

Introduction to Fiji: location and topography

1. Using Figure 1, describe Fiji's location in relation to Australia and to other Pacific Islands.
2. List the three largest islands in Fiji from largest to smallest.
3. What is Fiji's capital? Describe its location.
4. List some of the potential difficulties of having people in one country living on so many separate islands.
5. Look at the data about Fiji in Figure 2.
 - a. Comment on Fiji's GDP – per capita (PPP) when compared to Australia's at \$31 900.
 - b. Which sector earns the most income for Fiji?
 - c. Compare the amount of GDP from agriculture and the percentage of people employed in this sector.
6. Make a sketch of the oblique aerial photograph in Figure 3 showing Fiji's island coastline and mountains. Label the following on your sketch: mountain range; bay/s; agricultural land; river; settlement. Write a description of this part of Fiji's coastline.
7. Study Figure 4 the topographic map of Taveuni Island, and the satellite image of Taveuni Island, Figure 5.
 - a. Describe the general topography (lie of the land) of Taveuni Island.
 - b. Lake Tagimaucia is an old volcanic crater. Describe its location.
 - c. Describe the location and distribution of villages on the island. How can you account for this pattern?
 - d. Where is cultivated land located? Why do you think agriculture occurs here and not in other parts of the island?
 - e. What is the relationship (spatial association) between topography and forest cover on Taveuni Island.
 - f. Why do you think there are no roads along the southeast coast or the central part of the island?
8. Why does the International Date Line (IDL) pass around Taveuni Island and other Fijian islands? What would happen if the IDL passed through as a straight line?
9. Drawing cross sections.

To find out more about the topography and drainage of this island you will draw a cross section. A cross-section is a view of the land as if it were looked at from the side. Cross sections give you a better idea of the shape of the land, that is, where the high land and low land is, as well as, the steepness of the land.

Work with a partner so that two cross sections are completed: one for the line A–B; the other for the line C–D.

Steps to drawing a cross section

Step 1 Locate the line drawn from A to B on the map. Place the edge of a piece of paper from A–B. Place a mark on the paper where each contour line touches the edge of the piece of paper and write the value of each contour line. Do not shift the paper.

Step 2 Mark any other features such as roads or rivers that can be seen at the edge of the piece of paper.

Step 3 Use graph paper to draw your cross-section. The vertical axis should be feet above sea level; the horizontal axis will be the length or distance of the transect. The vertical scale is not the same as the horizontal scale; it is drawn at a larger scale, or exaggerated. This is done so the resulting cross-section looks more realistic than if the vertical scale was kept the same as the horizontal scale. Make sure the axis' are clearly labelled.

Step 4 Place your piece of paper along the horizontal axis of the graph. Make sure that 'A' lines up with the vertical axis.

Step 5 Now place a dot, on the appropriate vertical scale, for each of the markings on the paper's edge. Make sure each dot lines up with the marks on your piece of paper.

Step 6 Now join the dots with a smooth line to draw your cross section. Label any important features.

Step 7. To complete your cross section make sure you have a title and a direction arrow to show north.

Study the completed cross sections and answer the following questions:

- a. Describe the cross section you have drawn. Is the land steep, flat or gently sloping?
 - b. How does this compare with the other cross section?
 - c. Is there a relationship (spatial association) between the slope of the land and the number of rivers in the area? Use the topographic map to help you answer this.
 - d. Is Taveuni Island steeper from east to west or northeast to southwest?
 - e. What influence has volcanic activity had on the formation of this island? Use an atlas to consider the global tectonic plate boundaries to support your answer.
10. Study Figure 6 showing the occurrence of earthquakes.
- a. Where do earthquakes of high intensity occur? Where do the strongest earthquakes occur?
 - b. Write a short paragraph describing the distribution (pattern) of earthquakes experienced in Fiji.

Communicate the ideas

Undertake a think/pair/share activity reflecting on three geographic characteristics that you have learnt about Fiji.

Fiji climate and hazards

Climographs (climate graphs) show the average rainfall (precipitation) and temperatures experienced at a location. Data is averaged over a 10-year period. A bar graph shows the average monthly rainfall and line graphs show the average monthly temperatures.

