, or **mangrove** swamps in shallow, flat areas going inland.

The function of coastlines

The main function of coasts is to absorb or stop the power of the sea and protect the land from being washed away or covered by the sea. Beaches absorb the energy of the waves and wind, and stop them from affecting inland areas.

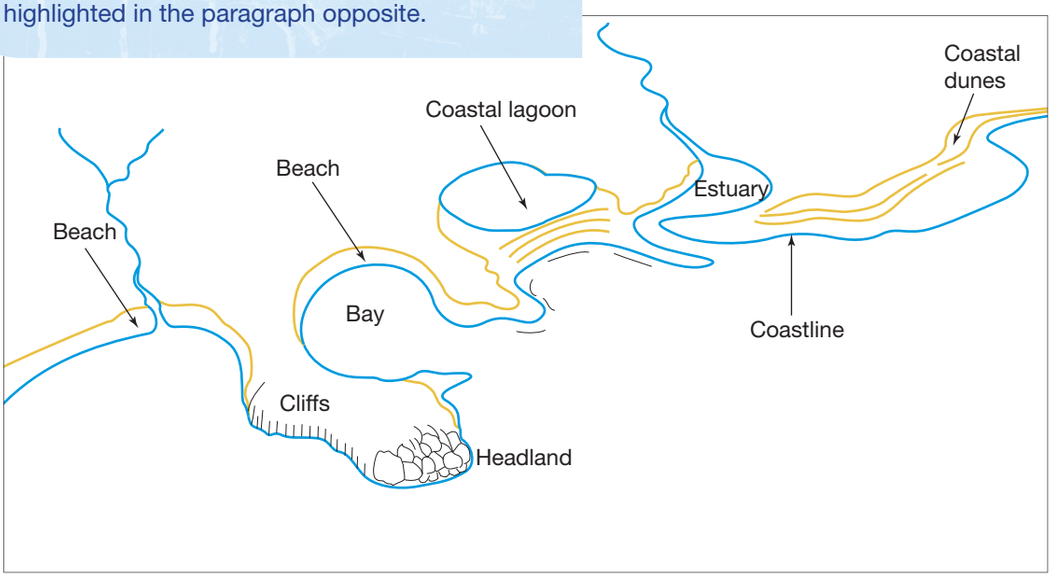

Figure 8.11 Features that can be found along a coastline

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Beaches

Beaches are the coastline areas where a large amount of sand, gravel or shingle is deposited, often building up into thick layers. Beaches are formed when waves carry sediments like sand, mud, rocks or other materials from the sea to the land. This sediment is also made up of particles brought to the coast by rivers.

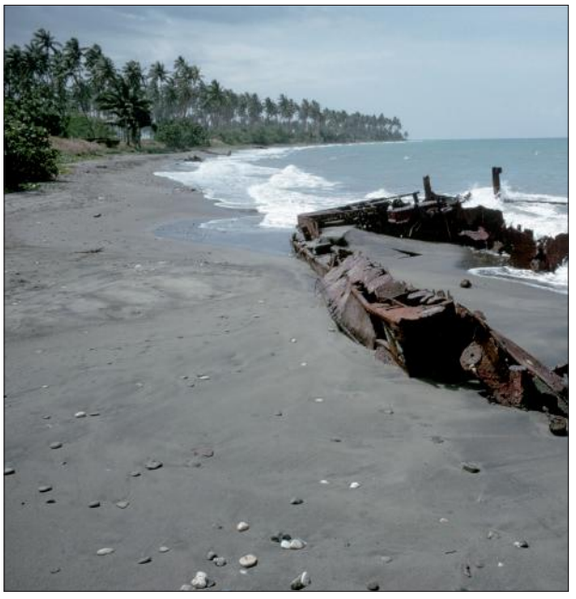

Figure 8.12 Red Beach near Tenaru where the Americans landed in World War II. One of their wrecked ships has been deposited on the beach.

The beach is also constantly swept by wind. The wind carries large quantities of sand that buries plants, and salt that burns their leaves. For this reason, few plants are found on the beach itself.

Activity 8

1 How do sand dunes form?

2 How do coastal sand dunes help to preserve the beach? How are coastal dunes influenced by human activity? What problems can human activities cause for sand dunes?

Activity 9

All the constructive and destructive features described below are common on Solomon Islands coasts. From your own area or your own knowledge of any area, identify examples you have seen.

Constructive features

The waves, and sometimes the wind, bring material and deposit it on the coastline. These constructive features are most common in bays which are sheltered.

Beaches are areas where sand, gravel or larger pieces of rock called shingle are deposited.

Sand dunes are long heaps of sand often formed partly by the wind.

Spits are formed when long-shore drift blocks the mouth of a river and pushes it in one direction. The spit is the narrow piece of land between the river and the sea.

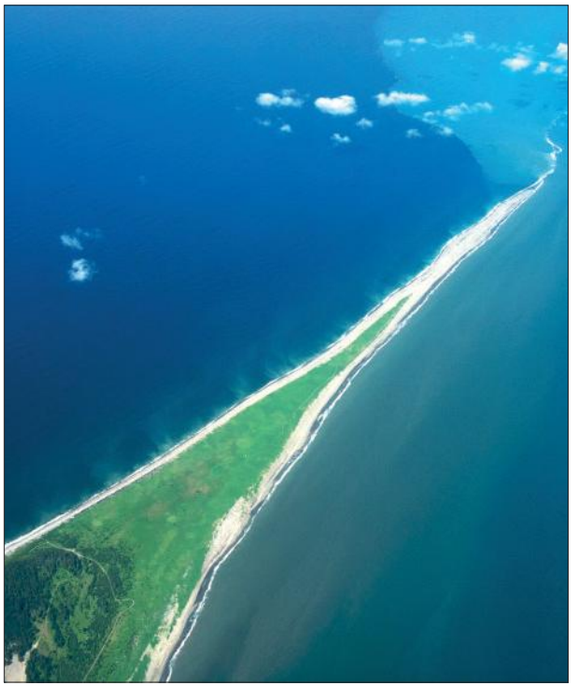

Figure 8.13 A spit

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Bars are formed when sand is deposited in the shallow part of the sea itself, forming a long, narrow island.

Figure 8.14 A sand bar

Tombolos are formed when a spit grows long and joins two points or headlands, often cutting off part of the sea inland to form a lake or lagoon. Some of the main villages on Tikopia are situated on two tombolos. Why do you think these villages were washed away during cyclone Zoe in 2002?

These constructive features sometimes build new land. There may be so much sand along the shore that hills are made. They become covered with grass and the land increases. The line of the shore moves out and each year goes further out to sea. A harbour may be filled with sand. Villages and towns by the sea may in time be inland. The shoreline has changed.

Sometimes people help the sea to make new land. For example, nearly one-third of the land of The Netherlands, a country in Europe, is lower than the level of the sea. People have built huge barriers and pumped out the water so there is new land.

Figure 8.15 Tikopia: the hills are joined to the mainland by tombolos or long sand bars separating Lake Teroto, from the sea. Here the tombolo has been broken by Cyclone Zoe.

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Destructive features

These are caused by waves destroying or eroding parts of the coast. They are common on headlands or points which are open to the force of the sea.

Cliffs are very steep pieces of land which rise up, sometimes directly out of the sea. The sea often wears them away by cutting at the base.

Cliff notches are formed at the base of cliffs. The waves hit the base of the cliff and cut a notch or long hole because erosion is greatest where the waves actually hit the land. After some time, the cliff above may fall down and the process starts again. In this way the sea eats the land away.

Caves are formed where rocks in the cliff are weaker and the sea makes a big hole in the rock.

Figure 8.17 Caves and stacks are visible.

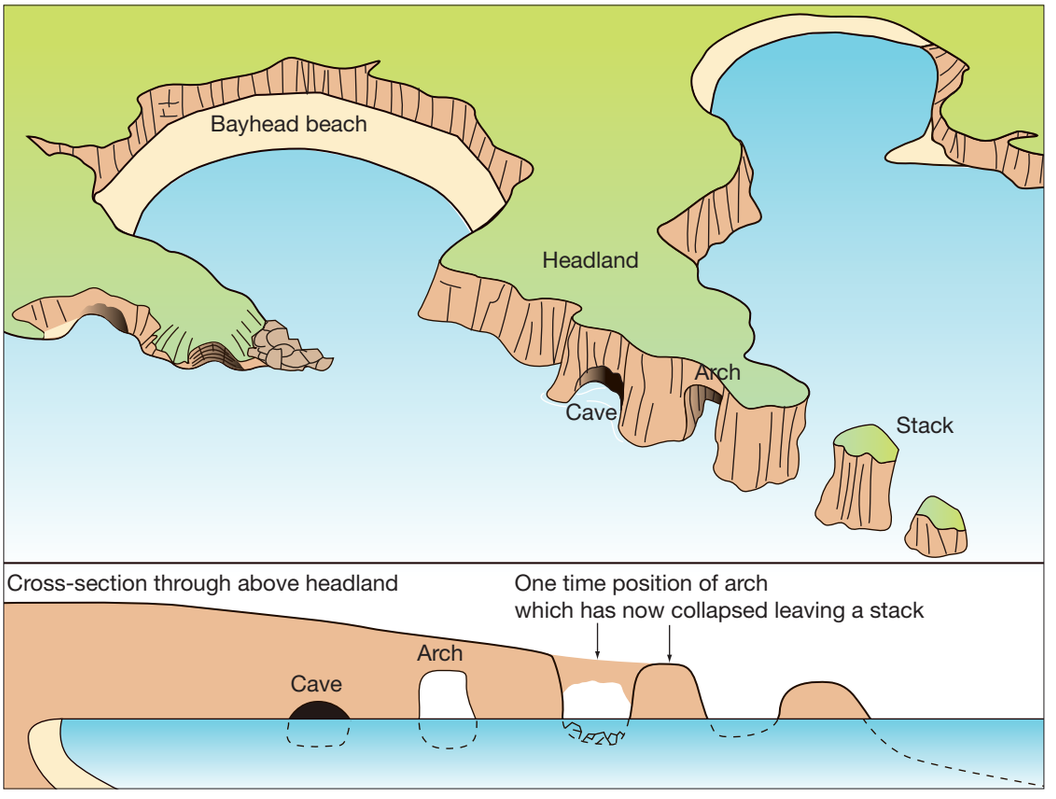

Figure 8.16 How caves are formed

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Blowholes are formed when part of the roof of the cave collapses and the sea is able to rush through the cave and push a jet of water out into the air above. These are common in some parts of Solomon Islands.

Figure 8.18 Water shoots out through the blowhole.

Arches are formed when two caves are formed on either side of a point or headland. Eventually the two caves meet and leave the roof of the cave like a bridge.

Figure 8.19 Arches can be unstable and people should not walk on them.

Stacks are found where part of the arch collapses and a small part of the cliff is left standing on its own in the sea.

Figure 8.20 Stacks

5 Coral reefs and atolls

A very important feature of the sea and coastlines in Solomon Islands is coral and coral reefs.

Activity 10

Think of any area you know which has coral.

1. Where does the coral occur—on the shore or somewhere in the sea?
2. Is there any coral near the mouths of rivers? Suggest the reason for this.
3. List all the ways coral and coral reefs are important for people in Solomon Islands. Think first of the ways people in your home area use coral or coral reefs.

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What is coral?

Coral is formed by tiny living creatures in the sea, called coral polyps. They live on even smaller creatures in the sea called plankton. Coral polyps have clear bodies and white skeletons. The skeletons are made of calcium carbonate, the same substance as chalk. Here in Solomon Islands we grind up the calcium carbonate and burn it to form the 'lime' for chewing with betel nut.

Most of the coral is actually the skeletons of millions of dead corals, so when you chew lime with your betel nut you are actually chewing skeletons! At the top and edges of the reef the coral polyps are still alive and, as they die, the reef grows bigger. As long as they are not disturbed, coral reefs live forever!

Coral attracts many types of fish, shellfish and other sea creatures such as crayfish, as well as many plants and seaweeds. Coral reefs are sometimes called the 'rainforests of the sea' because they have a huge variety of plant and animal life, like the rainforests on land. All of these plants and animals are important to each other for survival, partly because they feed off each other. If one type of plant or animal is lost, it affects the whole reef.

Where coral reefs are found

Coral and coral reefs are only found in certain parts of the world. This is because coral polyps require special environmental conditions in order to grow and survive.

- They need warm, salt water, so they are only found in areas near the equator, between longitude 25° north and 25° south of the equator. This area is called tropical because it is between two lines called the tropics.
- Polyps need plenty of sunlight and clear, salt water to grow. So they are only found in shallow, clear water where sunlight can easily reach the coral under the water.
- If water temperatures are too warm (above 32° C) corals can die.
- Corals do not grow near river mouths because rivers release fresh water into the ocean.
- They also do not grow in muddy or unclear water so they are not found where there are sandy beaches or near mangrove swamps.

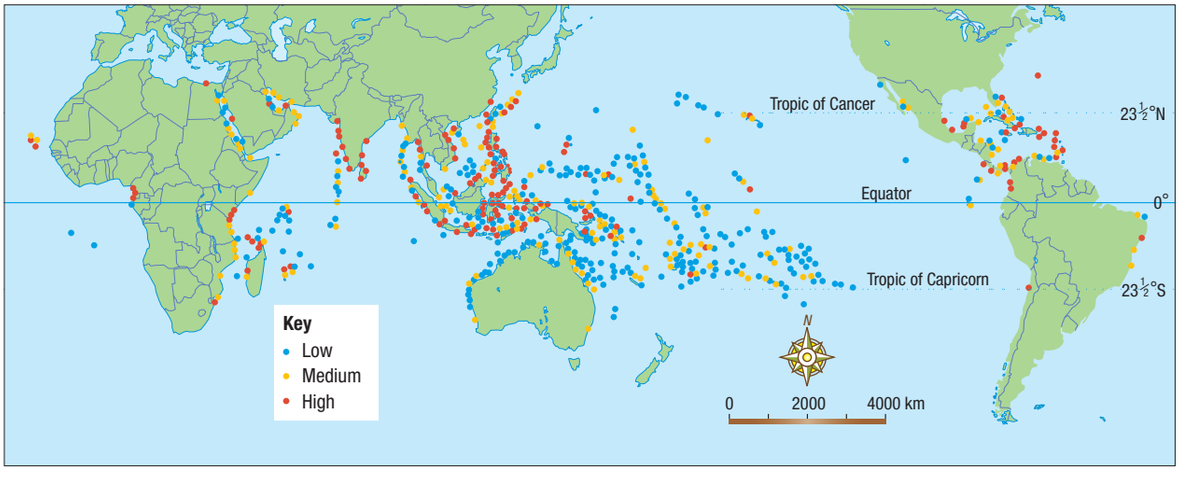

Figure 8.21 Distribution of coral reefs in the world

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Activity 11

1 Copy and complete the following table.

Conditions where coral grows	Conditions where coral will not grow

2 Coral reefs are increasingly being damaged by human activities. In groups, make a list of all the activities which might damage coral reefs. Think of activities which might change the water in which they live, as well as activities that might damage the coral itself.

Figure 8.22 The coral reef near Kira Kira in Makira. This is a **fringing reef**. Most of this is dead coral. The live coral is in the distance where the waves are breaking.

Types of coral reefs

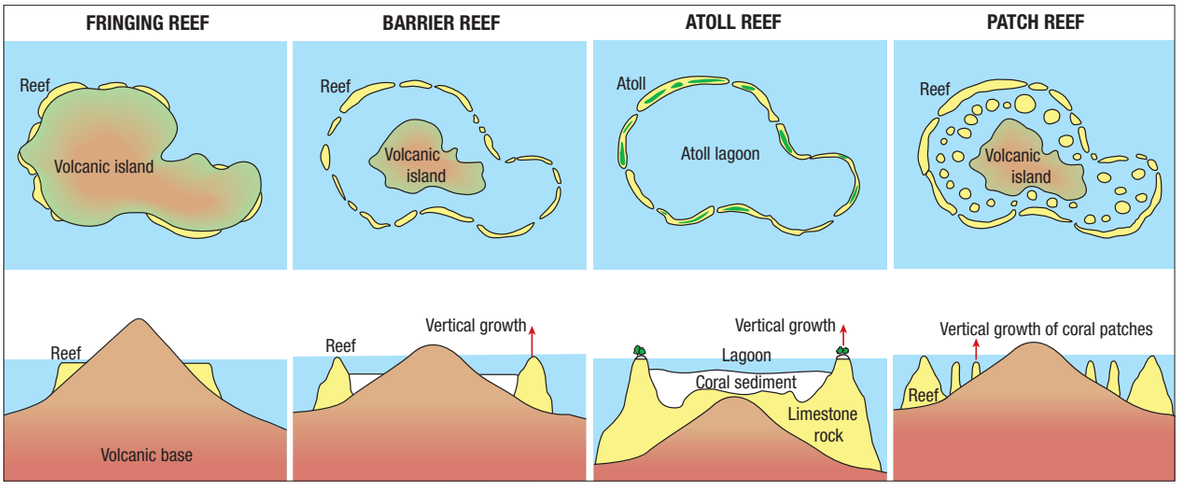

Figure 8.23 The different types of coral reefs

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There are four main types of coral reef as shown in Figure 8.23, plus a fifth, special, kind.

1 Fringing reefs

These extend outwards from the shore of an island, sometimes enclosing an area of shallow, calm water between the reef and the island. They are the most common type of reef. Marovo Lagoon is formed by a large fringing reef separating it from the islands of New Georgia and Vangunu. It is said to be the largest **lagoon** in the world.

Figure 8.24 The fringing reef at Matamoana, West Bellona

Figure 8.25 Marovo Lagoon

2 Barrier reefs

These form away from the main shore of an island or mainland and are completely separated from it by a wide area of water or a lagoon. The Great Barrier Reef in Australia is the most famous example and is the largest **barrier reef** in the world.

3 Patch reefs

A **patch reef** is another type of barrier reef with many small islands in the lagoon behind.

4 Atolls

These are ring-shaped coral islands, with a lagoon in the middle. **Atolls** are formed when islands surrounded by fringing reefs sink into the sea or the sea level rises around them. The fringing reefs continue to grow and eventually form circles that enclose the lagoon. These lagoons are connected to the open sea by one or more channels. Most coral atolls are found in the Pacific Ocean.

Ontong Java is a very good example of an atoll. Indispensible Reef, south of Rennell, is an atoll in formation.

Figure 8.26 Nukumanu is an atoll near Ontong Java.

5 Raised coral reefs

Sometimes coral reefs are raised out of the sea by movements of the Earth caused by earthquakes, occurring over millions of years. Rennell and Bellona are both made mainly of coral raised above the sea.

Figure 8.27 Rennell Island: a raised coral island with fringing reef

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Most of the hills of Honiara are also made of coral. This was formed along the coast, but Guadalcanal is slowly rising, in the same way that Rannonga rose in the tsunami of 2007 (see page 91). The coral now forms high hills cut into ridges by rivers. If you live on a ridge in Honiara like Kola'a Ridge, just dig or scratch in your garden and you will find coral.

Why are coral reefs important?

Activity 12

1 Many important Solomon Islands communities live around the lagoons behind fringing reefs or atolls. Write a paragraph to explain why many people have decided to live in such places. Look back at the list of uses of coral reefs you made for Activity 10.

2 Make a list of the advantages of such places for the people who live there.

Coral reefs are important for the following reasons.

- They provide homes for many sea animals and plants.
- They protect the coast from waves and erosion. The waves break on the outside edge of the coral reef and the lagoon behind is calm.
- They provide a source of food: fish and shellfish. Most villagers in Solomon Islands rely on fishing on the coral reefs for an important part of their diet.
- They provide income for people who can sell the fish, shellfish or other sea products such as bêche de mer or valuable shells like trochus shells.
- They contain medicines and cures for disease. People use things like seaweed as medicine.
- They provide income through tourism. Tourists like to visit coral reef areas because they are clean and beautiful. They also like to dive and look at the fish and other marine life, either by snorkelling with masks, or with full diving gear using oxygen so they can dive deeply for long periods. Many tourist resorts are developing around coral reef areas or on small coral islands within the lagoons. Coral likes to cling to something, so it often forms on wrecked ships. Tourists come to dive on the wrecks of old World War II ships like the one at Bonege.

Activity 13

Describe all the different ways that people fish either on or around the reefs.

Figure 8.28 Fish on the coral reef

Artificial islands

Solomon Islands, especially Malaita, has one use of coral which is very unusual in the world. People dive to collect lumps of coral from the bottom of the shallow lagoons. They pile these up one on top of the other in shallow water to form a new piece of land and eventually

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an artificial island. Some of these islands, like Sulufou in the Lau Lagoon, are big enough for hundreds of people to live on. This may have started partly to protect people from their enemies, but there are also fewer mosquitoes and less malaria away from the mainland. People in the Lau and Langa Langa Lagoons are still building new islands today.

Figure 8.29 Artificial island in Langa Langa Lagoon

Activity 14

Would you like to live on an artificial island? If you already live on one, do you like to live there? List the advantages and disadvantages of living on an artificial island.

Threats to corals

Many coral reefs all around the world, including those in Solomon Islands, are being damaged or destroyed by the activities of people.

- *Over-fishing:* As the population increases, people catch more and more fish, either for eating or for sale. If they catch them more quickly than the fish can reproduce, the total number of fish will go down. People will find it harder to catch fish and eventually there may be none left. It is a common complaint from old people that they catch far fewer fish in a day than they used to.

Figure 8.30 Over-fishing/Overuse

- *Overuse of marine resources:* In Ontong Java people had to agree to stop gathering bêche de mer some years, as it was in danger of disappearing altogether. They have to rest it to give it a chance to reproduce. In some areas trochus shells are now rare and some valuable shells have disappeared altogether. The people of Langa Langa sometimes have to go to other places to get the shell to make shell money.
- *Dynamite:* Instead of fishing properly some people use dynamite to cause an explosion in the sea and kill all the fish. But this destroys the coral reef as well and then there will be no more fish!

Figure 8.31 Using dynamite for fishing

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- *Pollution:* On one island in Vanuatu the people called in a scientist to tell them why so many fish were dying. He found out it was because they were throwing all their old batteries on to the reef and these were poisoning the fish. People think that the sea is so big you can throw anything into it and it will disappear, but it doesn't—it often ends up on the reefs. This damages the reefs and poisons the creatures which live there.

  The worst thing is plastic, because it does not rot in the sea. It kills the coral by covering it so it cannot feed. Fish swallow it and choke, or it gets round their mouths so they cannot feed. Even if it breaks into tiny pieces it can still poison fish. It can float on ocean currents for thousands of kilometres.

  On one of the most remote coral islands in the world, Midway Island in the very middle of the Pacific Ocean, the fish are being killed by hundreds of plastic bags thrown away by people thousands of kilometres away, because the ocean currents carry the bags to the island.

  Oil pollution is also a problem. All over Solomon Islands people rely on ships and outboard motors for transport. These use petrol, diesel and oil, which gets spilt in the sea or thrown away. If this ends up on a coral reef it will kill the coral and everything else on it.

Figure 8.32 The beach on Midway island. Do you know any Solomon Islands beaches which are starting to look like this? How can you help to prevent it?

Figure 8.33 Oil spilt on the Sunshine Coast in Queensland, Australia. Imagine what this would do to coral!

- *Logging, gardening and chemicals:* Logging and gardening cause soil to be washed down the rivers and into the sea. This makes the water muddy so the coral dies and the reef disappears. If chemical fertilisers or sprays are used by the farmers, they are washed into the rivers and sea and kill the coral and all other creatures.

Figure 8.34 Brown sea near Waita'a river, Makira, caused by pollution from logging. The sea was not like this before logging started. There are coral reefs on either side of the bay which may be affected.

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- *Coral bleaching:* If the sea becomes too hot, above about 32 °C, coral will die from what is called bleaching. All over the world scientists have discovered that temperatures are rising because we are causing pollution in the atmosphere. This is causing the temperature of the sea to rise and many coral reefs are dying due to coral bleaching. Some people believe that all the coral may disappear because of this.

Figure 8.35 Coral bleaching

Activity 15

1 Copy the table and fill in the right-hand column.

Damage to coral	Ways this may be overcome
Over-fishing	?
Overuse of marine resources	?
Dynamite fishing	?
Pollution	?
Oil pollution	?
Logging, gardening and chemicals	?
Coral bleaching	?

2 Design a poster on preserving coral reefs. On the poster, show some of the dangers to coral reefs and how we can preserve them. Use drawings on the poster and make it look colourful.

3 Explain how Solomon Islanders use the sea for each of the following:
- food
- income
- recreation
- transport
- tourism.

6 Mangrove

Another very important type of coastline found in Solomon Islands is mangrove swamp or mangrove forest.

Activity 16

You have probably seen mangrove, or may even have some near your school. If so, answer the following questions.

1 What kinds of areas does mangrove grow in?

2 What does a mangrove tree look like?

3 State three ways in which mangrove trees are different from most other trees.

4 How does the shape of the mangrove tree and the way it grows help it to live in muddy areas?

5 List the ways people use mangrove trees or mangrove swamps. What useful products do they obtain from them?

6 What may happen to the coastline if mangroves are cut down and the swamps are cleared?

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Like coral, mangrove is only found in warm tropical areas of the world. However, it grows in conditions almost opposite to that of coral. It likes shallow, muddy water at the edge of the sea where the sea joins rivers or swamps.

A mangrove looks like an upside-down tree, as the roots spread out from the trunk above the ground. These roots act like many legs to help it to stay upright in muddy places. Mangroves can grow in salty water because their roots filter the salt from the water. The roots help to trap mud coming down from the rivers and swamps and this creates new 'land'. However, it is very difficult to travel through a mangrove swamp, as it is full of mud and roots.

Figure 8.36 Mangrove trees have roots above and below the water.

Mangrove areas attract fish, ura and shellfish. Crocodiles are also common. Birds come to live off the fish and nest in the trees. The bird droppings, or guano, help to make the area even more fertile so, like coral, mangrove areas are very rich and useful.

Mangroves help to protect the coast from erosion by the sea, and from cyclones and tsunamis. Areas with mangroves were less affected by the tsunami in Western Province in 2007 than open areas.

Figure 8.37 A mangrove swamp in Sinarangu, Malaita

People use mangrove timber for building, as it is very strong and does not rot in water. People use it in places where they build houses over the sea. People also get fish, ura and shellfish from mangrove swamps, and meat from some of the birds. However, many villages also use mangroves as toilets!

So, like coral reefs, mangroves are very useful areas. However, mangrove areas are often cleared for building, to drain the land or for tourist resorts or harbours.

Activity 17

Some people think mangrove areas are useless and cut down the trees and clear the swamps. Based on what you have read, design a poster called: Why we should preserve our mangroves.

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7 Types of coast in Solomon Islands

All these coastal features can be found in Solomon Islands but we can divide coasts in Solomon Islands into several types.

Figure 8.38 Black sand coast, like this one in Guadalcanal, is the most common coastline in Solomon Islands. It is found in areas where the sand comes from volcanic or other rocks of our main islands.

Figure 8.39 White sand coast is found near areas of coral where the coral has broken down into white sand. Most small islands surrounded by reefs or coral atolls have white sand beaches.

Figure 8.40 Rocky coasts are found near steep slopes where not many rivers come down to deposit sediment on the beach, or where there is a fringing coral reef.

Figure 8.41 Coral coasts are found in areas with fringing coral reefs or atolls.

Figure 8.42 Cliff coasts are found where high land comes right down to the sea and is worn away, forming cliffs.

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Figure 8.43 Mangrove coasts are found on low, flat coasts where rivers or streams enter the sea or at the sheltered heads of bays.

Activity 18

1 Look at the coastline near your school or think of any coastlines you know. Decide which type of coastline it is.

2 Suggest the advantages and disadvantages of each type of coast for people to live on.

8 Other movements of the sea

In addition to waves, the sea also moves in two other ways.

Currents

Currents are places where all the water in the sea moves in one direction, as in a river. They are also caused by winds, especially when the wind blows in the same direction for a long period.

There may be local currents along the shore or between some of our islands. For instance, there is often a strong current between Ugi Island and the mainland of Makira and between Choiseul and Isabel.

Activity 19

Do you know of any parts of the sea in Solomon Islands which have currents? What difficulties will these currents cause to canoes, ships and people fishing?

Tides

Tides are the rising and falling of sea level which occurs daily, in every sea or ocean. This is caused by the pull of the moon and the sun on the oceans. The moon and sun, like all large bodies, have a pull of gravity. This gravity pulls the water in the sea upwards at one time of the day. It goes down a few hours later. The time and height of high and low tide changes slightly every day. You can hear the times and height of the tides broadcast on SIBC every day. The largest pull, forming spring tides, occurs when

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the moon is on the opposite side of the Earth to the sun.

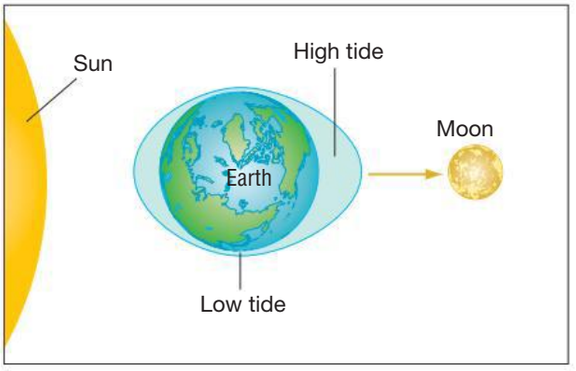

Figure 8.44 The influence of the sun and the moon on tides

Activity 20

In groups, suggest why SIBC broadcasts information about tides each day. Who is this for? Make a list of all the ways the tides affect the life of Solomon Islanders. Think of shipping and transport, wharfs and harbours, landing on islands with no wharves, coral reefs, fishing, etc.

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Glossary

arch part of a cliff formed by the collapse of two caves to form a bridge

atoll a ring-shaped coral reef that nearly or entirely encloses a lagoon

backwash water in a wave running back down the beach after breaking

barrier reef a coral reef larger and further out to sea than a fringing reef, forming a large, deep lagoon behind it, sometimes surrounding a whole island

bay part of the coastline which curves in towards the land between two headlands

beach Area of sand and rocks deposited along the coast

blowhole a hollow in the rocks with a roof formed by wearing away of the rocks by the sea or water

cave A hollow area in the rocks with a roof caused by the sea eroding the base of the cliffs

coast and coastline the area of land next to the sea

constructive waves Waves which build up the coastline

coral bleaching Coral which turns white and dies due to high temperatures above 32°C

coral reef an area of rocks and living organisms at the edge of the sea or in the sea, made up of coral polyps

destructive waves Waves which destroy the coastline

estuary the mouth of a river going into the sea

fringing reef coral reef forming a line just off shore, with a lagoon behind it

headland or point An area of land sticking out into the sea, often with a cliff at the end

lagoon an area of calm water cut off from the main part of the sea by a coral reef or sand bar or spit

long shore drift Movement of material along the beach by breaking waves

mangrove A type of tree growing in shallow salt water

patch reef Similar to a barrier reef but with many small islands in the lagoon behind

sand bar a long, low area of sand surrounded by the sea

sand dunes a hill of loose sand shaped by the wind

sand spit a long area of sand attached to the shore at one end but surrounded by the sea at the other. Often formed across the mouth of a river by long-shore drift

sea a large body of salt water

shore the edge of the sea where the beach is

shoreline the line between the sea and the land where the beach is found

stack a piece of rock sticking up out of the sea formed when part of the cliff is worn away leaving the stack behind. Often formed from the collapse of the roof of an arch

swash the action of a wave as it breaks and the water rushes up the beach

tombolo a sand bar which joins two cliffs or headlands, trapping a lagoon or lake behind it

wave-cut platform Flat area of rock formed by waves eroding the base of cliffs

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Chapter 9

Natural Resources of Solomon Islands

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1 What are natural resources?

Activity 1

1 Look outside your classroom and around your school and list the kinds of things the school uses from the surrounding **natural environment**.

2 What does the school use those things for?

3 What are some things the school has to get from elsewhere, because they are not available in the environment?

4 Explain how the school gets some of the things that are not available in its environment.

5 How would a shortage of those things affect the school?

Resources are anything important, valuable or useful to people. We have resources all around us. **Natural resources** are part of the natural environment.

Solomon Islands has many natural resources, such as land, forests, minerals and marine or sea resources. However, some of these resources are not used. Sometimes it is too difficult to use them. Sometimes we decide not to use the resources because of damage it will do to the environment.

Activity 2

Suggest reasons why it is sometimes difficult to use some resources.

Resources also include other things, such as technology or machines, and people with skills and knowledge. However, these are not part of the natural resources. Machines are made by people and the people of Solomon Islands are part of our resources, but we usually call them human resources.

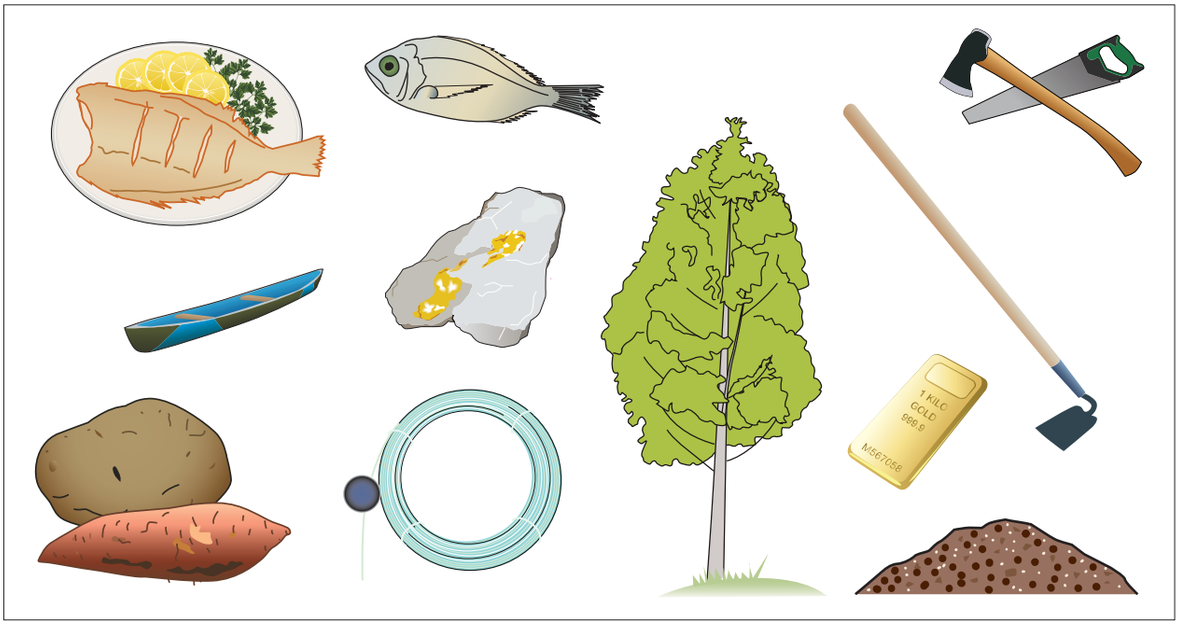

Figure 9.1 These resources can be found in Solomon Islands. Which are natural and which are made by people?

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2 Types and importance of natural resources in Solomon Islands

Activity 3

1 List five types of resources from the natural environment which your village or community use for their day-to-day living. Explain what they are used for.

2 Explain how each of these resources benefit people.

3 Are there any natural resources which your community does not have enough of? How does this affect the people?

4 In groups, make up and act out a role play where people in your community argue over the use of natural resources. What are some things they might argue over? Why?

5 Some natural resources can get used up. Give two examples of natural resources which may be used up. How do you think the community should ensure that such natural resources are still available for future generations?

Activity 4

1 Read the story below and make a list of all the natural resources which the people in Vanikoro make use of, and what they are used for. Copy and complete the table.

Natural resources used	What they are used for

2 Evelyn says that ships only go to Vanikoro two or three times a year. Would people still be able to live, even if a ship did not come? What things might they miss if there was no ship? Are these things essential or could other things be used instead?

Evelyn from Vanikoro

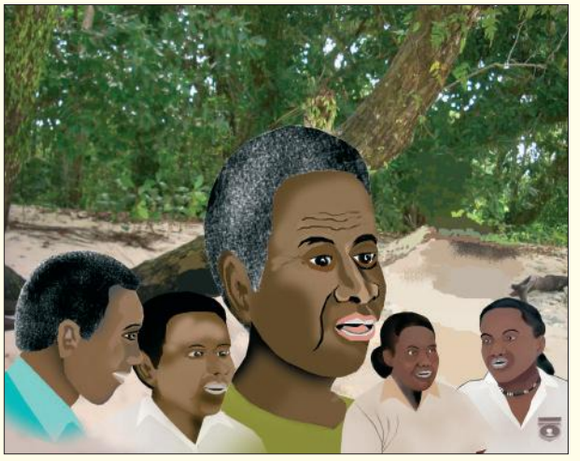

Figure 9.2 Evelyn

Hello! My name is Evelyn and I live in Vanikoro in Temotu Province. I live with my family—my husband, Eric, our four children, my husband's mother and father and my brother's wife and children.

We look after ourselves here by growing kumara, cassava and cabbage in plots around the village, and some taro in a swamp in the valley. We have coconuts and many fruit trees and we dry breadfruit to make *nambo*. We have four pigs which we use for feasts when someone gets married or at Christmas.

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Figure 9.3 The family is fed with food straight from the garden.

The house we live in was originally built by Eric's father out of local timber and sago palm leaf and we have repaired it regularly. The floor is made of split bamboo, with coconut leaf mats to cover it.

Eric goes fishing in an outrigger canoe which he built. We are lucky that there are many big trees here for canoe building, and we learnt how to use outriggers from the Tikopians, who also have a village here. We also fish in the river which flows near the village and World Vision recently helped us to build a piped water supply from the river. We use the river for washing and swimming but only downstream, below the water supply.

The Tikopians follow their customs strongly and some old men still wear *kabilatos* made of tapa cloth. They often do custom dancing and wear mats or *te kie* made of pandanus and paint their bodies with turmeric. We no longer do our dances so much, as the young people have gone to school and are no longer interested, but we still use pandanus to make sleeping mats.

Because ships do not come regularly it is hard to sell any of our crops, but we sometimes collect trochus shell to sell to pay for our children's school fees. Luckily, two of my brothers and a sister work in Lata and send us money for other things we need. A logging company has offered to buy timber from us

Figure 9.4 Tikopians dancing in traditional dress: tapa or bark cloth *kabilato*, pandanus mat or *te kie*, flowers and a wooden 'dance bat'.

but at present we cannot agree as there are too many land disputes. Some of our people argue with the settlers from Tikopia and Reef Islands and say that they should not be allowed to buy or use land here. This has even led to fights.

Land resources

Land is one of our most important resources. Every year the land provides enough food and other needs for our people to stay alive. Perhaps land was one of the resources you suggested that people argue or fight about when you did your role play in Activity 3? As the story says, even in Vanikoro there are arguments over land between the people of Vanikoro and people from Tikopia and Reef Islands who have come to settle and use the land there.

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Activity 5

Give examples of other places where people often argue over land. Suggest a reason why people argue over land.

Subsistence living

Many people in Solomon Islands, like Evelyn, get most of their needs from the land. The land gives food, building materials, clothes, tools and medicine. Land can be used again and again if it is cared for properly. When people rely mainly on the natural resources we call it **subsistence**. Crops which are grown for people themselves to eat are called subsistence crops. The main food crops grown are called **staple** crops.

Not all the land in Solomon Islands is fertile or good for growing crops. There are lots of areas that are not used for farming. These areas are swampy, too high, too steep or too dry to grow crops. The areas that have the most fertile soil are the flatter lowlands near the coasts or along some of the bigger river valleys, where most of the subsistence farming takes place. However, some of the areas which are not good for crops have natural resources which are useful for other things.

Activity 6

1 What are the main staple crops in your area?

2 Can you think of some natural resources which are good for other things?

Cash crops

We also use our land to grow crops for sale to earn money. For example, if we have more than enough melons or potatoes, we sell some at the market. Sometimes we grow crops especially

Figure 9.5 What sort of natural resources might this area contain?

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for sale, such as cocoa, coconuts for copra, betel nut or peanuts. The crops that we grow for sale are **cash crops**. When very large areas of cash crops are grown it is called a plantation. In the next few chapters we will look at these types of farming in more detail.

Figure 9.6 Cocoa being grown as a cash crop in Makira

Activity 7

There are advantages and disadvantages in growing cash crops rather than subsistence crops. Read the following story of Michael. Then copy and fill in the table below to suggest the advantages and disadvantages of cash crops.

Cash crop	Advantages	Disadvantages

Michael from Rannonga

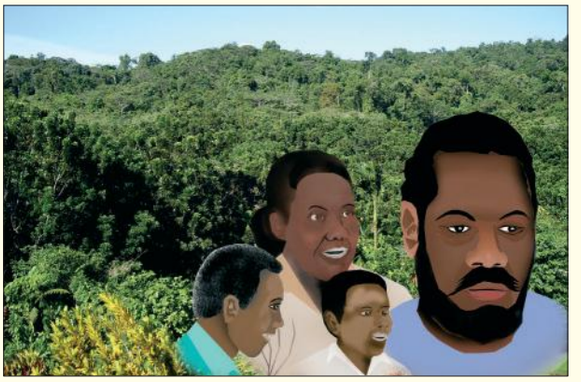

Figure 9.7 Michael

I am Michael and I live in Rannonga in Western Province. My family and I have a large piece of flat land near the sea. A long time ago we cleared most of this for a large coconut plantation. We built a big copra drier and started to make copra which we sold in Gizo, where overseas ships call in to buy it. Sometimes the copra price went down and we did not make money, so in the 1980s we followed the advice of the agricultural officer and kept some cattle under the coconut trees. This worked well for some time, but then we found that barges were not calling in regularly to buy the cattle, so it did not seem worth the hard work of looking after the cattle and we killed most of them for feasts. During the period of tension in 2000 we found it hard to sell anything so we became very short of food.

Figure 9.8 A cocoa plantation

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Later we were told that the price of cocoa was much higher than copra, so we cut down some of our coconut trees and replaced them with cocoa. This gives us quite a good income to buy food from the shops, to add to the small amount of food we grow ourselves, and to buy other things we need. In 2007 the price of copra went up very high again so we started drying and selling that again as well. We bought a fibreglass canoe and outboard motor which we use to take the copra and cocoa to Gizo. We bought a chain saw which we used to cut down some of our trees to build ourselves permanent timber houses, and have roofed these with roofing iron.