1. Figure 7 provides the data for the following questions.
 - a. Study the climograph for Fiji’s capital, Suva. Describe the distribution of rainfall experienced over a year (include the wettest and driest time of year). Is it an even or uneven distribution? Are there distinct seasons?
 - b. Describe the pattern of monthly minimum and maximum temperatures for Suva. What do you notice about the difference between the minimum and maximum for each month? That is, when does the greatest range in temperature occur?
2. Use the same scale as the Suva climograph, draw your own climograph showing this data for Nadi.

Drawing climographs

A climograph is made up of a bar graph and a line graph. On the horizontal axis divide a line into 12 equal portions representing the months of the year. Use a vertical axis on the left side for temperature; check the statistics to be plotted and ensure the highest number will fit in the space you have allocated for the graph. Divide the axis evenly for the temperatures to be plotted against. For each month plot the relevant figure by using a small dot in the centre of each monthly division. When all dots are completed, join the dots with a fine, smooth (curved) line. Then on the right hand vertical axis divide this to include the highest number to be plotted for rainfall (precipitation). This time draw a bar for the full width of a month to the required height; there should be no spaces between the bars. Each axis (3 of) should be labeled with the name of what is being represented and the units of measurement, for example, rainfall (mm). To complete the climograph, provide a title using the place name that the data represents, and if possible, including the latitude and longitude of the location.

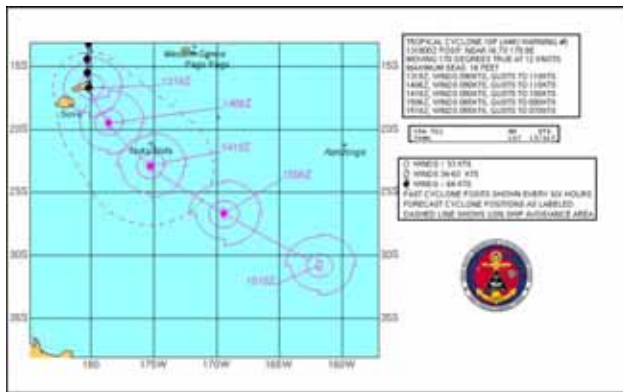
Nadi: 17.47°S 177.29°E		Average temperature °C	
Month	Average precipitation (mm)	Min	Max
Jan	343	23	32
Feb	292	23	32
Mar	341	23	31
April	160	22	31
May	89	20	30
Jun	65	19	29
Jul	45	18	29
Aug	65	19	29
Sep	70	19	29
Oct	102	21	30
Nov	132	22	31
Dec	178	22	32

- a. Compare and contrast the rainfall and temperatures for Nadi and Suva. Which has more rainfall and when? Which has more constant temperatures?
- b. Conduct some research about the climate where you live and obtain a climograph or data for a climograph. Compare your climate with that experienced in Suva and Nadi – what are the similarities and differences? Use data (statistics) to support your answer.

3. Use the map in Figure 8 to describe the distribution (pattern) of average rainfall across the Fiji region.
4. Study the topographic map of Taveuni Island (Figure 4) and Figure 8. What is the relationship between topography and rainfall? Use this information to predict the reasons for high rainfall on Viti Levu and Vanua Levu.

Refer to the data in the Figure 9.

5. a. Relative humidity is the amount of water vapour actually present in the air compared to the amount the air can hold; it is expressed as a percentage. When the air is fully saturated it has 100 per cent humidity. Describe the relative humidity experienced in Suva over one year. What might a tourist feel during a day in April?
- b. What discomfort is experienced due to the humidity? Write one sentence to describe the relationship between relative humidity, level of discomfort and number of wet days.
6. a. Use the graph in Figure 10 to describe the pattern of cyclones in Fiji between 1945 and 2000. Which year experienced the lowest number of cyclones? The highest?
- b. According to the graph, are cyclones on the increase? Explain.
7. Study the path of Cyclone Ami as shown below. Describe the path and the strength of the winds as the cyclone approached and hit Fiji. (1 knot = 1.852 kilometres per hour)



8. Study Figure 11. Imagine you are one of the children living in this village. Write a letter to a friend in Australia telling him/her about the arrival of cyclone Ami and how you feel after the event. Read further about the impact of the cyclone on the ReliefWeb site.

Communicate the ideas

Imagine you are planning a four-week trip to Fiji. Use the climate data and describe the time of year you would choose to go. Give reasons for your choice and share your decision with another class member. Is there an ‘ideal’ time to visit Fiji?

Fiji population

Use Figure 12 to complete questions 1 and 2.