Then suddenly in late 2008 the price of copra and cocoa both dropped very low and we were left with a problem of how to buy food again. Now we have been told that Solomon Islands will not export copra from 2010 and we have to try to sell coconuts to make into pure coconut oil.

Climate resources

For crops to grow well, they need the right amount of rainfall and sunshine and the right temperatures. So the **climate** is part of our natural resources. Solomon Islands is located near the equatorial area where there is high rainfall, good sunshine and high temperatures throughout the year.

Water

Water is an important part of our daily lives. Without it humans and other living things cannot survive. A clean, fresh water supply is necessary for good health and healthy living. All of people's activities, such as agriculture and **industry**, rely on enough water resources. So water is also part of our natural resources.

If people use water properly it will support their healthy living. However, if they misuse water then it will affect their health and the other living things in the natural environment.

Figure 9.9 Our climate has heavy rainfall and gives us a good water supply.

Activity 8

1 Why is our climate good for farmers?

2 Give two examples of ways in which people may sometimes misuse or spoil water supplies.

Figure 9.10 A brown polluted river in Makira. Before the area above this river was logged the water was clear; now it is too dirty for drinking or swimming.

Forest resources

Land which is not or cannot be used for farming is often full of forests. Forests are also used to meet the needs of people. Some of these uses bring benefits, some bring problems.

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Activity 9

1 Copy and complete the table. Show the reasons why people cut down forest areas or trees and the benefits they get from doing this. The first line is done for you.

Reasons for cutting forests or trees	Benefits for people
Use timber for building houses	Good strong houses

2 All of these bring benefits to people. Suggest what problems cutting down forests may bring:
- **a** to the soils
- **b** to wild life
- **c** to water supplies (Figure 9.10 will help you).

3 If we cut down trees too fast there may be none left when we need timber. List two ways we can make sure this does not happen so that we always have a supply of timber.

Figure 9.11 Flooding which occurred in West Guadalcanal in February 2009

Most of Solomon Islands is covered with forest. There are many trees and other plants that are useful (betel nut, wild apple, nuts, etc.). Trees are used for building houses, bridges and canoes. The forest trees are also logged and sold overseas or used in forest resource industries for hardwood timber, plywood and wood chips.

Some examples of trees that are used in forest resource industries are rosewood, akwa and vasa.

Not all forest resources can be used for sale or in the forest industry. Many forests are a long way from a river or transport system. It can be very hard to get the logged trees to a market. Many hillsides are too steep. If trees are cut on the steep slopes there is erosion of the soil which may cause flooding, as can be seen in Figure 9.11. Other forests are special because they have many unknown species (types or groups) of plants and animals in them. They need to be protected for the future. Some owners of forests do not want their trees to be logged as a resource, because the forests are important to their culture and way of life.

Marine or sea resources

Not all our natural resources come from the land. There are many natural resources in the sea as well.

Figure 9.12 Coastal fishermen and women catch fish all year round for food or for sale.

Coastal and island communities use fish for their source of protein. The kinds of sea resources used in Solomon Islands include reef fish, tuna, lobster, sea cucumber (bêche de mer) and seaweed. All are important seafood exports.

Solomon Islands has one of the best sea areas in the world for catching tuna. A lot of tuna is caught by foreign fishing boats, but we also have Solomon Taiyo, now owned by Solomon Islanders.

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Activity 10

1 Ask older people whether they think the amount of fish you can catch today is as much as they used to catch in the past.

2 If not, why do you think it is decreasing?

3 What can we do to stop it decreasing?

Activity 11

Sketch a map of your local village and identify the available natural resources around your village.

3 Looking after our natural resources

Activity 12

1 Apart from fish, are there any other natural resources in your local community which are declining?

2 Why do you think they are getting less?

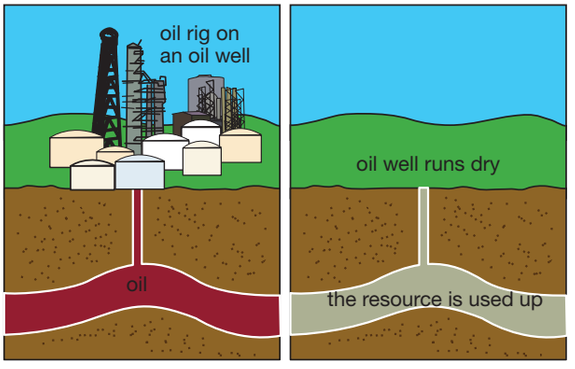


Figure 9.13 Non-renewable (oil) and renewable (trees) resources

3 How do you think we can use these resources to ensure they are always available for future generations?

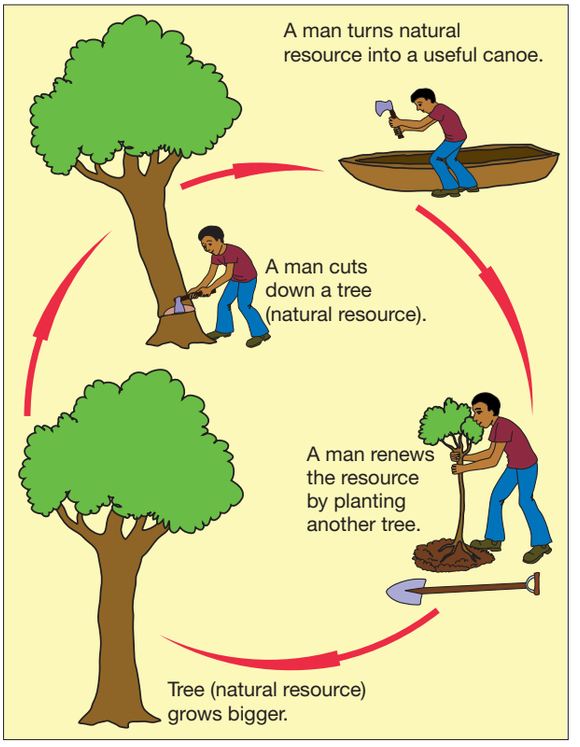
4 What effect does an increase in population have on the natural resources?

5 How do you think you could persuade your community or village to appreciate the importance of looking after resources to ensure they are always available for people in future?

Renewable and non-renewable resources

All our resources are either **renewable** or **non-renewable**.

Renewable means being able to make new again or replace. For example, if you cut down a tree to use as a resource, you can plant another tree to grow naturally in the same place. Later you can use the new tree.



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All Solomon Islanders who live in rural areas depend on things from the natural environment, for example, root crops, vegetables, animals and fish. This shows the importance of the environment to Solomon Islanders. It is important that these natural resources are properly looked after or managed so that we have a continuous supply of them.

Non-renewable resources

Activity 13

1 List two examples of natural resources which always renew themselves naturally.

2 List two examples of natural resources which we can renew after we use them.

3 Write one example of a natural resource which cannot be replaced once it has been used.

Mineral resources

Examples of **non-renewable resources** are rocks or minerals such as gold, copper, nickel or oil.

Non-renewable resources are resources that cannot be replaced once they are used up. For example, when we take a mineral such as gold, copper or oil from the ground, there is no way that the mineral can be made again. When it has been taken once, it cannot be taken again.

Figure 9.14 Gold Ridge Mine

The only **mining** company in Solomon Islands by 2008 was mining gold at Gold Ridge in Central Guadalcanal. New mining companies are still **prospecting** for new mineral sites to mine if there is enough of the mineral. They can give good profits to the companies and government of Solomon Islands and to the resource owners, that is, the people who own the land where the minerals are found.

Activity 14

1 Suggest how mining by big companies like Gold Ridge can bring benefits to:
   - **a** the resource owners
   - **b** the government
   - **c** the company itself
   - **d** ordinary Solomon Islanders.

2 Suggest what problems mining may cause to the land owners.

Sustainable and unsustainable use of natural resources

Even renewable resources can be used up if we use them too fast. Renewable resources can be used in a **sustainable** or an **unsustainable** way. For example, if people take logs from the forest faster than they can renew themselves, or without replanting any trees to replace them, this is unsustainable. The number of trees which we can cut down will decrease. There may be no useful trees for our future, and we may have nothing to build our houses with.

We need to take care of our resources for future generations. We can do this by using them wisely. This means we don't use them faster than they can renew themselves, or we replace those resources we use. This is known as a sustainable rate.

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Non-renewable resources should also be used carefully. The resource must be used in a way that makes people's life better, now and in the future. Money which comes from selling non-renewable resources must be used wisely, so that future generations have some income. If we sell all our minerals and use the money to import more beer, that is not going to benefit anyone in the future. If we use money from the gold mine to help us build schools and hospitals or better roads, that will help us in future.

Figure 9.15 The people around Rate School have used local timber and their own money and labour to build staff houses for the school.

Our government has also signed international agreements that are aimed at protecting the environment. This is when countries that are worried about the way we are using resources get together to decide what should be done.

Activity 15

Below are three examples of international agreements the Solomon Islands Government has signed to protect the environment with other countries who supported these ideas. Read the text and answer the questions.

i Marine Pollution Convention (London)

This law prevents marine or sea pollution by stopping people from dumping waste and other matter into the sea. Countries want to protect all sea resources such as fish and other marine animals from poisoning.

1 What sort of waste do you think ships dump at sea? Do Solomon Islanders also dump waste in the sea? What harm does this do?

ii Natural Resources and Environment of South Pacific (SPREP) Convention

This law is to protect natural resources and the environment by managing and developing the marine and coastal environment, and protecting them from damage through other human activities.

2 What are the main human activities which damage the marine or sea and coastal environment?

3 Give some examples of human activities that can damage the coastal environment which the SPREP Convention is responsible for protecting.

iii Liability for Oil Pollution Damage

This law ensures ship owners who cause pollution and damage to coastal areas of any country are responsible for it.

iv Agreement to protect and preserve the Coral Triangle

The Coral Triangle is the largest area of coral in the world. It stretches from Indonesia, Timor Leste (East Timor) and the Philippines to Papua New Guinea, Solomon Islands and Vanuatu. In 2009 all these countries signed an agreement to protect and preserve the coral in this triangle.

4 What are the advantages in protecting the coral in this triangle?

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Wise and unwise use of resources

Activity 16

We can use our resources wisely or unwisely. Read the story of Barnabas from Makira and answer the questions below.

1. Why did Barnabas and the people in his village decide to allow the Malaysian company to log their land?
2. What benefits did they expect to get from the logging? What benefits did they actually get?
3. List the problems which logging caused them.
4. In groups, discuss whether it would have been better to continue with eco-tourism rather than allowing logging to happen.

Barnabas from Makira

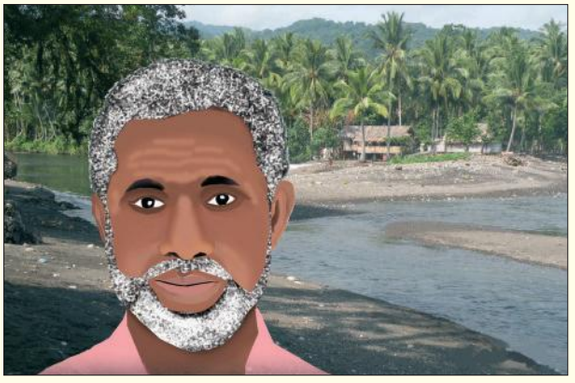

Figure 9.16 Barnabas

I am Barnabas. I am a Chief from Arosi district in Makira. We have a large area of land and the population of this area is not very big. We have a large river running through the village and this gives us a good water supply. There is a big reef offshore which we use for fishing and collecting shells.

A few years ago the Makira Conservation Society helped us to build a small leaf house and kitchen so that tourists could come and visit us, learn about life in the village, dive on the reef and walk up the river valley to watch the bird life which interested them. They called this eco-tourism.

Unfortunately, during the tension, people stopped coming, so we lost our income from this. After the period of tension, a Malaysian visited our village and asked to talk to me as the Chief. He said his company would like to come and cut some of the trees from our land and he offered us a large sum of money. He said they would pay $80 for each cubic metre of timber they cut and that each tree contains many cubic metres, so we would make at least $400 000 from selling our timber. He also promised to build us a road, a clinic and a new school.

Figure 9.17 Logging

We have plenty of land with trees, so we decided to allow the company to come and cut them. This was far more money than we would get by renting a small house to tourists and we would also get a road, a clinic and a school. The company came in with big machines and built a logging point near the village, so barges could call in and collect the timber. We were amazed at how quickly the company could cut the trees, and we began to get money which we used to buy two fibreglass canoes and outboard motors, as well as iron roofs for our houses. We no longer needed to grow food as we could buy it from the store, so we got used to living on noodles, rice and *taiyo*. The men also began drinking beer.

One of the Malaysians asked if he could marry my daughter and take her back to Malaysia, and

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I agreed as he offered me far more money than I would normally get for bride price.

After about two years we realised that more than half our timber was gone and we began to worry what the company would do when the trees were finished. They had built roads but only to the areas where they were logging in the bush, which was not really useful to us. They improved the clinic, which they also used for their workers, but there was no sign of the new school. We also heard that they were selling our timber for far more money than they were paying us for it. We started thinking of taking the company to court but when we went to see a lawyer he said we would need legal agreements to prove what the company promised, but we did not have these.

Now, after only four years, the company has left and still owes us some money. The bridges on the roads have fallen down, the school was never improved and we no longer have money to buy medicines for the clinic. Worst of all, my daughter is pregnant, but the Malaysian who married her said he could not take her because he could not get her a visa to enter Malaysia. One of the other Malaysians said he already has a wife at home.

In addition to that we have realised that we no longer have enough timber left for our own houses and, ever since the logging, our river water is too dirty to drink. We used to hunt pigs in the bush but now there is very little bush for them to live in. We do not catch many fish on the reef now and think this may have been made dirty by the water from the river. We really regret what we did, but it is too late now.

Figure 9.18 Consequences of logging include the loss of topsoil which is washed into rivers by rain.

Activity 17

Answer the following questions about forestry resources.

1. What are possible future uses of trees if they are not sold to the logging companies?
2. How will the weather change if forests are lost?
3. How can we preserve timber resources now and in the future?
4. How can we protect the soil from damage when timber is cut?
5. How can we take care of the rivers to prevent pollution?

What is the government's role?

The government of a country can make laws to protect the country's resources and environment. Each country has its laws to control how people use their own resources and environment. For example, there are laws about dumping mine waste into the river systems, about how and where trees can be cut down, about how many and at what time some fish or marine resources can be harvested.

The problem is that many of these laws are not enforced, or the people who want our resources bribe people not to enforce the laws. It is up to the landowners or others who see the destruction taking place to report matters to the police or other authorities. Too often, people just keep quiet, as the people in Barnabas' area did, until it is too late.

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4 Forest resources in other Pacific Rim countries

Pacific Rim countries are the countries bordering the Pacific Ocean. They include countries of the Americas, Asia and South-West Pacific. Figure 9.19 shows the Pacific Rim countries which are the main exporters and importers of logs or tropical round wood.

Some of the main exporting countries include Malaysia, Burma, Papua New Guinea and Solomon Islands. The main importing countries for these logs within the region include Japan, China, Korea, the Philippines, Thailand, Malaysia and Indonesia.

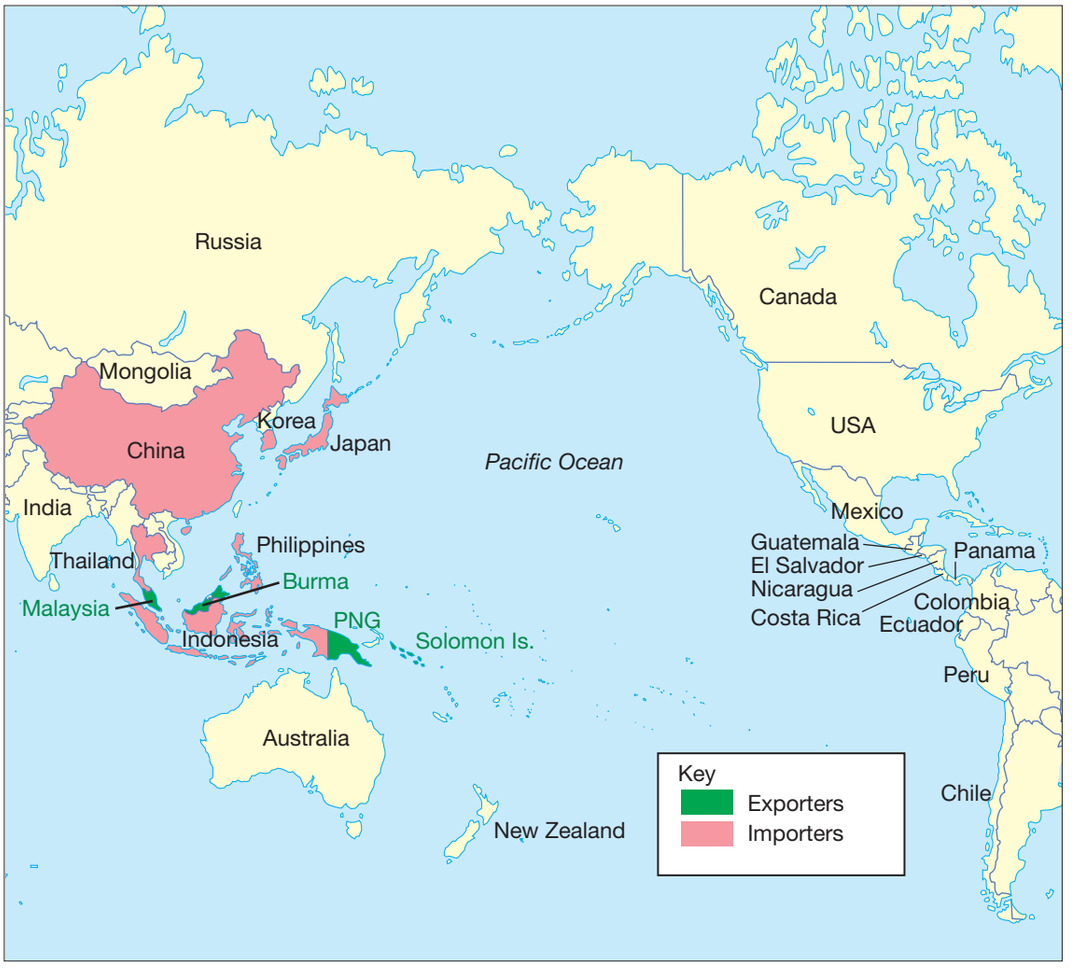

Figure 9.19 The Pacific Rim's largest exporters and importers of tropical roundwood

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		Exporters					
		Malaysia	Papua New Guinea	Solomon Islands	Burma	Non-Rim exporters	**Total imports**
Importers	Japan	2,945	1,448	371	6	1,025	5,795
	China	2,093	71	–	45	1,673	3,882
	Korea	371	432	179	1	52	1,035
	Philippines	61	215	150	–	253	679
	Thailand	208	–	–	60	294	562
	Malaysia	na	–	–	3	–	228
	Indonesia	173	–	–	3	–	187
	Non-Rim Importers	741	–	–	305	2,855	3,665
	Total exports	6,592	2,166	700	423	6,152	16,033

Table 9.1 The Pacific Rim's largest exporters and importers of tropical roundwood, with directions of trade, by volume (thousand cubic meters), 1997

Activity 18

1 Trace the map in Figure 9.19 into your book (by putting your exercise book page over the map—do not write in the text book). Label the names of the main exporting and importing countries of logs or tropical roundwood. (Use the world map on the inside cover of this text book to help you with the location of the countries.)

2 Refer to Table 9.1 and answer the following questions.
- **a** Which country is the biggest exporter of tropical wood? What quantity did they export?
- **b** Which country is the biggest importer? What quantity did they import?
- **c** List the names of the countries which Solomon Islands exported their logs to.
- **d** What is the total export of logs from Solomon Islands?

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Glossary

cash crop a crop that is commercially grown for sale

climate average weather conditions over a long period of time

industry the production of goods from raw materials, especially in factories

mining the activity of removing or extracting rock from the Earth's crust

natural environment the living conditions of a place resulting from the interactions of its natural features, e.g. climate, soil, vegetation

natural resources resources that exist in nature or are not made by human beings

non-renewable resources resources that once used or harvested, cannot be grown or renewed again

Pacific Rim countries the countries of the Americas, North Pacific, Southeast Asia and Southwest Pacific which border the Pacific Ocean

prospecting searching an area for minerals such as gold, oil or nickel

renewable resources resources that can be used, harvested and grown over and over again

resources things or skills that are useful to people

subsistence growing crops for the farmer and family to eat rather than to sell to others

sustainable using natural resources in a way that does not harm the environment

staple important

unsustainable when natural resources are used too fast to be replaced

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Chapter 10

Small-scale Farming

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1 Traditional farming: shifting cultivation

Activity 1

Think of your own village or any area you know well. Write the heading, 'How to make a garden in (*name your area*)' in your exercise book. Answer the following questions.