1. How much did Fiji's population grow between 2005 and 2007? Convert this to a percentage.
2. Work in groups of 3–4.
 - a. Use an atlas or the Internet to conduct some research about Australia's population. Create a "Fact box" for Australia using information on population density (people per square km); access to improved sanitation; life expectancy at birth (years); infant mortality rate; under-five mortality rate; access to an improved water source; adult literacy rate; and total fertility rate. Try to find data for the same years as Fiji's statistics.
 - b. As a group, prepare a presentation for your families. The aim of the presentation is to explain the population terms and to compare the data between Fiji and Australia. You will need to present data for the two countries. You need to be creative in your presentation – use cartoons, drawings, diagrams, speech bubbles and photographs as well as graphs and tables.

Using population pyramids (profiles)

Population pyramids provide a lot of information about a country's population. Comparisons can be made between males and females. The shape of the pyramid provides information such as:

- a young population if the lower bars are very wide and wider than the top bars;
- an older population if the higher bars are quite wide;
- high birth rates at a particular time will also be seen as wider bars;
- events such as war, disease, famine or emigration show on the pyramid as population losses.

Population pyramids can be accessed at the Internet site of the US Census Bureau.

3. Study Fiji's population in 2002 as shown in Figure 13.
 - a. Would you describe this as a 'young' or 'old' population? Explain.
 - b. Give examples of an age group where the number of:
 - males is greater than females
 - females is greater than males
 - males and females are equal.
4. Study the population pyramid outlines that show the predicted pattern for 2025 and 2050.
 - a. What has happened to the shape of the pyramid in each case, compared to the 2002 pyramid?
 - b. Do you think Fiji's population is expected to become an ageing population? Explain your answer.
5. Study Figure 14. Describe the change in numbers for each age grouping between 1975 and 2025 (predicted).
6. Study the graphs in Figures 15-16.
 - a. What has happened to Fiji's life expectancy over time? How does this compare with the world average?
 - b. Describe the change in literacy rates in Fiji between 1980 and 2000. Is the gap between males and females closing?
7. Study the bar graph showing ethnic groups in Fiji (Figure 17).

- a. Do you think this ethnic mix is unusual? Explain. What problems, if any, might this cause?
 - b. How has the ethnic mix changed over time? Which ethnic group was dominant before 1996? After 1996?
 - c. Predict what might happen in the future.
8. Study Figures 18 and 19 and their accompanying comments.
- a. Why might some Indigenous Fijians like to move to larger settlements?
 - b. When did the Indians first arrive in Fiji and what were they sent to do?
 - c. Why might some members of Fiji's Indian community want to move away from Fiji?

Communicate the ideas

The lives of individuals within the Fijian community show considerable contrast. Create an interview with the young person in Figure 18 that shows his understanding of the population composition, structure and dynamics when he is about 20 years of age.

Fiji agriculture

1. Study the Fiji land use map in Figure 21 and the “Fact Box”.
 - a. Describe the location of the five different land use areas in Fiji.
 - b. What natural feature limits agricultural land to 16 percent in Fiji?
 - c. Describe the relationship between topography and land use.
2. Create a line drawing of the oblique aerial photograph showing agricultural land in Figure 22. Label the following: roads; river; settlement; harvested crops; growing crops; mountain ranges; treed areas. Using arrows, mark on your drawing where population pressure might create an environmental impact on the land.
3. Study Figure 23 and the data in Figure 24.
 - a. Describe the change in sugar and molasses production over time. Is there a problem having a large reliance on one crop? Explain.
 - b. Describe the change in Fiji’s fish production over time.
4. Figure 25 provides additional evidence as to the importance of fishing. How is fishing important to the economy and to local communities?
5. Use the following table to:
 - a. Draw two bar graphs; one to represent the area used for each crop and the other to show the number of farmers for each agricultural activity.
 - b. How do you explain the use of the term ‘not available’ in each of the columns?
 - c. Is there a relationship between the area of land used by an agricultural activity and the number of farmers working in the industry? Find two ways to explain your answer.