1. What kind of land areas do people usually choose to make gardens?
2. What kinds of tools do they usually use?
3. What types of crops do they usually grow?
4. Do people spend money on some of the activities involved in the making of the garden? If so, explain the kinds of things money is spent on.
5. What do people use to plant or propagate new crops: seeds, vines or cuttings, or root stalks (part of the root)? Where do they get these from?
6. What work do different members of the family do?
7. If insects and diseases attack the plants, how do people get rid of them from the garden?
8. What do people do with the food produced?

Most people in Solomon Islands are partly subsistence farmers. Subsistence means that they grow food mainly to keep themselves and their families alive, rather than to sell. Gardens are made by clearing the bush so that crops can be planted. As gardens lose their fertility after a year or so, they are abandoned and the farmer shifts to a new area of bush and clears land for a new garden.

The most important crops are **root crops**, such as sweet potatoes, cassava, yams and taro, which are rich in carbohydrates. These are energy-giving foods. Nearly all the work is done by hand. Tools are simple; fertilisers are not used and human beings, rather than animals or machines, do the work. The system is simple, sensible and generally works very well.

Figure 10.1 An abandoned garden, Isabel

The type of farming that goes on today is not very different from the kinds of farming that went on hundreds of years ago. Clearly, this sort of farming is suited to Solomon Islands conditions. It has worked well in this hot, wet climate and on the tropical soils of these islands. The system has also worked well in many other parts of the world, such as Africa, South America and South-East Asia.

Because the farmer shifts, or moves, to a new piece of land every few years, this kind of farming is called **shifting cultivation**. It is the most common type of farming in Solomon Islands. It is sometimes called **slash and burn** cultivation because farmers slash or cut down the trees and bush, and then burn it to clear the land. Only small patches of bush are cleared at a time and the soil is left to rest for a long time to restore its fertility. When the land is being rested we say it is **fallow**, so another name is **bush fallowing**. No fertiliser, other than

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ash from burning, is used. No complicated equipment or machines are needed and people understand the system well.

Because only a small area of land is used at one time, we call this small-scale farming. Because the area growing each crop is small we often use the word gardens, rather than farms.

Activity 2

1 Explain two important facts about shifting cultivation.

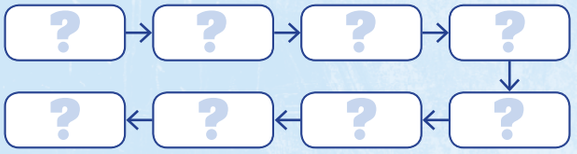
2 Explain two ways in which farming in your home area is similar to that described above or two ways in which it is different.

3 Does the garden use the same land every year, or do people make a new plot after some time? Explain why.

4 Do you use fertilisers and **insecticides** in your gardens? Explain why or why not.

5 How do your family or village people use the food produced from their gardens?

6 Copy, enlarge and complete the flow chart. Put the correct text from below in each box to show the order in which things are done.



a Harvest
b Weed
c Move to a new area
d Sow crops including cassava, potatoes, etc.
e Burn remaining vegetation
f Select a suitable area
g Fell trees with axes
h Soil soon loses fertility

7 Describe how clearing the forest may cause:
a the land to suffer from soil erosion
b the soil to rapidly lose its fertility.

8 What happens to a system of shifting cultivation if the population increases? Explain your answer.

Characteristics of shifting cultivation

The main characteristics of shifting cultivation include the following.

- Almost all the food is grown for own consumption rather than for sale.
- Root crops are the most common crops.
- Tools are simple, for example, sticks for digging mounds; knives, axes, hoes or spades, etc.
- No fertilisers are used.
- Farmers shift to a new site after two or three years because the fertility of the soil is quickly lost.
- People grow a variety of crops in the same garden.

Figure 10.2 Clearing a new garden near Kolotubi village, Isabel

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Why we use shifting cultivation

Shifting cultivation is a very suitable method of farming for Solomon Islands because of the type of climate we have and the effect this climate has on the soils.

Activity 3

Study the rainfall and temperature figures below for Buala. They are similar to those of Kolotubi. Answer the questions that follow.

	Jan	Feb	Mar	Apr	May	Jun
Rainfall mm (Average)	340	340	370	330	310	240
	Jul	Aug	Sept	Oct	Nov	Dec
	330	230	330	360	290	350

Total rainfall: 382 cm

	Jan	Feb	Mar	Apr	May	Jun
Temperature °C (Average)	28	27	28	28	29	28
	Jul	Aug	Sept	Oct	Nov	Dec
	27	27	28	29	30	31

Table 10.1 Climate at Buala, 1982–93

1 Draw a bar graph to show the average rainfall for each month at Buala. Use a vertical scale of 1 cm : 30 mm of rainfall.

2 Draw a line graph to show average monthly temperatures. Use a vertical scale of 1 cm: 3 °C.

3 Places with a temperature of 30 °C are considered hot. In many places, like New Zealand or Britain, temperatures only reach 30 °C on a few days of the year in summer. Many parts of New Zealand and Britain have less than 1000 mm of rainfall in a year. Using these ideas, copy the paragraph below and fill in the blanks to describe the climate of Buala.

The climate of Buala

The climate of Buala is _____?_____ _____?_____. Temperatures throughout the year are _____?_____ and rain falls in every _____?_____. The average temperature is about _____?_____ °C per month and the total rainfall for the year is _____?_____ mm. The wettest month is the month of _____?_____ and the driest is _____?_____.

The range in temperature, that is the difference between the temperatures of the hottest and coolest months, is only _____?_____ °C, as you would expect in a place so close to the equator.

Solomon Islands is very close to the equator and between the two tropics. The climate is called **tropical equatorial**. There is rainfall every month and temperatures are always high.

The climate affects the soils, the natural vegetation, insect life and the crops that can be grown here. Because it is always hot and wet, trees and other plants grow fast, so the vegetation is thick forest with tall trees and much under-growth. This is called **equatorial rainforest**.

Figure 10.3 Tropical forest in Isabel

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Tropical soils

Activity 4

You have learnt about soils in your agriculture lessons: about what soil is and the effect of rainfall and temperature on soils. From what you have learnt, answer the following questions.

1. How is soil formed and what does it contain?
2. What kind of material in the soil forms the main food for plants?
3. Which part of the soil usually contains the best food for plants?
4. What effect does rain have on this part of the soil?
5. What is leaching? Why does leaching occur rapidly in areas of heavy rainfall and high temperatures like Solomon Islands?
6. Why do Solomon Islands soils lose their fertility quickly when the vegetation is cleared? The diagram in Figure 10.4 might help you.

Tropical soils often appear to be very rich and fertile. Because the heat and heavy rain breaks up the rocks easily the soils are frequently very deep. Because the forest is thick and green it provides plenty of **humus** when the leaves and other vegetation die. While the trees are growing, they provide shade which protects the soil from the fierce heat of the sun. The roots hold the earth together and the fallen leaves provide fresh humus. However, the soils are not as fertile as they seem. Once the trees are chopped down, the heavy rain washes away (leaches) the humus which provides the goodness and the sun draws harmful mineral salts up to the surface. The soil can be quickly ruined and a thick, rock-hard crust, called an **iron pan**, may form on the surface as shown in Figure 10.4.

Many soils in Solomon Islands, like that shown in Figure 10.5, are red because they contain a lot of iron. These soils are called **laterite** and quickly become infertile once the bush has been cleared for a garden.

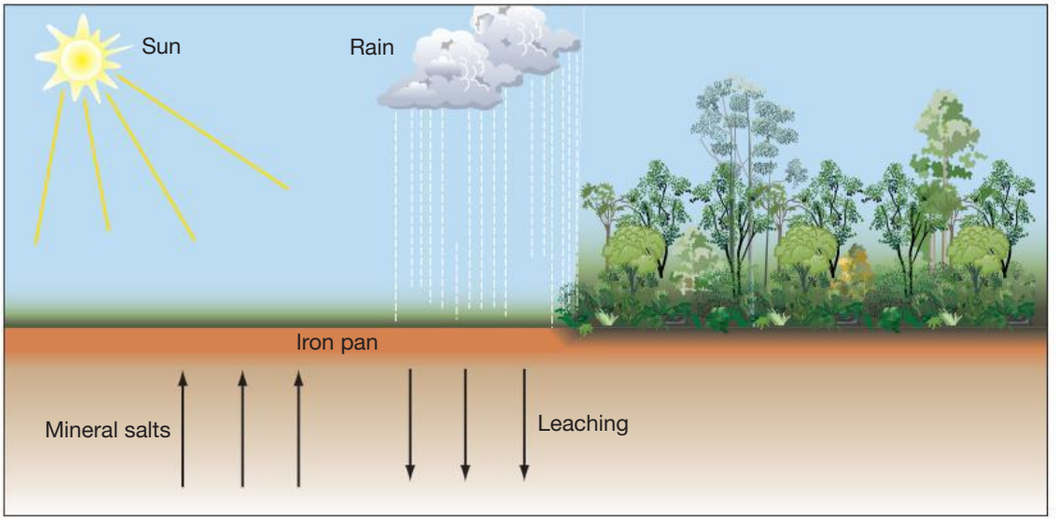

Figure 10.4 An iron pan and laterite soil

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Figure 10.5 The red colour in laterite soil is caused by iron.

Activity 5

Look at Figure 10.5. Think of areas of soil you know. Are soils normally this colour? When do they become this colour? What does this show you about the effect of clearing vegetation?

This is why people use shifting cultivation. Only a small area is cleared, and some trees and bushes are often left, so the ground is still protected from the heavy rainfall. The farmer shifts to a new clearing before the soil is exhausted and the soil is then given time to rest or lie fallow.

Shifting cultivation is therefore the traditional or custom method of farming. People farm this way because their fathers and grandfathers farmed in the same way. It has become a way of life and an essential part of Solomon Island culture. Cash was not very important to most Solomon Islanders until fairly recently, so farming was carried out entirely to satisfy the needs of the family. There was no point in increasing output as this would produce a surplus that the farmer had no way of selling.

Activity 6

Use the text above to help you answer these questions.

1. Describe three ways in which shifting cultivation helps to protect the soil.
2. Does shifting cultivation need a large number of people to do the work or can it be done by each family on their own?
3. Does shifting cultivation need money?
4. Does shifting cultivation need complicated tools or machinery?
5. For shifting cultivation, why does each family need a lot of land?
6. If the population in an area increases and there is not enough land, what will happen to the length of the fallow period?
7. If the fallow period is shortened, what will happen:
   - **a** to the soil?
   - **b** to the amount of crops that can be grown, i.e. the yield?
8. With shifting cultivation, is it easy to produce a surplus of crops for sale?

Activity 7

In groups, discuss the advantages and disadvantages of shifting cultivation.

In your exercise book, summarise the advantages and disadvantages of shifting cultivation by copying and filling in a table like the one below.

Shifting cultivation	
Advantages	Disadvantages

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CASE STUDY
Martin's gardens

Activity 8

Read the account of farming in Kolotubi below. Think of any village you know. It may be your own home village, one you sometimes visit, or one near your school. Write a comparison between this village and Kolotubi by copying and filling in the table below. Write about both the similarities and the differences.

	Kolotubi	Your village
Province		
District		
Type of land		
Ownership of land		
Main food crops		
Main use of food crops		
Tools used for clearing		
Mixed cropping or separate?		
Who does the work?		
Cash crops		
Cooperation in the community		
Recent changes or improvements in area		
Problems		

Kolotubi village, Hograno, Isabel Province

We will look at one particular area where shifting cultivation is used, to show what changes are taking place.

Figure 10.6 Chief Martin Liumana and his family of Kolotubi

Activity 9

Look at the map of Kolotubi in Figure 10.7 and answer the following.

1. Approximately how many people do you think there are in the village? How can you tell?
2. Suggest why the village was built on the east side of the river, not the west side.
3. What three types of trees are grown in the village area?
4. Do people live near their gardens?
5. Where are most of the forests found? Can you suggest why?
6. Describe how to get from the church to Martin's garden.

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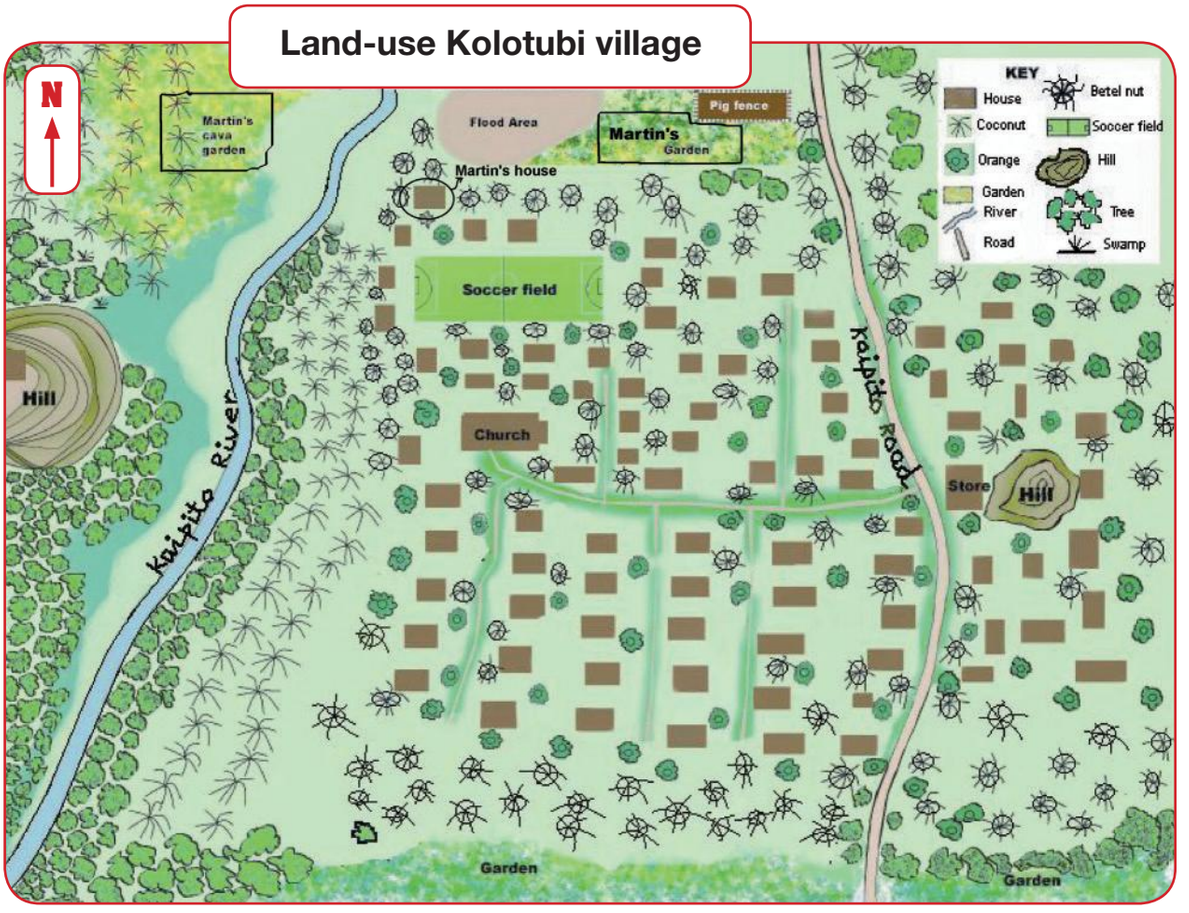

Figure 10.7 Kolotubi area

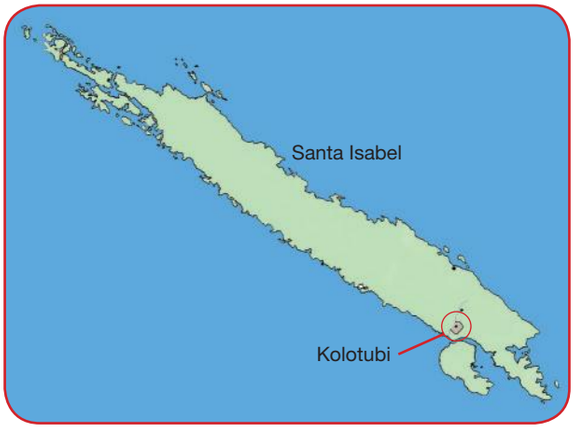

Figure 10.8 Isabel Island

The people of Kolotubi village

The people who live in the Kolotubi community in the Hograno District of Isabel speak a dialect known as the Uta dialect. The Uta dialect is similar to the Maringe dialect. Maringe is the next language group to Hograno and also covers the area where Buala, the provincial headquarters, is located.

The people in the area are mainly members of the Church of Melanesia (COM). Kolotubi village is situated beside the Kaipito River. Kolotubi village is about ten kilometres inland from Kaevanga coastal sea port and is linked by the Kaevanga–Kolomola road. Kolomola is further inland from Kolotubi. This road stretches through flat and very fertile land.

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Figure 10.9 Some of the Kolotubi villagers

The land is customarily owned, so it is owned by the extended family or the clan, headed by the eldest person in the clan. The community, like all those in Isabel, is a matrilineal society where the eldest women in the family inherit the land and have right to land ownership. When a woman dies, the land passes to her eldest daughter. A man only has the rights to use land owned by his mother or wife, although these days men often make decisions about the land.

The village has a committee of village chiefs who look after the affairs of the village. One of the village chiefs is Mr Martin Liumana, who cultivates four plots of land for his subsistence livelihood. Through his wife he also owns a kava garden, some turmeric, coffee, coconut and cocoa trees. He is now planning to use one of the plots of land to plant rice.

Lifestyle of the people in the area

Traditionally, the people in the Kolotubi area are subsistence farmers. They cultivate the land and plant root crops for their livelihood. They also fish in the rivers and streams and hunt for animals from the surrounding natural environment.

Martin Liumana, like all his neighbours, clears a piece of bush using one of two ways. The most usual method is called *nubra*. Using an axe and a bush knife, he clears away all but the biggest trees and he leaves the branches on the ground to dry. Most of the rubbish is then piled up around bigger tree stumps and burnt. This method clears the ground, kills off some pests and provides a supply of fertiliser in the form of ash. Martin does nearly all the heavy work himself, but his wife and children brush and burn the small vegetation.

No attempt is made to clear all the stumps or level out the ground before planting. Once the soil has been **tilled** with a digging stick or hoe, it is ready for planting. Traditionally, this is women's work. The women also do the weeding and harvesting.

Figure 10.10 A garden being cleared using the *nubra* method

Rather than make separate gardens scattered in the bush, Martin prefers to extend his old garden as one section becomes exhausted. If he is in a hurry to get the ground cleared, or the weather is very wet, Martin uses a method called *haglu*. He clears the land completely, throws the rubbish away, and makes the mounds and plants his crop straight away as he goes along.

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Different varieties of crops can be planted. The main crops include sweet potato or kumara, taro and cassava. Minor crops are banana, pineapple, tobacco, cabbage and sugar cane. The crop planting in the garden does not follow any set pattern. Usually a variety of crops can be mixed in the garden. Crops like tobacco, pineapple or banana are usually planted at the edge of the garden to mark the garden boundary.

Because of the kind of tools Martin and his wife Christina have, slash and burn cultivation works well. It takes a few weeks of hard work to make a garden. After that only light weeding needs to be done. Shifting cultivation is efficient because it requires the minimum amount of labour and is suited to the technology or tools available. Shifting cultivation works well in **communal societies** in the tropics. The extended family and friends can all help brush, plant and weed the gardens.

Figure 10.11 Martin's gardens and the types of crops he planted: cassava and potato in one garden (top) and a plot of taro in one part of the garden (bottom)

New cash crops

Nowadays Martin and all the people of Kolutubi have also planted one or more cash crops. These crops earn them money to meet their basic needs and improve their standard of living. They grow cash crops such as kava, turmeric, coffee, betel nut, coconut, cocoa, teak, rice and oranges. All the families earn a good income from their cash crops.

In the past, most farmers like Martin grew copra and cocoa for cash. However, Martin has now changed to a new crop, kava. This comes from Fiji and Polynesian countries and is used to make a drink which is slightly intoxicating, like alcohol. It is very popular in other Pacific countries and can be exported, but it is also becoming popular in Honiara.

Why I became a kava farmer

My family and I started planting kava in 2005. First I used to make copra and grow cocoa. I saw that there was more money in kava than in copra and cocoa. There was also less labour in kava than in copra and cocoa. The only major work in kava is washing the kava roots, which can take a few hours or a day. The weeding and planting is much easier than brushing coconuts and cocoa plantations.

The price for kava is much higher than other cash crops such as copra and cocoa. For example, in November 2008 the Kolotubi Cooperative Society

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Figure 10.12 Martin drying kava roots on a copper tray in the sun

was buying kava roots at $200 per kilo and kava chips/stocks at $170 per kilo.

I also plan to go into rice farming in my old kumara garden. This is because the cost of rice is now very high, so I don't want to spend money on buying rice. For example, the current price of rice at the Kolotubi Cooperative Society Store is $14 per kilo. A 20-kilogram bag of rice is now $260 while a 10-kilogram bag is now $130.

I have four plots of land to plant potato, so one of the plots will be used for planting rice.

I also planted a garden of turmeric and since 2001 I have also planted 60 coffee plants. They all have higher prices than copra and cocoa.

Some people are also growing betel nut as this can be sold for a high price.

Cooperation in the community

Most of the cash crops are sold either to their local Cooperative Society Store in the village, to buyers at Kaevanga Port, or in Honiara. The cooperative store is owned by the local people who bought family shares of $100 each to start the store. In addition to buying the farmers' crops, it also has a wholesale and retail section, which buys goods from Honiara and sells them to local people. Those who have shares receive a bonus or dividend from their shares each year. The cooperative employs four shop keepers and a store manager.