Fiji agricultural production, 1999

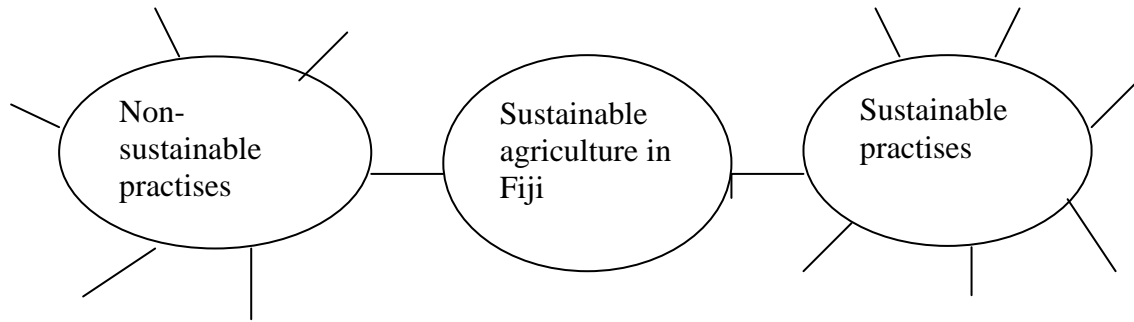
Crop	Area (ha)	No. of farmers
Sugar	73 900	22 337
Coconut	64 953	not available
Cocoa	578	2 220
Ginger Mature	24	700
Green	46	
Rice	8 411	11 320
Pineapple	193	1428
Vegetable/Fruits	not available	14 320
Root Drop Dalo	2 400	not available
Yam	428	not available
Cassava	2 610	not available
Kumala	1 328	not available
Yagona	2 200	not available

6. Figure 26 outlines the importance of mahogany plantations to Fiji’ economy and to local land owners. Why is it important to value-add to these timber products?

Communicate the ideas

The sustainability of the land and water as the Indigenous Fijians have known it, is under threat.

- a. Research a definition of the term 'sustainability'.
- b. Complete a concept map to show the sustainability of agriculture in Fiji. Use Inspiration or draw your own concept map as the ideas develop and interconnect.



Fiji industry and trade

1. Using Figure 27, list the top three industries for Fiji in 2002. How does agriculture compare with these?
2. Study the graph (Figure 28) showing major exports and imports for Fiji in 2005.
 - a. Are main exports for Fiji based on agriculture or manufacturing?
 - b. Are Fiji's exports vulnerable if there is climate disaster? Explain.
 - c. What is Fiji's main import? Why is this an expensive but necessary item to have?
 - d. Are main imports for Fiji based on agriculture or manufacturing?
 - e. Why would Fiji spend more money on imports than it gets from exports?
3. Study the graphs (Figure 29) showing Fiji's export and import partners. What percentage of Fiji's partners come from the Pacific? From Asia? Describe the importance of regional trade to Fiji.
4. Design a colour advertisement for a business magazine promoting the Fiji Water company as an investment option.
5. Figure 36 shows from where tourists to Fiji came in 2004.
 - a. From which country do most tourists come?
 - b. Is there a relationship between distance traveled to Fiji and number of tourists? Use an atlas and calculate the distances over which travelers have come.
6. Using the table below:
 - a. How have tourism numbers changed over time?
 - b. Four coup d'etats have occurred in Fiji in recent history – 1981 (2 of), 2000 and 2007. What impact might a coup d'etat have on tourism?

Glossary:

Coup d'etat: a sudden and decisive change of government illegally or by force.

Fiji tourism arrivals 1991–2004

Year	Arrivals
1991	259 350
1992	278 534
1993	287 462
1994	318 874
1995	318 495
1996	339 560
1997	359 441
1998	371 342

Year	Arrivals
1999	409 955
2000	294 070
2001	348 014
2002	397 859
2003	430 800
2004	502 765

Source: Fiji Islands Embarkation and Disembarkation Cards - Department of Immigration

7. Use the following table to:
 - a. Construct a multiple line graph showing the percentage of sugar, tourism and garments to Fiji's GDP over a 20-year period.
 - b. Outline the importance of tourism to Fiji's economy over time. How does this compare to other industries such as sugar and garments?

GDP components for Fiji, 1980-2001

Year	Percentage of GDP		
	Sugar	Tourism	Garments
1980	18.3	11.3	0.0
1981	12.9	12.0	0.0
1982	12.1	13.8	0.0
1983	9.7	11.7	0.1

1984	9.3	13.7	0.1
1985	8.4	12.7	0.2
1986	10.1	13.9	0.4
1987	13.0	10.4	0.7
1988	12.7	12.0	2.1
1989	13.2	17.1	6.2
1990	12.9	17.0	6.6
1991	12.0	15.6	7.1
1992	11.2	16.5	5.8
1993	10.6	16.0	5.9
1994	11.0	17.1	6.2
1995	11.5	16.8	7.9
1996	11.8	16.2	7.5
1997	8.2	17.2	7.9
1998	9.5	22.1	11.9
1999	10.2	21.7	12.6
2000	9.2	16.1	13.0
2001	8.5	19.2	12.3

Source: Reserve Bank of Fiji (various issues)

Communicate the ideas

Either design a colour advertisement for a business magazine promoting Fijian investment opportunities found in products such as Fiji Water and resort tourism, like Loma Loma resort (figure 3).