Figure 10.13 The Kolotubi Cooperative Society Store

Activity 10

What are the advantages of having a cooperative store rather than farmers relying on other people to buy their crops?

The village has also started a community rice farm, where all the villagers work two days a week on community work days. Fifty per cent of the money from the sale of the rice goes to community projects, and fifty per cent to the families who provide the labour.

The community has also started a teak plantation. It is hoped that, when the teak is ready, the money earned will help the community to meet some of its community services and needs.

As a result of the villagers' income from cash crops, most of the houses in the village have iron roofing. Through community projects they have a water supply, e-mail and radio communication. Their village is linked to Kaevanga Port by road and transport is by a village community tractor or on foot.

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Figure 10.14 Kolotubi village

Kolotubi market produce is either transported for sale at Kaevanga Market during the days that ships are scheduled to arrive at Kaevanga port, or is loaded by ship to go to Honiara markets.

Problems for Kolotubi

Traditional farming, using shifting cultivation like that at Kolutubi, is facing two main problems.

1 **Population pressure**

The population of Kolotubi, like the population of the rest of Solomon Islands, is rising rapidly. Although people grow a large amount of crops in the small gardens they use, shifting cultivation is wasteful in the use of land. At any time, large areas of village land are unused, because a long fallow period is essential.

As the population grows, so gardens have to be made bigger, there is less land left over and the fallow period gets shorter. Shifting cultivation works satisfactorily while there

Figure 10.15 Kaevanga market

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Figure 10.16 The population in many villages is becoming too large to be able to feed everyone.

is plenty of land to go round. However, shifting cultivation cannot support a dense population.

2 **Cash crops**
The problem of shortage of land is made worse by the introduction of cash crops. These use more land, especially the land near the village, so most food gardens are now several kilometres from the village itself. Some of these cash crops, like coconuts, are permanent crops so the land is no longer available for shifting cultivation.

People, therefore, have to start thinking of ways of using the land more permanently, or for longer periods, without having to let it lie fallow. **Inter-cropping** and **crop rotation** techniques are being used by some farmers to ensure the same piece of land is being used for longer periods. **Organic farming**, which uses **mulching**, is a very good way of increasing production without spoiling the land. Chopped up plants are spread over the land to rot and form humus. Compost or natural fertiliser can also be made by collecting waste plant and animal materials, allowing these to rot and using it as a natural fertiliser. All this means that the fertility of the soil is renewed without leaving it fallow, so the fallow period becomes shorter.

Activity 11

Changes in local communities

You have learnt about changes taking place in Kolotubi village. Write your own account of changes taking place in a community you know. If you come from a village, answer Question A below. If you live in a town, answer B.

A Village
Write the heading, 'Changes in my village'. Describe the changes that have taken place in your village over the past ten years or so. Comment on new houses, new building materials, new crops and farm projects, the number of people, changes in diet and other customs.

B Town
Write the heading, 'Changes in my town or community'. If you live in a small town, like Buala or Lata, write about changes which have taken place in this town. If you live in a suburb or settlement which is part of a bigger town like Honiara, write about changes in the part of the town where you live.

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2 Shifting cultivation in other parts of the world

The kind of farming practised by Martin Liumana and his wife Christina is very similar to the kind of farming that is found throughout the tropical world. You will find almost the same system in Brazil, Central Africa and much of South-East Asia.

Activity 12

Use the map in Figure 10.17.

1 Trace the map and on it:
   - **a** colour the areas of shifting cultivation
   - **b** label: South-East Asia, Papua New Guinea, Solomon Islands, South America, Africa, Tropic of Cancer, Tropic of Capricorn.

2 Explain why the type of farming in these regions and countries is similar to that practised in Solomon Islands.

On the map are marked two lines, called the tropics. The area between the two tropics is called the tropical zone. It is the hottest part of the world. Shifting cultivation is practised mainly in this tropical zone. This is because climate conditions are similar to those of Solomon Islands so are well suited to this kind of farming practice.

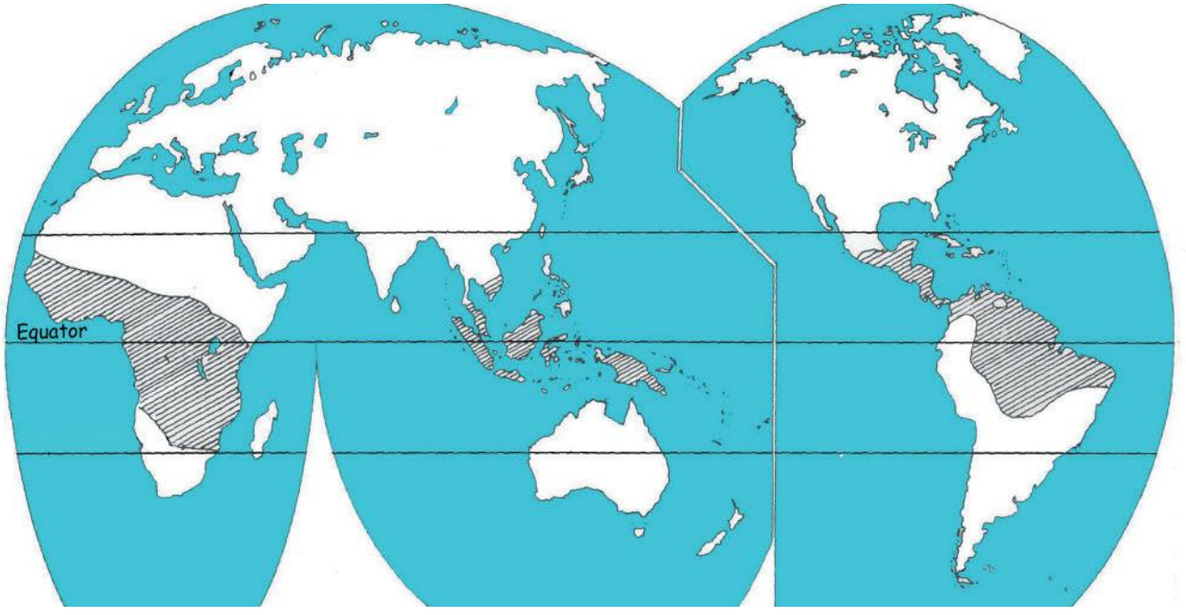

Figure 10.17 Shading shows where shifting cultivation is practised in tropical areas, such as Brazil, Central Africa and South-East Asia.

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What is cash farming?

Activity 13

1 What is the main reason why people have started to grow different types of cash crops?

2 Do you think this is a good reason? What may happen in the future which may spoil their plans?

3 Where do you think betel nut can be sold for a high price?

We have read Martin's story on why he decided to grow different cash crops, although he still practises subsistence farming using shifting cultivation. The main reason why Martin started planting cash crops is because he wanted to earn money to meet his basic needs. Growing cash crops to earn money is now common and is called cash farming or **commercial farming**. Unlike shifting cultivation, which produces food mainly for home consumption, what is produced in cash farming is sold for money.

Importance of cash farming

In today's society, earning money is important. It satisfies most of people's needs and wants. Families need to pay for their children's school fees, clothes, food and other basic needs. Without money they cannot meet those basic needs. Cash farming, therefore, is one way people can earn money through farming.

Types of cash farming

Different types of crops or animals can be farmed to earn money in Solomon Islands. Crops include cocoa, coconut, coffee, kava, vanilla, teak, turmeric and ginger. Animals that can be farmed include pigs, chickens and cattle. Seaweed and clamshells can be farmed from the sea.

In cash farming, the crops grown or animals kept are usually those for which there is a demand in the local market or for export to more developed nations.

Markets

The prices for these products in overseas markets often do not remain stable. Sometimes the price goes up and farmers earn more money from their products, and other times the demand for these products is low and as a result the price drops. Low prices can discourage farmers so they look for other crops that offer higher prices for their crops. This is why Martin regularly switched to different crops.

CASE STUDY

Small-scale goat farming in Kenya, Africa

People in many parts of the world practise small-scale commercial farming for crops or animals.

Japhet's nine goats in Kenya

Japhnet lives in Kenya in East Africa. In 1996 Japhet started small-scale goat farming. He started with only one local goat. He decided to do this because he was struggling to meet some of his family's needs and he didn't have enough money. He saw goat farming as a good way of earning money because people like to drink goat's milk and eat the meat. The goats' manure can also be used as a fertiliser to make his crops grow well. After six years, he increased the number of his goats to nine. Japhet uses

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the rich goat manure on his farm, growing far more maize (corn), beans and animal feed than ever before. The goats also produce two litres of milk a day, leaving plenty to sell to his neighbours.

With income from his goat sales, he has built a secure home for his family and paid school fees. His family is healthy and his farm continues to be successful. Japhet is proud. 'I was trained by other farmers and it is only right that I pass knowledge on to others. We must work together.'

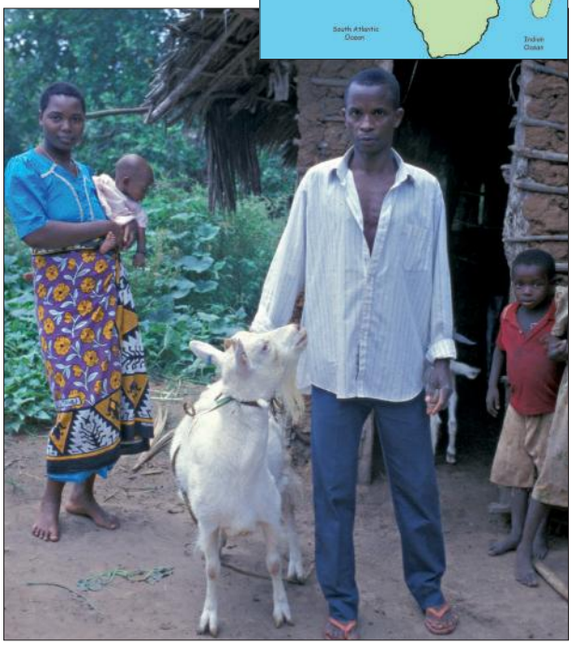


Figure 10.18 Japhet and his wife (Inset: The African continent)

Activity 14

1 What benefits do Japhet's family get from his goats?

2 Do you think goat farming could be successful in Solomon Islands?

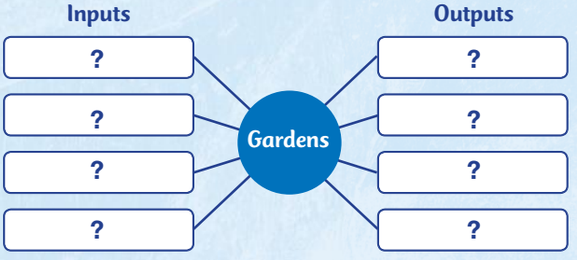
3 Farming inputs and outputs

In any type of farming there are **inputs** and **outputs**. Inputs are the things which have to be put into farming to make it work, such as land, climate, labour, money, seeds, fertilisers, tools and machines. The inputs are affected by many things. Some of them, like climate, soils and landscape, are natural and the farmer has little control over them. Others, such as the amount of money a farmer has, local customs or being close to a market, can change a lot and may be affected by the farmer himself. For example, one farmer might go to agricultural college and learn about new crops, fertilisers and insecticides and later decide to use them in his own garden. Another farmer might simply carry on farming using the customary methods taught to him by his father.

The outputs are the things that farmers produce. They are either animals or vegetables and may be eaten by the farmer, or sold for cash.

Activity 15

1 Read through the story of Martin's gardens and fill in the diagram below to show the inputs and outputs of his gardens.



2 Describe how each of the followings affects Martin's gardens or the farming in Martin's village.

a rainfall **b** population **c** soils
d customs **e** cash farming.

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Glossary

commercial farming growing crops or keeping animals for sale to make a profit; also known as cash farming

communal owned and shared by the whole community

crop rotation growing a different group of plants each year on the same piece of land, to improve the quality of the soil

equatorial near the equator

fallow land left uncultivated to regain fertility

humus Dead plant matter which rots and provides food for crops

input things a farmer 'puts' into farming, e.g. cash, labour, seeds, machines

insecticides chemicals used to kill insects

inter-cropping growing two or more crops on the same land at the same time

iron pan Hard red rock formed when forests are cleared and iron is formed on the surface by leaching and rising to the surface by evaporation

laterite infertile red soil formed when ground is cleared and good soil is leached away leaving mainly iron

mulching spreading cut leaves or plants over the soil to rot and provide humus

organic farming farming using natural methods rather than chemical fertilizers to improve the amount grown

output anything produced on a farm

root crop plants grown mainly for their roots, e.g. yams

shifting cultivation when farmers move to a new piece of land every few years, to rest the soil. Also known as **slash and burn** as farmers slash the vegetation and then burn it; or **bush fallowing** as the land is left fallow or bush to regain fertility

slash and burn when farmers cultivate new land by cutting and burns trees on it to clear it

till to cultivate the soil, e.g. dig or plough

tropical equatorial the climate of areas within the two tropics and near the equator. It is warm all the year and normally has a wet and dry season

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Chapter 11

Large-scale Commercial Farming

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1 Coffee plantation and factory in Brazil

In the last chapter you learnt about one type of commercial farming: cash crops grown on a small scale. Another type of commercial farming is where cash crops are grown on a large scale. The crops are grown purposely to make money, not for the farmer to eat. Usually the same type of crop is grown on a very large area of land. One example of this kind of farming found in Solomon Islands is a **plantation**. Some large-scale commercial farms also have different names, like **orchard**.

Note that in Solomon Islands, especially in Pijin, we use the word plantation in another way, to mean any area of permanent crops such as coconuts or cocoa, even if the area is quite small. In this book we will use plantation to mean a very large farm.

Figure 11.1 Coffee plantation in Brazil

Figure 11.2 The factory is in the background. In the foreground, workers are spreading the coffee beans to dry.

Activity 1

Divide into groups. Discuss the following activities and share your answers with the rest of the class.

1. Do you have plantations in or near your school or community?
2. Do you know any other places in this country where plantations are found?
3. Who owns these plantations?
4. What crops or plants are grown?
5. What is the size of these plantations, if you compare them to the size of a football field?
6. Do you know of anyone who works on a plantation or have you ever helped on one?
7. Is the work on the plantation light or heavy?
8. Are people paid for work on a plantation?
9. What happens to the crops produced on the plantation? Are they sold or used for food?
10. List some of the plantations in Solomon Islands you have heard stories about, read about in books and newspapers or were told about.

Activity 2

In Chapter 10 you studied small-scale cash cropping in Solomon Islands. Study the photographs in Figures 11.1 and 11.2 and answer the questions.

1. From the world map in Appendix 3 of this book, find the country of Brazil.

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2 Compare the Brazilian coffee farming you can see in Figures 11.1 and 11.2 with small-scale farming in Solomon Islands. Copy the table into your exercise book. Tick the correct box in each row.

Characteristic		Type of farming: Small-scale cash farming	Type of farming: Large-scale commercial farming
Land size	Small area covered	?	?
	Very big area covered	?	?
Number of workers	Big number of workers	?	?
	Small number of workers	?	?
Amount of output (things) produced	Big output	?	?
	Small output	?	?
Amount of money earned	Big amount of money	?	?
	Small amount of money	?	?

2 A commercial farm overseas

Now read the following story about a young Solomon Islander who had the experience of working on a large-scale commercial farm. In this case the farm produced fruit, so it is called an orchard, but this is similar to a plantation.

Activity 3

Read these questions and then read Patrick's story on the next page to find the answers.

1 How old was Patrick when he went to work in the orchard?

2 What is the highest form that Patrick reached in his education?

3 Which country did Patrick work in?

4 What crop is grown in the orchard?

5 What is the size of the orchard where Patrick worked?

6 What two ways are used to keep the soil fertile?

7 What chemicals are used on the crops?

8 Describe the process involved in the harvest of fruit on the farm.

9 How much fruit does the orchard produce each year?

10 Where was the fruit taken after the harvest in the field?

11 How much was Patrick earning in a week in Solomon Island dollars?

12 When Patrick returned to Solomon Islands, how did he use his money?

13 List some problems Patrick encountered.

14 What good lesson did Patrick learn from working in the orchard?

15 What is Patrick's advice to those who would like to work in this type of orchard in the future?

16 List the important differences between this orchard and a small farm in Solomon Islands.

17 List the ways in which you can call this commercial farming.

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Figure 11.3 Patrick Alisae

Patrick's story

My name is Patrick Alisae. I am 20 years old and part Malaita, part Choiseul. I did my education at White River Community High School in Honiara, from pre-school to Form Five.

In 2006 I had the opportunity to go to New Zealand to work in an apple orchard, owned by a company called Mr Apple.

At first I was very happy to be accepted to go because I was told I would receive a lot of money. Apart from that, much has been said about New Zealand as a big and rich country with a lot of people of many races, and I wanted to see these things for myself. I joined other Solomon Islanders who were selected because they were also interested in working in New Zealand.

The first day we had practical training on how we should work in the orchard, such as how to pick apples, where to put them, what to wear, how to climb a ladder and much more. For this practical work, we were paid at NZ $10 (S.I. $55) per hour.

I have never been to Guadalcanal Plains Palm Oil Limited (GPPOL), so it was the first time I had seen and worked on a very large farm. Although it seemed very big to me, the orchard was one of the smallest farms that the company owns. Mr Apple owns and operates 13 different orchards in New Zealand. This particular one covers an area of 14 hectares (about 20 soccer fields put together). There were about 50 000 to 100 000 apple trees. The apples were planted in very orderly, neat rows. The undergrowth (weeds and grasses) was cleared regularly. Fertilisers were applied so that the trees bore a lot of fruit.

Activity 4

1 Describe the main features you can see in Figure 11.4.

2 What features suggest that this is large-scale commercial farming?

Figure 11.4 This is the type of apple orchard that Patrick was employed in.

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Some of the apple trees were short, so we picked the fruit from the ground. Other trees were tall so we climbed ladders to pick the apples. Sometimes we used hydro-ladders which automatically rise to the higher branches of the trees. In Honiara, SIEA use these for repairing power lines. We wore small buckets tied around our waists, where we put the apples we picked, and then poured them into the bins which were located along the rows of trees. These were later picked up by a tractor and taken to the factory for packing. All these processes are shown in Figures 11.5 and 11.6.

Figure 11.5 Apple workers using hydro-ladders to pick apples

Figure 11.6 Apples loaded onto a tractor

The buckets can hold about 150 apples. The bins, on the other hand, can hold about 900 to 1000 apples once they are filled to the top. In a day I can fill four to six bins on average, but only two during bad weather such as heavy rain.

Apart from the picking which we did, nearly all the work on the farm is done with machines. The farm has two tractors, one forklift, one sprayer, two hydro-ladders like the one in Figure 11.5, and a truck.

The orchard is only 14 hectares—about 400 metres long and 350 metres wide. But in one year it produces 13 000 trays of apples, 7500 trays of kiwifruit and 40 tonnes of pears. (A tray contains about 50 apples.)

The soil is kept fertile by using fertiliser every year and the trees are sprayed three items a year for pests. The farmer mulches by spreading dead vegetation around the trees.

From the factory, the cartons of apples are sold to various supermarkets around the country. The majority, however, are exported to overseas countries. Some end up in shops in Honiara.

Figure 11.7 Apples are packed and ready to be sold.

If you work very fast, you can fill up more bins. In my case, I am not quite used to this type of work because I spent my entire life in town. The way I see it the work is more suitable for people from rural areas.

We were paid according to the number of bins we were able to fill in a day. We were paid weekly and most of the time I was getting NZ$600 (SI$3500) as my weekly payment.

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After my three months, I was able to save about SI$40 000. With this money I helped my parents to repair our house and met my family's daily needs such as food and clothing. I also paid for my tuition fees at the University of South Pacific Centre in Honiara where I am currently studying.

I went through some hard times, such as homesickness after my arrival in New Zealand, and trying to get on well with European workers. One of the greatest things I learnt is 'success comes through hard work', that is, if you want to succeed in life you must get down and work very hard.

My advice to those who would like to work in New Zealand in the future is you must be prepared to work hard because the harder you work the more money you will get.

3 Large-scale commercial farming and plantation farming in the world

As the map in Figure 11.8 shows, there are four types of large-scale commercial farming found in different parts of the world.