OR

Imagine you are the Fijian Minister for Commerce, Industry, Investment and Communication. Discuss with at least one other person possible strategies/policies the Minister might try in an endeavour to make the Fijian economy more viable. Select two key strategies/policies and justify your selection. Write this as a paper to present to parliament.

Contrasts in Fiji

1. Look at the photographs in Figures 33 and 34. These places are all located on Figure 1.
 - a. Use a table to make a list of the differences in buildings in these photos.
 - b. How do history and culture influence the size, shape and colour of the buildings?
 - c. How do the buildings reflect the main functions of these settlements?
2. Sigatoka is a settlement of 8000 people set in an agricultural area on the mouth of the Sigatoka River. It is located on the southern coast of Viti Levu, 127 km west of Suva.
 - a. Describe the differences in the two houses in Sigatoka.
 - b. Make a list of how living conditions would vary between the families living in Navala and in Sigatoka?
 - c. Which buildings would better withstand the earthquakes and cyclones that occur in the area?
 - d. Imagine you are a real estate agent. Write an advertisement that will attract people to buy each of these houses.
3. Use Figure 35 to describe how a traditional village lifestyle compares to that of a Fijian living and working in Suva (Figure 33)?
4. The Indian lady in Figure 36 discusses land tenure. How has land tenure affected the Indigenous Fijians and Fiji's Indian community? Why is there some uncertainty in the Indian society?
5. Imagine your school has a relationship with the school children in the photograph (Figure 37). Work in groups of five to design a short video that you could produce to send to the Fijian school to compare and contrast your schooling with theirs. If possible, make the video and show it to the class.

Communicate the ideas

Fiji is a land of contrasts. With a partner, discuss the contrasts and complete the following table to list the human activities that have created these variations.

Contrast	Cultural differences	Living conditions	Peoples' outlooks	Attitudes to environment
Human activity				

The future

1. Study the bar graph in Figure 38 showing the changing rural and urban populations in Fiji.
 - a. Describe the trend shown by the graph.
 - b. What might this trend show about changes in living conditions in Fiji?
 - c. Write two reasons that might account for this change.
 - d. Predict what might happen to this trend in the future. Justify your answer.
2. Read the data accompanying the pie graph in Figure 39
 - a. Outline the difference between native and freehold land.
 - b. Record your view about the sale of freehold land to tourists – do you think this should be allowed? Why? Why not?
3. Using Figure 40, describe how the non-renewal of land leases might cause conflict between Indigenous Fijians and Fiji's Indian community. What economic impact will this action have?
4. Figure 41 shows how one Indian family is facing the issues of land tenure. Work with another student to think of other solutions to the land tenure problem. Write a letter to the Fijian government outlining your ideas and solutions to resolve this issue. Share this with the class.
5. Refer to Figures 42 and 43 showing Australia's assistance in the Pacific region.
 - a. How much support will Australia provide to Fiji in aid assistance in 2007–2008? What forms is this aid likely to take?
 - b. How does this compare with the 2006–2007 period? Can you suggest why this is the case.
6. Study the graph in Figure 44 of the international assistance provided to small island states.

Glossary: GNI (Gross National Income) – the total value of goods and services produced within a country plus the income received from Fijians living and working elsewhere (includes money sent home to families).

- a. How does assistance to Fiji compare to other small island states?
- b. Which economic activity helps keep Fiji's reliance on aid lower than other island states?
- c. Work with another student to research about the economic situation in one other Pacific small island state and suggest why it might need more assistance than Fiji.

Communicate the ideas

The Government's draft Strategic Development Plan (SDP) for 2007-2011 said the performance of the Fiji Islands economy since 1999 has been uneven due to change. Create a table to show how each of the factors – social, historic, economic, environmental, political and technology (SHEEPT) – will influence the future characteristics of Fiji and its development.