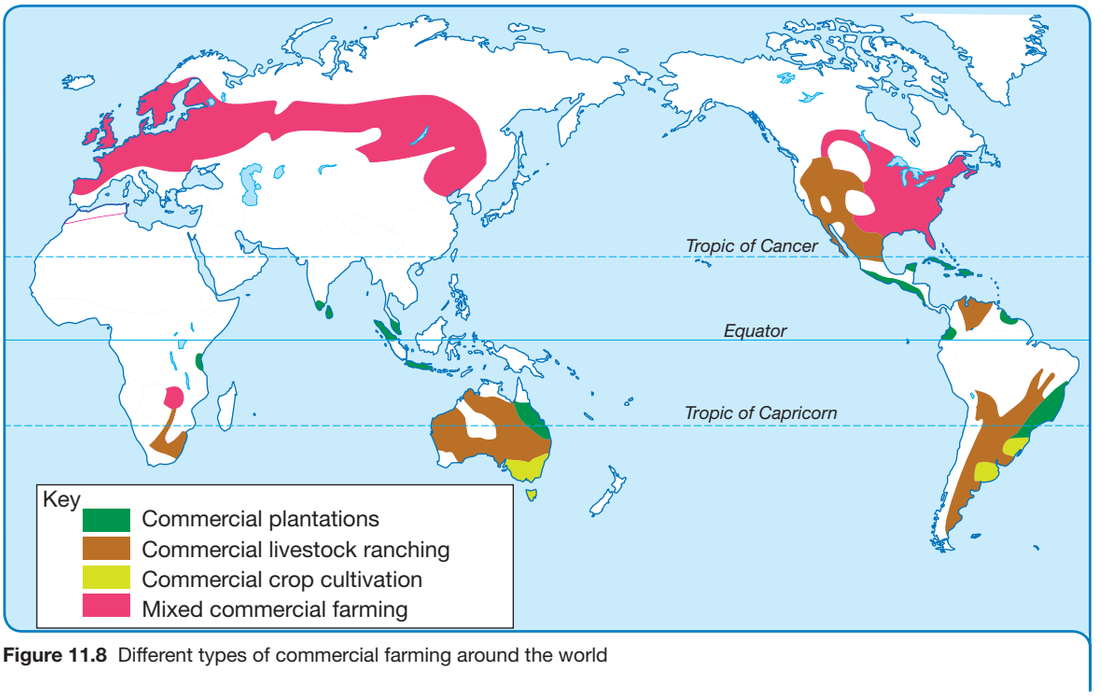

Figure 11.8 Different types of commercial farming around the world

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Activity 5

Refer to the map in Figure 11.8 and the world map in Appendix 3 of this book and answer these questions.

1 Name four countries where commercial plantations are found.

2 Name four countries where commercial crop farming is found.

3 Name four countries that practise commercial livestock **ranching**.

4 Name four countries that practise mixed commercial farming.

Plantations are very large farms. They grow a permanent or semi-permanent crop which stays in the ground for many years, like coconuts or **oil palm**. They are mainly found in tropical countries. Many were started by people from European countries in colonies like Solomon Islands.

Commercial crop farming is where very large farms produce a crop which is planted each year, like wheat or rice. Growing crops is called **arable** farming.

Commercial livestock ranching is the use of large areas of land to raise animals for sale, like cattle (cows) or sheep. This is called **pastoral** farming.

Mixed commercial farming is when crops are grown and animals kept on the same farm.

All commercial farming needs a lot of land. This is usually flat land. Most farms use machinery for cultivation. They also need money to start the farm, buy machines, employ people and use fertilisers and other chemicals.

Activity 6

Look at the examples of large-scale commercial farming below. For each one, describe the main things which tell you it is large-scale and commercial.

Picture 1

Crop farming

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Picture 2

Cows waiting to be milked on a dairy farm in New Zealand. This farm was managed by a Solomon Islander.

Picture 3

Cows being milked by a machine. The man is attaching a pipe to their udders and the pipe sucks out the milk automatically.

Activity 7

Using the information you have read, and your own knowledge, answer the questions in complete sentences.

1. What is a plantation?
2. What is the difference between plantations and commercial crop farming?
3. Which three types of farms in Figure 11.8 are arable?
4. Why do you think the largest plantation in Solomon Islands has been established on the Guadalcanal Plains?
5. Why would it be difficult for Solomon Islanders to establish commercial plantations?

CASE STUDY

A palm oil plantation

The largest commercial plantation in Solomon Islands is called the Guadalcanal Plains Palm Oil Limited (GPPOL). It is on the Guadalcanal Plains east of Honiara (see the map in Appendix 1 of this book). This is the largest area of flat land in the country. It is also near Honiara, so transport is easy and goods can be exported through the port at Point Cruz. The plantation grows only one crop: oil palm.

Figure 11.9 GPPOL Headquarters at Tetere

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In 1970, Commonwealth Development Corporation (CDC)—a company set up by the British government to help countries like Solomon Islands—helped to set up a company called Solomon Islands Plantation Limited (SIPL) in Solomon Islands. After 30 years of operation, the SIPL was forced to close in 2000 during the ethnic tension.

In 2007 a newly established company, Guadalcanal Plains Palm Oil Limited (GPPOL), took over the abandoned plantation and started it up again. GPPOL is partly owned by a Malaysian company, New Britain Palm Oil, which is based in Papua New Guinea, and is in a business partnership with the local landowners.

Activity 8

1 What year did the oil palm plantation begin in Solomon Islands? Why do you think a British company helped Solomon Islands at that time?

2 What do these abbreviations stand for: CDC, SIPL and GPPOL?

3 Where are SIPL and GPPOL from? Look at the world map in Appendix 3 and estimate the distance of each of these two countries from Solomon Islands.

4 GPPOL is from a developing country in Asia and SIPL came from a developed country in Europe. What does this mean?

Oil palm

The oil palm is a tropical plant. It originally came from tropical West Africa. It belongs to a plant family called *palmae* or palms—the same family of plants as the coconut and betel nut.

The fruit

If you have any oil palm in or near your school, get a fruit and look at it.

The fruit of the oil palm is made up of several parts. The **pulp** or soft part below the skin is yellow. When the pulp is crushed, an oil called **palm oil** comes out. In the middle, surrounded by the pulp, is a shell. Inside the shell is a **kernel**. When the kernel is crushed, another oil called **palm kernel oil** comes out.

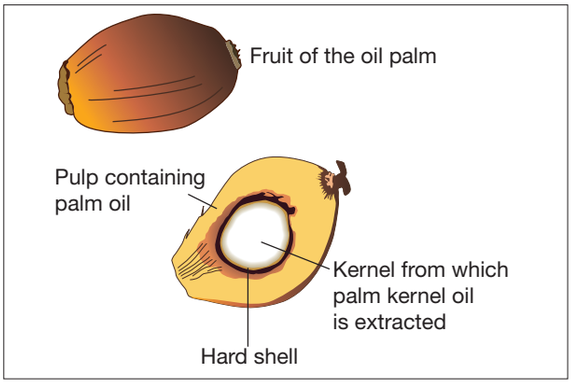

Figure 11.10 An oil palm kernel

Growing the oil palm

The oil palm plants are first planted in a **nursery** and later **transplanted** into the fields.

Figure 11.11 A greenhouse at GPPOL nursery station at Ngalibu, where young seedlings are grown

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Figure 11.12 Chemicals stored in a warehouse to be used as fertiliser

Figure 11.13 Young palms in the nursery ready to be transferred into the field

The oil palm is like a coconut, but shorter. It has a straight trunk with a ring of leaves on top like a crown. The leaves are usually cut off. The bases of the leaves cling on, giving the trunk a very rough surface.

The oil palm bears separate male and female flowers which do not always come out at the same time. Because of this, the female flowers are first pollinated by hand. Workers gather pollen from the male flowers, dry it and throw it on the female flowers to fertilise them. This is done to ensure that fruit is formed.

The fruit grows on bunches with about 200 small fruits or **fruitlets** in each bunch. The fruit changes colour from black to yellow, orange and red as it ripens.

Figure 11.14 Young bunches of oil palm

Figure 11.15 A fully ripened oil palm bunch

Figure 11.16 A heap of harvested oil palm bunches

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Activity 9

1 List all the activities which have to be done to grow the oil palm.

2 Suggest why the plantation needs to employ many workers.

3 Why do you think that, in the past, many people from Malaita came to work on the plantations?

4 Suggest why people from Guadalcanal, who have land near the plantation, might not want to work on the plantation.

5 Would you like to work on the plantation? Give reasons.

Work on the plantation

Figure 11.17 Bunches of fruit on a tree

Four years after being taken from the nursery the oil palm is ready for harvesting. The bunches of ripe fruit are cut off with a knife and fall to the ground. This has to be done very carefully as they are very heavy and could injure someone as they fall. For young trees, the knife is flat like a chisel, but for older and taller trees it is curved like a **sickle**, so that the bunches can be pulled downwards.

Figure 11.18 A plantation worker harvests a fully grown palm tree using a sickle attached to a long pole.

Unless the ground below the tree is kept clean, fruit may get lost, so women are employed to brush around the palm trees. **Herbicides**, which kill other plants, are sprayed to keep pathways and roads clear. Old leaves are cut from the trees and piled in long rows between the palms so that they rot and return nutrients to the soil.

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After the fruit has been cut down, big trucks come and collect it to take it to the factory in the middle of the plantation. It must be processed quickly to get the oil otherwise the fruit goes dry.

Figure 11.19 Plantation workers taking a rest under palm trees. Note that there are no weeds under the trees because the area has been sprayed with herbicides.

Activity 10

Palm oil processing unit operations

1 Coconuts are often made into copra and exported before the oil is squeezed out. From what you have just learnt, why can't we do this with oil palm? Why does the factory have to be close to the place where the fruit is grown?

2 In your own words, explain the difference between oil palm and palm oil.

3 By comparing with any other things you can see in Figure 11.20, estimate the approximate height and width of the highest building. Why are factory buildings often very big?

4 Write down any problems you might face if you lived close to a big factory like this.

Figure 11.20 The factory, with a **conveyor belt** and some containers bringing things from overseas

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The palm oil factory

The long journey of the oil palm fruit through the factory is shown below.

Stage 1

When the truck with fruit arrives, it is weighed on a scale. The fruit is then tipped out of the truck onto a storage ramp. The gates at the bottom of the ramp open to fill the containers below.

Stage 2

The bunches of fruit are moved on a conveyor belt and tipped into big containers.

Stage 3

The containers are placed into big round steam ovens.

Stage 4

The containers are shaped to fit the ovens.

Stage 5

The bunches are then passed through special machines called fruit strippers to separate the fruitlets (the small fruits) from the bunches. Then the fruitlets go into the fruit digester, part of which is shown here.

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Stage 6

The fruitlets are cooked and then squeezed to take the oil out of the flesh.

Stage 7

When the oil is cleaned or processed it is tested in a laboratory to make sure that the quality is good, and it is then stored in tanks. The remaining dry part of the fruit consists of nuts and fibre. The nuts are opened to separate the shell from the kernel. The inside kernels are exported for kernel oil.

Stage 8

All parts of the plant are used, even the empty bunches. Here they are being passed along a moving rubber belt called a conveyor belt either to be burnt, or taken to the field to be used as fertiliser to make the palms grow well. The shells and fibre are used as fuel to make steam. This drives a turbine to produce electricity.

Stage 9

The palm oil itself is taken in large road tankers, to Point Cruz in Honiara.

Stage 10

At Point Cruz it is kept in storage tanks. Palm oil becomes solid at normal temperature, so it has to be heated carefully before it is pumped into overseas ships. Most of the oil is exported to the United Kingdom and Europe. The kernels are exported to Europe and Japan.

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Activity 11

A palm oil factory

1 Copy Figure 11.21 to show the stages in the processing of the oil palm fruit just described. Make your boxes in diagram larger, so that you can add information to each box. Read the account again and fill in each box with a brief explanation. For example, in the first box write 'tipped out of truck and weighed'.

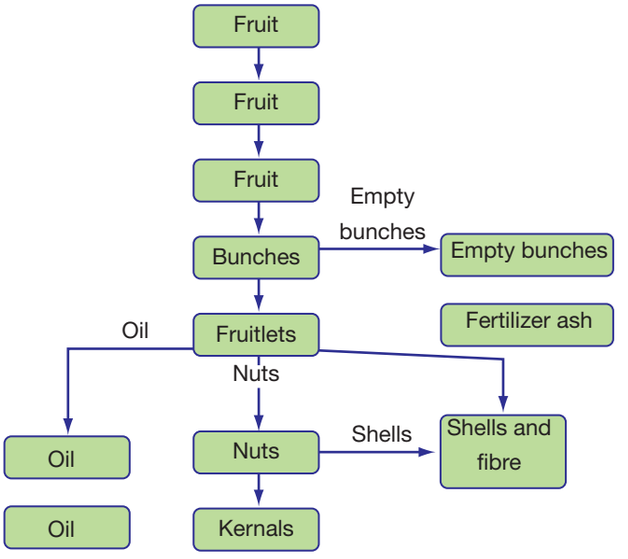

Figure 11.21 Stages in processing the oil palm fruit

2 Figure 11.22 shows how all the parts of the fruit are used. The factory produces its own heat and electricity from the shells and fibres. Draw a pie chart based on this diagram, to show what happens to the material in each bunch of fruit.

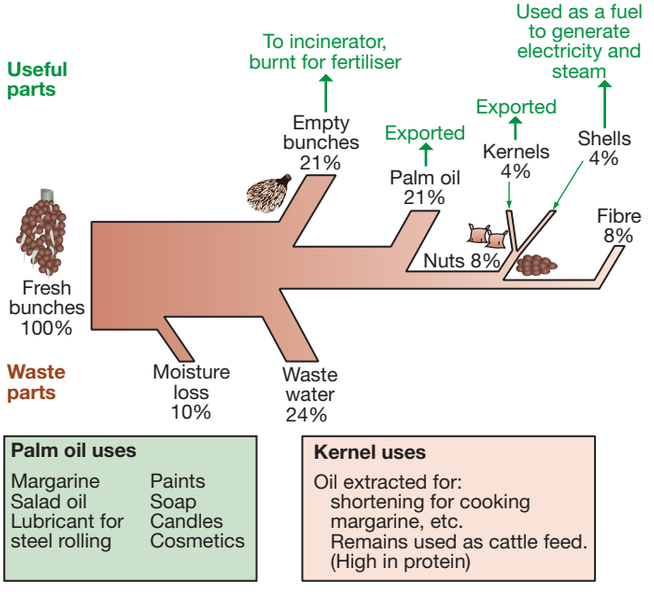

Figure 11.22 How all parts of the oil palm fruit are used

3 What is meant by saying that the factory is 'almost self sufficient'?

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Working for GPPOL

Plantation worker

I am Josses Mweu from Santa Cruz in Temotu Province. I started working for Guadalcanal Plains Palm Oil Limited (GPPOL) in 2006, the year that I came to Honiara. Actually, this was my first job working for money in a company. At home, I earned money by selling things like cabbage and melon in the village or at Lata town market.

Figure 11.23 Josses Mweu

I am part of a group of thirty boys headed by a boss whom we refer to as 'Recorder'. His duty is to tell us what to do every day and to keep records of the hours we work. My group's job is to brush along the drains to make sure they are clear at all times to avoid blockages that might cause flooding during rain.

At first I was very surprised by the size of the plantation. It covers a very large area, about 10 000-football fields altogether, or even more. Actually, it covers most of the plain of Guadalcanal. There are large coconut plantations I have seen back at home, but they were no match for this oil palm plantation.

I earn $280 every two weeks, which is about $25 per day. Sometimes I work at the weekend to earn extra money called overtime pay, which is $100 per day. Part of my wage is deducted and paid to the National Provident Fund (NPF) as my savings which I can withdraw in the future. With my wages, I buy my basic needs such as food, clothing and shelter. I live with three other boys in a house that we rent at a monthly fee of $30 each from the owner.

This is not a big amount of money. Sometimes, if I am not careful, I spend my entire wage before the next payday.

Generally, I would say we have a very good relationship with the landowners (people who own the land and resources). We are friendly to each other. For those of us who came from other islands to work, we believe that respect is a very important thing in order to live and work peacefully. For example, because of this the landowners gave us small pieces of land to make our gardens, just like at home.

Landowners

Oil palm is grown on the plantation, but the company also encourages local landowners to grow their own fruit which they can sell to the company. One group which does this is Loka Mamata. Three members of that association—Grinta Tavake, Stanley Giggs and Selwyn Tavake—talk about their work.

Loka Mamata and Tetere Outgrowers Association

Figure 11.24 Loka Mamata

We formed as an association and we called ourselves Loka Mamata. Loka Mamata is the name of our tribe that holds the title of the land. We are small holders

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made up of small groups based on the nuclear families (father, mother, and children) of our tribe.

We do not lease or sign our plot of land to the company (GPPOL). Other groups sign a lease to give their land to the company to harvest the oil palm. In return, the company pays them a royalty at the end of the month. We did not want to give our land away like this. Instead, we do the harvesting ourselves, because we want to gain more money from it. This is better than leasing the land to the company because we are able to reap the benefit directly. Already we have seen big money from this.

It is our own property and this encourages our individual families to work together. It is a normal family economic activity so everyone participates willingly, because everyone understands that the money we earn will be entirely ours. A good sized family of five adults and youth members are able to harvest four hectares in a month. This is actually the maximum size of land the company believes should be allocated to each family, since it is easy to manage.

Figure 11.25 Members of the association prepare their harvests, before the product is taken to the factory for milling.

Most groups operate new plantations which they planted themselves. Our group maintained the old palms planted by the former Solomon Islands Plantation Limited (SIPL) in the 1990s. Our total plot is about 503 hectares. This is a very big area and the company is still very interested in it.

We were earning $1.3 million as an association on a monthly basis, especially when the oil price was high on the world market. Currently the price of palm oil has dropped, so our earnings dropped to around $300 000 per month but this is still a huge amount of money for us.

This association was the first kind in the area based on a tribal group. The members of the tribe felt that ethnic tension has affected the entire area and it is now time for cooperation. It is important to bring hope to everyone and help raise the living standards of the people.

The association provides loans to members and also provides assistance at social events such as deaths. It has assisted more than 50 members.

Everywhere a company operates, there are some unintended problems. In our case these also exist. People use the money from oil palm to buy food, so they do less gardening. This makes people buy food that might contribute to health-related problems. With a lot of money, people do good and bad things. Alcoholism is the most obvious negative effect, resulting in fighting and crimes such as stealing.

We enjoy a good relationship with the company. We normally hold monthly meetings to update everyone on our progress and on things like the price of palm oil on the world market and how it will affect us.

Activity 12

1 Three groups of people benefit from the oil palm:
   - i those who work on the plantation
   - ii those who grow oil palm and sell it to the company
   - iii those who are landowners, lease their land to the company, and have royalties paid to them every month.

   Briefly list the benefits for each group.

2 Which group do you think benefits the most?

3 If the price of palm oil sold overseas goes down, how do you think this will affect each group?

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Economics of plantation farming

The graph in Figure 11.26 shows the international prices for copra and palm oil on the world market from 1988 to 2009. The world market price is the price which countries are willing to pay for the product. It depends partly on:

- the supply of copra or palm oil in the world, that is, the amount which is produced at a certain time
- the demand for copra and oil palm, that is, how many countries want to buy it.

You have learnt about this in Business Studies.

Activity 13

Look at the graph in Figure 11.26 and answer the questions.

1 Is the world market price for these two goods generally steady or does it vary a lot?

2 If the world market price goes up or down, what will happen to the income of:
   a the farmers?
   b the plantation owners?

3 Why is the world market price for goods we sell important for all Solomon Islanders?

4 How do you think the world market price for these goods affects the income of the government?

5 Can Solomon Islands control the world market price for our goods?

6 Suggest why it was decided in 2009 that Solomon Islands would not export any more copra. Instead we will export pure coconut oil, that is, oil which has been squeezed out of the coconut as we squeeze oil out of the oil palms. Which can be sold for a higher price: copra or pure coconut oil?

As you can see in Figure 11.26, the world market price goes up and down frequently. This affects the price we sell our goods for, which affects how much farmers and plantation owners are paid. If the world market price goes up or down, the prices paid to the farmers and plantation owners goes up and down. This also affects the amount of money received by the government as the farmers and plantation owners pay more tax when the price is high and less tax when the price is low. With less money, the government has less to spend on services like health and education.

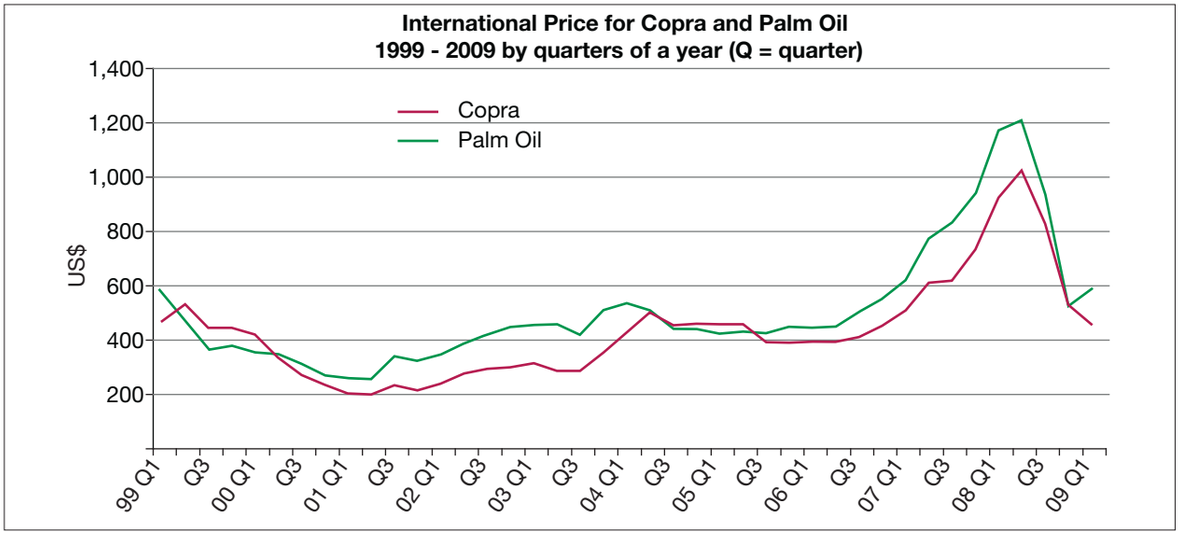

Figure 11.26 Prices for copra and palm oil, 1988–2009

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4 Advantages and disadvantages of plantation farming

From the activities and readings above, you can see that large plantations bring benefits to Solomon Islands. However, there are also many problems.

Activity 14

Read the numbered sentences below. Decide whether each sentence shows an advantage or disadvantage of plantations like GPPOL or former SIPL. Write them in your book under the correct heading: Advantages and disadvantages of plantation farming.

1. Plantations produce a large amount of crops for export.
2. The exports from plantations earn a lot of foreign exchange.
3. The prices for exports change all the time.
4. The government earns foreign exchange to develop the country by building water supplies, roads and bridges, buying ships, buying equipment for schools and hospitals.
5. A lot of foreign exchange may be spent in buying luxury goods for the rich, for example, cars, videos, computers, outboard motors and imported food and drink.
6. Plantation companies can do research to find ways of producing new crops from the land.
7. Plantations may use land which local people need for growing crops for their own use, so there may be a shortage of land.
8. Landowners may have only a small share in the profit for the use of their land.
9. Landowners may get money from rent or shares in the company.
10. Plantations may be owned by individuals or companies from overseas, and most of the profits may be sent overseas.
11. The government may have shares in plantation companies and may make profits from these.
12. The company may pay low wages to the workers and give them poor housing.
13. Plantation companies provide many jobs for those who need them.
14. Plantation companies help a few owners and managers to become rich, while most people who work for them remain poor.
15. The government may spend all its money on helping the plantations and none on helping local farmers.
16. It is better to encourage local farmers to grow crops on a small scale than to encourage a few companies to grow crops on a large scale.
17. People who work on the plantations send some of their money to the village and this helps the people at home.
18. Plantation companies build roads and wharves, which help local farmers to transport and sell their crops.
19. Profits from the plantations go to the companies or individuals who own them, not to the people who actually work on them.
20. Plantations employ people from many different islands and encourage Solomon Islanders to mix together and form one country.
21. Too many people coming from other islands to work on plantations may lead to trouble with the local people and landowners.

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Your list of problems probably suggests that many of these problems are to do with land. This can be the biggest problem with large-scale plantations, and it is partly what led to the social tensions which closed the old SIPL/CDC.

All plantations need a lot of land, and the land is owned by someone. SIPL leased or rented land from people in that area of Guadalcanal and, as described in the last story, they were paid royalties. However, some people said that this was not enough. They said that the company who owned the plantation and the people who worked on it got more benefits than the landowners. Some of them decided they should get their land back.

Most of the workers came from the more crowded islands of Solomons, especially Malaita and Reef Islands, as Josses described on page 208. According to Solomon Islands custom, many of their *wantoks* came to stay with them, and some started building houses and farming on Guadalcanal land. Some people bought the land, others just squatted. Eventually, some people in Guadalcanal decided that there were too many people from other islands and started chasing them out. This contributed to the social tension from 1999 to 2003. You will learn more about that next year.

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Glossary

arable growing crops

conveyor belt a long, thin strip of rubber which moves over rollers along which things can be moved in a factory

fruitlets small fruits on a bunch

herbicide any substance, usually a chemical spray, which kills unwanted plants. Also called weedicide or weed killer

kernel the hard part of the nut inside the shell

mixed commercial farming a farm growing crops and keeping animals

nursery a plot of land where seeds are planted and grow into small plants before being moved

oil palm a palm tree whose fruit can be squeezed for oil

orchard a farm growing fruit on trees

palm kernel oil high-quality oil produced by squeezing the kernel

palm oil the oil produced by squeezing the fruit of the oil palm

pastoral keeping animals

plantation a very large farm usually growing a single permanent or tree crop for sale. Usually found in the tropics, employing labour and using machinery and a lot of capital or money

pulp the soft part around the seed of a fruit

ranching keeping a large farm of animals, especially cattle

sickle a sharp, curved knife used for cutting plants

transplant to move small plants from the nursery into the fields, to space them out so they have more room to grow

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Chapter 12

Family and Community Disputes and How to Solve Them

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Activity 1

Get into groups of about 10 to 15.
Read the story below about a **dispute** in a school and then carry out the role play.

1 Each group chooses people to play the parts and act out the story. In your group, show how you would solve the dispute to restore peace in the school. You may decide to solve the dispute among the students themselves or to bring in people from outside to help.

2 After you have acted out the story, list the ways that each group suggested for solving the dispute. Did people suggest many different ways?

The dispute at Mori Community High School

Each day in Mori Community High School there are three duty classes for the dining hall. One class looks after the store, decides how much food is needed and gives the food to the cooking class. The cooking class cooks the food and the dining hall class serves it onto the plates on the tables. Students sit in class groups—one class on each table. As soon as the food has been served, the students come into the dining hall, say grace and eat the food.

One day as they started eating, a student from one class held his plate of food, rushed across to the plate of a student whose duty was to serve out the food, held up the two plates and said, 'Look, you all see—they have more than us. They always give themselves more when they serve the food.' Then he threw the other student's plate on the ground.

'That's not true,' said the student whose plate had been thrown down. 'We only serve the amount in each pot which we get from the class who cooks. Blame them.'

'Don't blame us,' shouted a member of the cooking class. 'The store keepers never give us enough food for everyone. I am sure they keep some of it to give to their *wantoks*.'

'Then how does this only happen when you are on duty?' said another student, pointing to the group who had served the food. 'Take your food, I don't want it.' And he threw his plate down.

At that, everyone started throwing their plates around and a big fight developed.

Figure 12.1

1 Ways of solving disputes

Disputes occur in all groups and communities: in families, in schools and classes, in villages, in towns and in larger communities including provinces or states, and the nation as a whole. In this chapter we will look at disputes within small groups, such as families, schools and local communities.

There are two main ways of solving disputes.

Internal solutions

This means trying to solve the dispute between the groups themselves. This can also be done in two ways:

1 *Through violence or fighting* between the groups, so that the strongest group wins. This is what happened in the dining hall.

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The problem with this is that it is not fair or **just**. In our story, the class with the biggest boys would probably win, whether they were right or wrong. Also, it does not really solve the dispute, as the original cause of the dispute is still there and the same thing may occur again. The food in the dining hall may continue to be shared unevenly. The class which lost the dispute may try to take revenge and fight back later, perhaps by spoiling the classroom of the group who won the fight.

2 *Through peaceful means.* This means discussing the problem with all the groups and trying to come to an agreement about how to prevent such disputes in future. In this case it would mean agreeing on a better way of sharing the food so it can be seen to be fair. This is better because it is fair, because no-one gets hurt and because it solves the dispute so that it will not happen again. Everyone is satisfied, so no-one will try to take revenge.

External solutions

This means bringing in people from outside to try to solve the dispute. In this case the dispute might be taken to the prefects, the school captain, the principal or even the school Board. They can try to solve the dispute in two ways:

1 *By using their authority.* This means they will tell students how to behave in future, make new rules for the sharing of food and perhaps punish those who were fighting. Sometimes this may be the best thing to do, but it can also cause problems. It does not fully solve the dispute because those who caused it may not agree with the decisions. They may think the decisions were not fair and may decide to cause more trouble later.

2 *By discussion or* ***consensus***. This means asking all the groups to tell their stories, listening to them carefully and then trying to suggest to the groups how such a problem could be avoided in the future. To achieve consensus means discussing the problem until everyone agrees with the solution. You will remember from Chapter 3 that leaders are sometimes chosen by consensus. This means the problem has really been solved in a way that everyone agrees is fair and just, and it is less likely to occur again later. This only works if everyone is trying to look for a solution and understand the problems of the other side, not just trying to put forward their own ideas.

If it is difficult to agree on how to solve the problem, that is to get a consensus, someone from outside the school, such as a church leader or local chief, may be brought in to help solve it. This is called **mediation**.

Activity 2

1 In groups, discuss and make a list of the main kinds of disputes which occur:
   a in your families
   b in the village or community where you live.

   Think of the kinds of things people argue or even fight about.

2 Next to each type of dispute listed in Question 1, write how it is usually solved.

3 There are many traditional ways of solving disputes in Solomon Islands. Describe any traditional ways of solving disputes still used in your community.

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What people do during a dispute

Activity 3

Different people do different things when something happens to them. Decide what you would do in each of the following situations. Be honest about what you really would do.

Figure 12.2

1 You enter the classroom and see someone taking another student's textbook.

2 Your MP3 player or camera is missing from your bag and you find someone else using it.

3 You hear a girl who is your *wantok* shouting, 'Help!', and find she is being attacked by a boy from another island.

4 You are watching a soccer match which is a draw 1–1. Your team scores a goal but the referee, who is a *wantok* of the people in the other team, says it was offside and doesn't allow the goal. All the people around you agree it was not offside and start throwing things at the referee.

5 Someone from another island swears at people from your island.

6 You are told to leave school one day before the exams because your parents haven't paid the school fees.

7 You are helping another student to run the school canteen and he tells you he knows an easy way to steal some of the money and asks you to help him.

8 You are walking around with some other students. They buy some *kwaso* from a local man and ask you to drink some. You refuse, but they say you are stupid and a coward and you feel 'shame', so you drink some. Then a prefect comes along and sees you, reports you to the deputy, and he says he is going to suspend you from school.

People deal with disputes in different ways.

- *Fight*: Some people get angry quickly and start a fight. This might be how some of you would deal with situations like 3, 4 and 5.
- ***Flight***: Some people try to ignore the situation and walk away, pretending they didn't see anything. This might be how you would deal with situations like 1 and 7.
- ***Problem solving***: This means you try to face up to the situation and solve it by discussing it with the people concerned. You might do this in situations 1, 2, 6 or 7—or any of the other situations, although it may be more difficult.

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Problem solving

The best way to solve disputes permanently is by problem solving. This means that everyone has to listen to the story of each group. Everyone then discusses the problem together and tries to come to an agreement about what to do. This is the only way to solve a problem permanently. However, it is not easy and involves skills which you need to learn and practise.

Listening skills

Everyone has to be willing to listen to everyone else. You must listen to them even if you totally disagree with them. You must not listen to try to prove that they are wrong and you are right, but to try to understand their point of view and why they did what they did. You must listen to the referee telling you what he saw, not just listen to him to prove he is wrong. You must listen with an **open mind**, that is, not make up your mind before you listen.

Maybe the student who took the textbook had had theirs stolen and was just borrowing it and planning to put it back. Unless you listen you will never know.

It is important to realise that, when something happens, we all have feelings about it. When you listen to someone, you should try to understand what they are feeling as well as just what they are saying. The person who stole your camera or MP3 player may have been asking their father to buy them one for ages, but their father refused so they felt jealous when they saw yours. That does not mean they were right to steal it, but if you know why and they apologise, you might lend it to them some time. This may solve the problem, as they may not normally be a thief at all.

Activity 4

1 What will happen to you in situation 8 (in Activity 3) if the deputy refuses to listen to you? What might they do if they hear your side of the story?

2 What might have caused the feelings of the student in situation 5, which made them swear at the people from your island? How can you find out?

Respect for others

If you try to find out why something happened it means you are **respecting** the other person. You are not immediately saying 'This person is a thief' or 'This person hates all the people from my island'. You are trying to find the reasons for it. The most difficult people to respect are those who are different from you: those from another ethnic group or island. But, as we saw in Chapter 2, even people who are different from you deserve respect. Everyone has their own culture and way of doing things and we cannot say 'My way is right and your way is wrong'.

Activity 5

1 We all have different ways of respecting different types of people according to our culture. What is the word for respect in your home language? What does it suggest you should do or feel towards others?

Life is changing nowadays. We are all moving around, being educated, watching videos, listening to popular music like rap or reggae from overseas, earning money and learning different ideas. All this may lead us to lose respect we traditionally show for people.

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2 Discuss the table below. Copy it and fill it in to show how you traditionally show respect to different groups, the reasons why people nowadays may be losing that respect, and how we may be able to regain that respect.

Who?	Ways of showing respect	Reasons for loss of respect	How to regain respect
Family members	?	?	?
Women / Girls	?	?	?
Church elders	?	?	?
Village chiefs / elders	?	?	?
Teachers	?	?	?
Police	?	?	?
Politicians	?	?	?

Managing anger

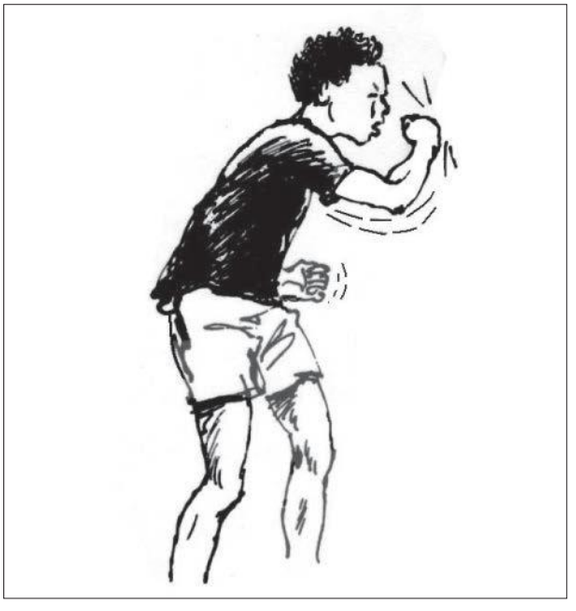

Figure 12.3

One thing that causes us to lose respect for other people is when we become angry. When we become angry we stop thinking clearly and think only about how to punish the person causing the anger. So, in the dining hall, some students just started throwing plates. In situations 3, 4 and 5 (from Activity 3) you may immediately become so angry that you fight the person concerned.

Activity 6

1 Think of situations when you did something because you were angry. Did it really achieve what you wanted? Did you later regret what you had done?

2 Drinking alcohol, like beer, home brew and *kwaso*, often makes people angry. Alcohol makes people lose their judgement and they do things they would not normally do, like fight or swear. Think of any time you have seen someone drunk and fight or swear. Were they happy or sorry about what they had done later when they were no longer drunk?

3 What are the problems with getting angry?

Can we control our anger? If you see someone beating up your *wantok*, or hear someone swearing at you, how can you prevent yourself from becoming angry?

Activity 7

1 Think of a situation when you were angry. How did you feel physically in your body?

2 Suggest things you can do to control yourself once you realise you are angry or likely to be angry.

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In answer to the first question in Activity 7, you may have said things like sweating, your heart beats faster, feeling that you want to hit something, crying, not being able to talk properly. This means we usually know when we are angry and can therefore do something about it. The problem with people who are drunk is that they do not realise they are angry but think they are quite normal.

One way to deal with anger is: *STOP*, *THINK* and *ACT*.

STOP means once you feel the signs of anger, try to separate yourself from the cause of it until you have cooled down and can control what you want to do. Of course, if you see someone beating your *wantok*, you cannot just walk away. You must first try to stop them. But then it is better to walk away and say, 'I will see you later' than to try to deal with the person while you are still angry. Many people go for a walk when they feel angry.

THINK means, while you go for a walk or whatever you decide to do, you think about what caused the anger in you, and what might have caused it in the other person. Did your *wantok* make the other person angry and is that why they hit them? Think about what you should do. Is there any way you can act without hurting anyone or causing further trouble? Can you try to talk to both your *wantok* and the person beating them and find out the cause?

ACT means taking action when you are no longer angry and have carefully decided what to do.

Being aggressive or assertive

Activity 8

In situation 3 (in Activity 3) you could say one of two things to the person concerned:

Either: 'If I ever see you doing that to my *wantok* again, I'll hit you.'

Or: 'Don't you know that we are supposed to respect each other in our culture? I suggest you consider what you would think if you saw someone doing that to one of your *wantoks*. In future, please think and follow our culture.'

Which of these would be most effective?

The first example in Activity 8 is **aggressive**: you are still angry with the person, so you threaten them.

The second is **assertive**: you are telling them firmly how to behave but giving them reasons and making them realise why their actions were wrong.

Assertion is usually more effective than aggression. It makes people change their ways by showing them where they are wrong. Aggression may simply make them angrier.

2 Valuing diversity

In Chapter 1 we reported that Archbishop Desmond Tutu told us to 'celebrate our diversity' and become a 'rainbow nation' like his.

Many of the situations of **conflict** mentioned above involve feeling that our *wantoks* are more important than other people. This can lead to the idea that we should dislike people who are not our *wantoks*. This means we are not celebrating our diversity but saying that

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Figure 12.4 Solomon Islands: a 'rainbow' nation

it would be better if everyone was the same as us. This would make life very boring. As Archbishop Tutu said, having people of many different cultures makes us strong, as they all contribute different ideas and skills to the country.

The word *wantok* suggests that the only important differences between us and other people are language and culture.

Activity 9

1 Do you know of any well-known song sung by the South African Lucky Dube which also celebrates our diversity?

2 Move around the classroom and join up with anyone who is the same as you in some other way, not just language and culture. They may be your *wantok*, but must be the same as you in some other way as well.

Similarities between us

In Activity 9 you might have joined up with someone from the same island, the same gender (male or female), the same religion, the same age, the same clan—or you could have joined up with anyone at all, as you are all Solomon Islanders from the same country.

You can see there are many things which link us, apart from being *wantoks*, and there are many forms of diversity we should celebrate apart from different languages and cultures.

3 A peaceful Solomon Islands

This chapter suggests that Solomon Islands could be a peaceful country if we:

- solve disputes through problem solving, not fighting
- listen to each other
- respect each other
- manage our anger
- are assertive, not aggressive
- celebrate our diversity.

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Activity 10

In groups, choose one of the following dispute situations. Each story has an **offender**, who is accused of doing something wrong, and a **victim**, to whom the wrong was done. You will also need a group of mediators to decide how to solve the problem.

For the situation you choose, the mediators should sit and listen. The victim first tells their story; then the offender tells their story; the mediators can ask any questions of the victim and the offender. Then the mediators discuss the case and decide how they will solve the problem.

Each group of mediators should then tell the whole class how they would solve the problem. Keep in mind the list on page 221, of ways to be peaceful.

Figure 12.5

Situation 1

Eric and his family own three pigs which are allowed to move freely without a fence. Evelyn is a widow whose husband has died but has three young children to look after. She complains that the pigs belonging to Eric and his family always go into her garden and dig up her potatoes so she no longer has enough food to feed her children.

Situation 2

Marion and Paul have three sons, aged 3, 6 and 12. One day their neighbour's wife, Rachel, complained that one of their chickens was missing and they suspected that Marion and Paul's sons had taken it. Marion and Paul denied it, but Rachel took them outside and showed them some chicken feathers and blood on the ground. They followed the blood to a hidden place underneath some trees and found the three boys cooking the chicken over a fire.

Situation 3

One day Roselyn decided to clear a new piece of land for a garden. She went out with her two daughters and started work. Soon Mark came along and said that the land was his and that his grandfather had had a garden there. Roselyn denied it and sent one of her daughters to fetch her husband, Luke. When Luke arrived he had been drinking *kwaso* and was slightly drunk. He told Mark it was his land and hit him with his wife's hoe. The two men fought until Mark pulled out a knife and stabbed Luke. Luke had to be taken to hospital and received three stitches.

Situation 4

Desmond and June have a 15-year-old daughter, Freda. She went to a social night at the school and started to dance with John, the 18-year-old son of Timothy and Lorraine. When Desmond and June's eldest son, who was a little older than John, saw this he reported it to his parents. He said he saw John and Freda leave the dance and disappear into the bushes. The next morning Desmond and his son went to Timothy and demanded compensation of $2000 and a pig.

Situation 5

In church on Sunday the pastor announced that there was too much brewing of home brew in the village and that, if it continued, he would report the people to the police. Rooney said he had every right to make home brew in his own house if he wanted to and continued to brew it and sell it. He said he had no other way of paying for his children's school fees. The villagers who were buying his home brew complained to the church authorities and asked them to remove the pastor, as he was interfering too much in the life of the village.

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Activity 11

Get into two or three large groups to perform a role play. Each group of students should read the story below. The story has seven different groups of people. Each group of people is listed on a role-play card on page 224.

In your group, decide which of the people on the role play cards you would like to act. Those who choose to be young people and landowners act out the story of the Saturday night incident. Then hold a village meeting at which you all play the parts you have chosen. Each group should give their ideas of what to do. At the end of the meeting the village must decide how to solve the problem. There are several possible solutions:

1. We give the land back to the original owners.
2. We close the community hall.
3. We ban dances in the community hall.
4. We close dances early.
5. We allow activities to go ahead but under stricter control, especially of alcohol and marijuana.
6. We report those smoking marijuana or drinking *kwaso* to the police.
7. We move the community hall and field to a different site owned by the church.
8. We give the distant church land to the original landowner in exchange for the land currently used by the church.
9. Are there any other solutions you can think of?

A dispute over church land

The village has a church with some land next to it which was given to the church by the grandfather of Donald Matuvaka and family. Donald was a strong Christian and said he wanted the land used to benefit the church. The church built a community hall on the land and used the rest of the land as a playing field.

The community hall is used by women's groups for sewing classes and to teach women how to read and write.

On Fridays and Saturdays the church youth group under the youth leader holds social nights, which start with custom dancing and then move onto modern dancing, sometimes with a live band playing rap and reggae and other popular music.

The field is used for all kinds of sports. The man who gave the land to the church has died and his son and family are now saying they want the land returned to them. The reasons they give are:

- too much noise from dances disturbs their family, who live close by
- young people are drinking *kwaso* and smoking marijuana in the area
- the field is used for sports on Sundays, which should be against the church rules
- some wives are spending too much time with women's groups and not looking after their husbands and family properly
- the landowners' family is now much larger and they want to use the land to grow cocoa
- the church owns more land elsewhere (but the church says this is far away from the main village and it would be difficult to return from there at night).

Incident last Saturday

There was an incident last Saturday. During the dance with the live band some young people were drinking *kwaso*. A group of the landowners came to shut down the dance at 10 p.m. Some of the drunken young people objected and started a fight with the landowners.

Figure 12.6

continued on page 224

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Role-play cards

Pastor or priest and church committee
want church activities to continue as it keeps young people occupied and helps the women of the village.

Original landowners
want the land returned to them and the hall shut for reasons given above.

Young people and youth leader
want the activities to continue, as there is nothing else interesting to do in the village.

Parents of young people
some want activities to continue; others are worried about brewing of kwaso and smoking marijuana.

Women
want the hall to remain open for their activities.

Some husbands
think the women are spending too long with their activities in the hall.

Chiefs and elders
are divided. Some want to provide activities for young people to prevent them from drifting to town. Some don't like modern dances and music and only want custom dancing. Some want to be very strict with young people and not let them dance and play music.

4. Traditional ways of solving conflict

In Solomon Islands there is a very important traditional way of solving conflict between different communities or groups of people. This is based on many of the ideas already mentioned. It involves **reconciliation** and compensation. To reconcile means that the groups agree to forget their conflict and **forgive** each other. One side may admit that they did something wrong and apologize (say sorry) and the other side may forgive them—or both sides may admit they were wrong and forgive each other. This usually means discussion and negotiation between the two sides.

Reconciliation and forgiveness are very common in Solomon Islands and traditionally also involve **compensation**. This means that the side that admits they did something wrong pays something to the other side—or both sides may pay each other if they have both done wrong. Compensation, as shown in the photograph at the beginning of this chapter, usually means giving something away. This is usually shell money or another form of traditional money such as feather money, pigs, or food crops like taro and yams. These days, modern money or goods bought in shops can also be used for compensation.

The compensation (gift) means that the side or sides are sorry. Once it is accepted both sides are friends again. It is not the gift itself that is important, therefore, but the thought behind it. The materials given or exchanged, such as money or food, are only a **symbol** or sign that the side or sides are sorry and want to reconcile and forgive each other. In Melanesian custom, even if you want to thank someone for something, you do not just say thank you—you usually give something to show that you are thankful.

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Glossary

aggressive talking or acting as if you want to fight

assertive putting forward your ideas firmly and strongly but peacefully, giving reasons for them

conflict a serious argument or dispute between people

consensus making decisions by discussion and everyone agreeing on something without voting

dispute argument or disagreement between people

flight running away from a difficult situation

just something that most people consider fair or right

mediation when an outsider tries to bring together both sides in a dispute so that they come to an agreement

offender a person who does something wrong to someone else

open mind; open-minded being willing to listen to all sides in an argument without favouring one side or the other

problem solving trying to solve a dispute or conflict by being willing to listen to both sides and finding a solution which both sides can accept

respecting behaving in a good way towards people and considering their ideas and feelings

victim a person who has had something wrong done to them

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Chapter 13

Gender Issues

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1 What is gender?

You were all born as either a girl or a boy, and you will soon become women and men. You will already have discovered that the way you live and are expected to behave is affected by whether you are a girl or a boy. It affects the way you behave, the things that interest you and that you like doing, the friends you have, and many other things.

Activity 1

Divide into mixed groups, if possible with at least two boys and two girls in each group.

Copy the table and write some of the differences in behaviour between boys and girls—that is, the different ways girls and boys behave or are expected to behave according to the cultures of Solomon Islands.

Girls' behaviour	Boys' behaviour
?	?

As you found out from Activity 1, girls and boys are different from each other. They behave in different ways and they are expected to do different jobs. The ways boys and girls or men and women are different from each other is called **gender**. The way you behave is affected by your gender. You will have already discussed this in the chapter on families in the Home Economics book.

In every community the different genders have different **roles** and **responsibilities**.

Your role is what you are expected to do or the way you are expected to behave. In Solomon Islands one role of females (girls and women) is to look after children. Another is to cook the meals. They are responsible for teaching children how to behave and for making sure that the members of the family have enough to eat. This does not mean that men never look after children or help with the cooking, but girls and women are mainly responsible for these things.

Activity 2

In groups, discuss and make lists of the main roles and responsibilities of girls and of boys. The table in Activity 1 may help you.

Sometimes people do not agree with their roles and responsibilities. Girls or boys might not like what they are expected to do, or the ways they are expected to behave. This can produce **gender issues** or arguments between girls and boys or women and men.

The following poem was written about a girl who was unhappy with the way she was expected to behave compared to her brothers. It was written by Jully Makini from Western Province. You may find some books of her poems in your library. Try to read some more. Some of them are about gender issues.

Figure 13.1

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A Man's World

By Jully Makini

My brother can sit on the table
I mustn't
He can say what he likes whenever he likes
I must keep quiet
He can order me around like a slave
I must not backchat
He gives me his dirty clothes to wash
I wish he could wash mine!
If he sits on the front steps
I must go round the back door
If the house is full
I must crawl on my hands and knees
I must walk behind him not in front
Watch my speech when he is in the house . . .
Carry out my love affairs behind his back
Custom allows him to thrash both of us if caught
But he can carry on in front of me
That's his privilege
I must pay compensation
If I'm to get married
Or pregnant without a hubby
A brother can make a living out of his sisters!

Activity 3

After reading the poem, discuss the following in groups.

1. What things is this girl not allowed to do? What things must she do?
2. Does this girl agree with the things she is expected to do or the ways she is expected to behave? How does the poem tell you what she thinks? Use the words of the poem.
3. What does she mean by saying 'he can carry on in front of me' and 'a brother can make a living out of his sisters'? What do you think the word 'hubby' means?
4. Are the traditional customs in your area similar to those described here? Describe the similarities or differences.
5. What effect do you think these ideas and customs have on girls' ideas about themselves and their position within the family?
6. Do you agree with the customs and ways girls are expected to behave as described in the poem? Which things do you disagree with? Give reasons.

2 Role and status of men and women

A person's **status** means how important other people think they are and how much other people respect them. Read what Alice Aruhe'eta Pollard, a woman from 'Are'are in Malaita, wrote about the roles and status of girls and women.

Figure 13.2 Alice Pollard Aruhe'eta

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Alice Pollard on the roles of girls

Solomon Islands girls are expected to take on the roles and responsibilities of adults at an earlier age than are boys. They assist their mothers both at home and in the gardens. They collect and carry firewood, water and foodstuffs. In this way they soon become used to their future roles as mother and housewife and learn the skills required for married life. The girls are also taught, from a young age, how they are to behave towards men and boys. They are required to respect and take care of the needs of their brothers. The girls are not permitted to answer back to their male relatives, but must do as they are told. By these means the girls are taught the traditional female roles of obeying, and being of a lower status or less important than men.

However, women do not see their role as a bad one. Instead a Solomon Islands woman is proud of herself and the way she supports her husband …

Figure 13.3

Activity 4

In groups, discuss the following ideas.

1. Do you think that girls should always have to obey boys or men?
2. Do you think that girls should have a lower status or be considered less important than boys and men?
3. Does Alice Aruhe'eta Pollard agree or disagree with the way girls and women are treated?

3 What is gender conflict?

The world is changing and many girls and women no longer agree with the way they are expected to behave. This may lead to **gender conflict** or arguments between boys and girls or men and women.

Read about Sam and his sister Thelma.

Sam and Thelma's jobs

Sam is a Year 8 student while his sister Thelma is in Year 7. They live in town with their parents and three older sisters.

Their cousin takes Sam and Thelma to school every morning and back home by bus.

Back at home Sam and Thelma collect leaves around their house to keep the area clean. They throw the leaves on the rubbish site and then they are expected to sweep the floor of the house before their parents return home at 5 o'clock in the evening. After this they are allowed to play with the neighbour's children. Sometimes they also help their cousin to collect water from the tank or weed around the house.

At school the teacher has a duty roster for Sam's class in which Sam and his friend are responsible for sweeping the classroom every Thursday afternoon. Fred always complains when cleaning the classroom. He says that sweeping the classroom is a female's job and is against his custom, so most times he leaves his friend Sam to clean the classroom alone, but Sam does not complain.

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Activity 5

Discuss the following.

1 Who is Sam's sister?

2 What do Sam and Thelma do every day after school?

3 Are Sam and Thelma treated differently at home?

4 Why does Fred always complain about cleaning the classroom?

5 What is the example of gender conflict in this story?

4 Changes in ideas on gender

Ideas on the roles and responsibilities of girls and boys, men and women, are changing rapidly. Alice Aruhe'eta Pollard suggests that three things have produced these changes.

1 *Christianity* has taught us that all people, men and women, are equal in the eyes of God. The churches have encouraged women to learn new skills through church women's groups. As you learnt in Chapter 4, in most places in Solomon Islands the traditional leaders were men. Now in some churches women have become pastors and leaders of the church.

2 *Schools* have slowly accepted more girls, and parents have allowed more girls to go to school, so that some schools now have an equal number of girls and boys. At school the girls found out that they do as well as boys, sometimes better. At the same time subjects like this one, Social Studies, have taught ideas about treating girls and boys equally.

3 *Money* has made some women independent of men. They can earn money by helping to grow and sell cash crops, selling vegetables or betel nuts in the market, selling mats and other things they make, or by getting paid employment in towns or as teachers and nurses in the villages. Once women no longer have to rely on men for money they want to be treated more equally.

Activity 6

All of these things are changing ideas on gender. Do you agree with these changes? In groups, discuss the following and report your ideas to the whole class.

1 Should women be allowed to become pastors and priests?

2 If parents can only afford school fees for some of their children, who should they send to school: their sons or their daughters? Give reasons.

3 In school, should girls and boys study the same subjects or should certain subjects, like Home Economics or Technology, be for girls or boys only?

4 If a married woman earns money by selling things or working, should she be allowed to keep the money or should she give it to her husband? Give reasons.

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Mary Rongo's story

Another reason for changes is that some women go overseas and learn different ideas there. One woman from Gela, Mary Rongo, wrote about her experiences. Read what she wrote and then answer the questions which follow.

Women and leadership

Not long ago I went on some leadership training workshops, one with some men and the other with only women.

When the women were working on their own, the workshop was much better. The women weren't frightened and were keen to share their ideas …

We talked about men and why they are not willing to share their ideas. I see this in the village. Men seem to have no respect. In custom, women have their heads on the ground—perhaps that is why men look down on us.

I went to Australia and was surprised. There are no men and women there—everyone is the same. Here men say they are the boss. But women at the leadership workshops and in the villages are beginning to talk and share ideas. There is a bit of a change really—I mean the men are inviting women to workshops now.

But in Ngella, if you marry, that's the end of working. Lots of young girls at home teach at primary school. Then they marry and that's the end—it really discourages people.

Activity 7

1 Why do you think Mary says women learn more on their own?

2 Why does she say that in Australia there are 'no men and no women'?

3 Do you agree that women should stop working if they get married? What do we lose if we force women to stop working?

5 Professional women

In New Zealand, as in Australia, men and women are usually treated equally. The result is that in 2003 the five top positions in New Zealand were held by women: the Governor General; Prime Minister; Leader of the Opposition; Chief Justice and Attorney General were all women. In 2009 Australia got its first female Governor General and its first female Prime Minister in 2010. Women are now prime ministers in many countries.

In Solomon Islands by 2010 we had only had one female Member of Parliament for a short period. However, we now have many women in important, **professional** positions. Some of them are shown in Figures 13.4 to 13.7.

Figure 13.4 Magistrates in 2010

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Figure 13.5 A female electrician

Figure 13.7 A female dentist

Figure 13.6 Policewomen

Activity 8

Hold a debate on the motion 'That girls and boys, women and men, should be treated equally in all aspects of life.'

Alternatively, use **role reversal** for this. Ask all the boys to argue in favour and all the girls to argue against.

Figure 13.8

Activity 9

Look at the cartoon in Figure 13.8. In groups, use the ideas in the cartoon to act out a story of one girl going from village life to town life.

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Glossary

gender the differences in behaviour and expectations between boys and girls or men and women

gender issues ideas or different opinions concerned with the differences between girls and boys, men and women

gender conflict arguments about the roles and responsibilities of boys and girls, men and women, and the ways they should behave

professional someone who is trained to do a skilled job, especially a job which needs a lot of education

responsibilities things that are your job or duty to do

roles the jobs a person is expected to do or the responsibilities they have

role reversal pretending to be the opposite of what you are, e.g. boys pretending to be girls and girls pretending to be boys

status the importance a person has and respect shown to them

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Appendices

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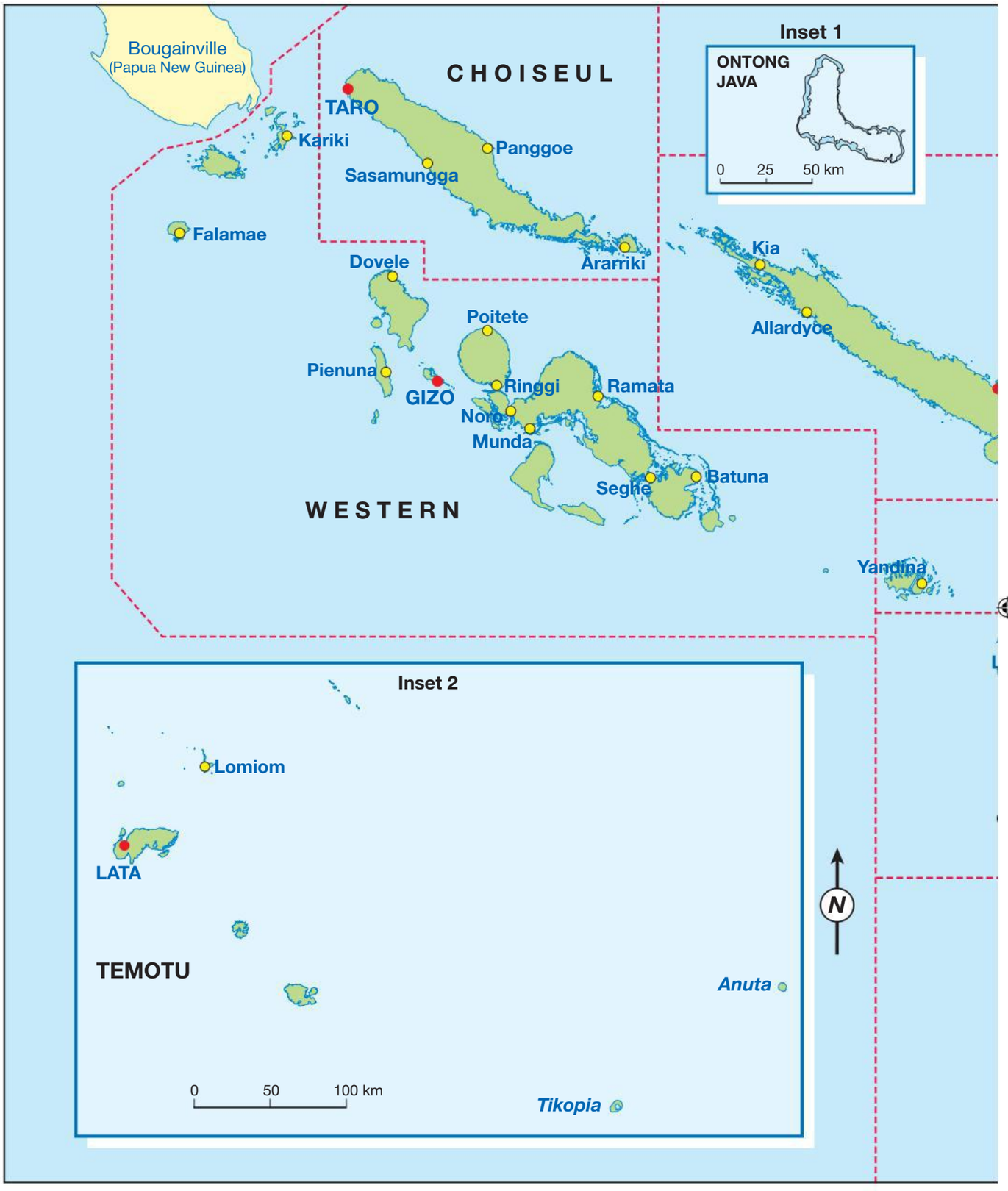
Appendix 1: Solomon Islands Map



Note: On the Solomon Islands map Temotu and Ontong Java are in boxes. These are not in their real positions because they are far from the rest of Solomon Islands and there is no space to fit them into their real positions. Temotu is actually far to the east of Makira (to the right of the map) and Ontong Java is to the north of Malaita and Isabel (at the top of the map). On maps, boxes like these are called insets.

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Appendix 2: Pacific Basin Map

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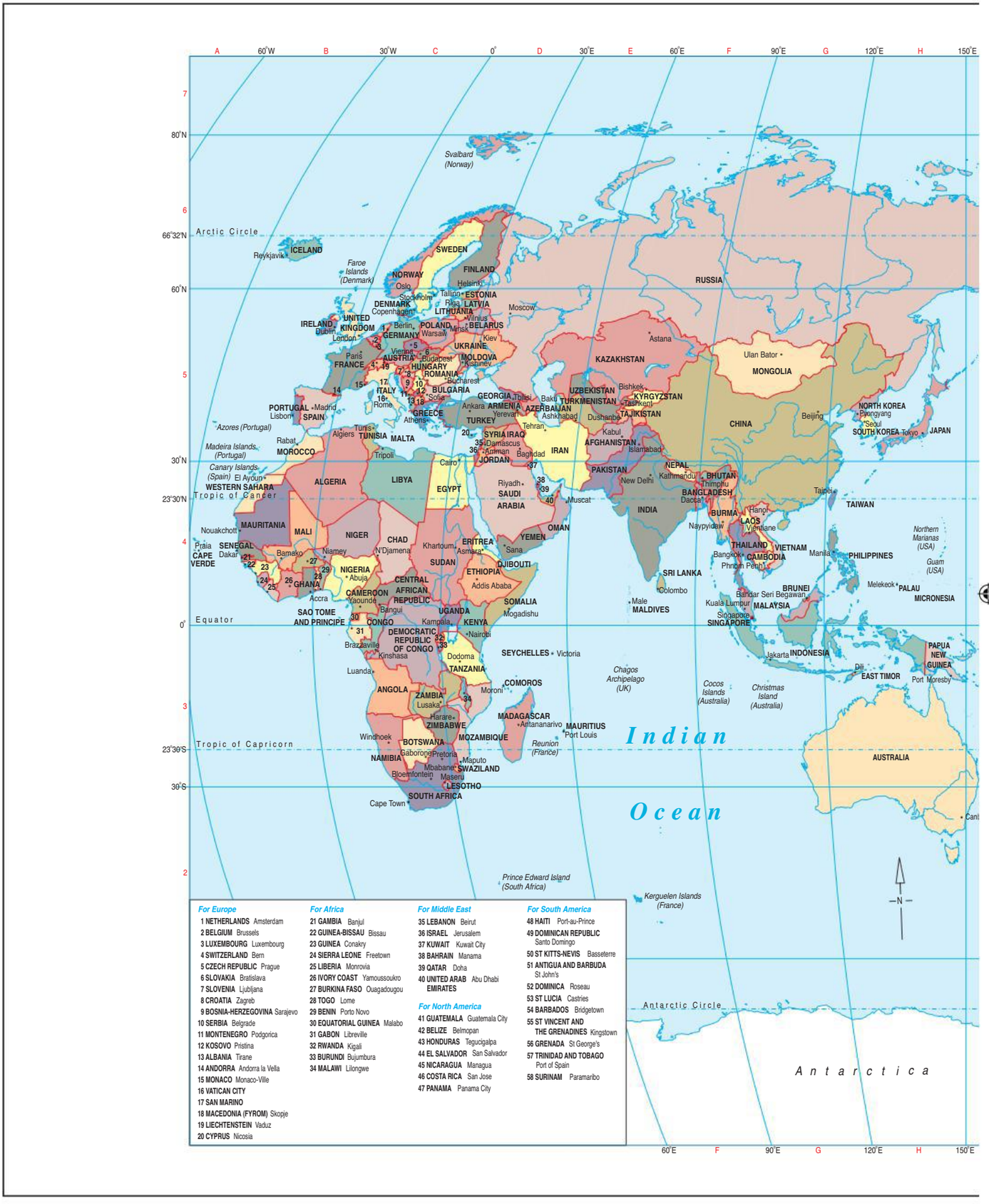
Appendix 3: World Map



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SI Social Studies Year 7 LB_13.indd 241 16/09/10 9:26 AM

SI Social Studies Year 7 LB_13.indd 242 16/09/10 9:26 AM

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