education

Department:
Education
REPUBLIC OF SOUTH AFRICA

NATIONAL SENIOR CERTIFICATE

GRADE 12

GEOGRAPHY P1

EXEMPLAR 2008

MARKS: 300

TIME: 3 hours

This question paper consists of 14 pages and an annexure of 6 pages.

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INSTRUCTIONS AND INFORMATION

1. This question paper consists of TWO sections, namely SECTION A and SECTION B.

2. Answer THREE questions only which should be chosen as follows:

   ONE question from SECTION A
   ONE question from SECTION B
   A THIRD question from SECTION A or SECTION B (which has NOT been answered already).

3. All diagrams are included in the annexure.

4. Number all your answers in the CENTRE of the line.

5. Leave a line between subsections answered.

6. Start EACH question on a NEW page.

7. Number the anwers correctly according to the numbering system used in this question paper.

8. Do NOT write in the margins of the ANSWER BOOK.

9. Encircle the numbers of the questions that you have answered on the cover page of the ANSWER BOOK.

10. Where possible, illustrate your answers with labelled diagrams.

11. Write neatly and legibly.

SECTION A: PHYSICAL GEOGRAPHY

Answer at least ONE question from this section.

QUESTION 1

1.1 Choose a description from COLUMN B that matches an item in COLUMN A. Write only the letter (A – L) next to the the question number (1.1.1 – 1.1.10) in the ANSWER BOOK, for example 1.1.11 M.

COLUMN A		COLUMN B	
1.1.1	Abstraction	A	the cold front merges with the warm front and the warm sector is lifted off the ground
1.1.2	Instability	B	the erosion of a slope at a constant angle
1.1.3	Captured river	C	air that moves up a slope during the day
1.1.4	Coriolis effect	D	the very slow downward movement of soil under the influence of gravity
1.1.5	Scarp retreat	E	the lowest level a river will erode to
1.1.6	Occlusion	F	the lengthening of a river course by the river cutting backwards towards its source
1.1.7	Soil creep	G	the inward horizontal flow of air towards a centre
1.1.8	Convergence	H	the tendency of air moving across the rotating surface of the earth to be deflected
1.1.9	Base level of erosion	I	warm, dry winds that flow down the escarpment
1.1.10	Anabatic winds	J	a river that is diverted and loses water
		K	a watershed is cut back and lowered by highly erosive rivers
		L	air that is warmer than its environment will continue to rise

(10 x 2) (20)

1.2 Refer to the extract as well as the satellite images of tropical cyclone Favio in FIGURE 1.2 and answer the questions that follow.

1.2.1 (a) Is tropical cyclone Favio an example of a low-pressure or a high-pressure system? (1 x 2) (2)

(b) With reference to FIGURE 1.2, give ONE reason to support your answer to QUESTION 1.2.1(a). (1 x 2) (2)

1.2.2 (a) What was the general direction of movement of tropical cyclone Favio? (1 x 2) (2)

(b) Give ONE reason to support your answer to QUESTION 1.2.2(a). (1 x 2) (2)

(c) Explain why tropical cyclone Favio was moving in the direction mentioned in QUESTION 1.2.2(a). (2 x 2) (4)

1.2.3 (a) What does one call the centre of a tropical cyclone that is clearly visible on the satellite images? (1 x 2) (2)

(b) Name ONE weather condition that is typical of the centre of a tropical cyclone. (1 x 2) (2)

(c) Explain why the weather condition mentioned in QUESTION 1.2.3(b) exists in the centre of a tropical cyclone. (2 x 2) (4)

1.2.4 (a) 'Favio is now an overland depression …'

What stage in the development of a tropical cyclone is being referred to here? (1 x 2) (2)

(b) Fully explain why the stage of development mentioned in QUESTION 1.2.4(a) was reached. (3 x 2) (6)

1.2.5 (a) Name TWO ways in which tropical cyclone Favio caused damage to the environment once it moved over Mozambique. (2 x 2) (4)

(b) Explain why there is a need to establish well-equipped tropical cyclone warning centres in Mozambique. (2 x 2) (4)

1.3 FIGURE 1.3A shows the longitudinal profile of a stream before rejuvenation has taken place. FIGURE 1.3B shows the longitudinal profile of the same stream after rejuvenation has taken place.

1.3.1 (a) The longitudinal profile illustrated in FIGURE 1.3A is that of a graded stream. What is meant by a *graded stream*? (1 x 2) (2)

(b) With reference to FIGURE 1.3A, give ONE piece of evidence to support the statement that the longitudinal profile of a graded stream is being illustrated. (1 x 2) (2)

(c) Explain why a graded stream develops a concave longitudinal profile. (2 x 2) (4)

1.3.2 (a) What is meant by the term *rejuvenation*? (1 x 2) (2)

(b) What feature in FIGURE 1.3B indicates that rejuvenation has taken place? (1 x 2) (2)

(c) Give TWO reasons why a stream can rejuvenate itself. (2 x 2) (4)

(d) Is the knick-point waterfall shown in FIGURE 1.3B an example of a permanent or a temporary base level of erosion? (1 x 2) (2)

(e) Give a reason for your answer to QUESTION 1.3.2(d). (1 x 2) (2)

1.4 FIGURE 1.4A shows a landform typically found in South Africa. FIGURE 1.4B shows the process of mass movement that will take place on the slopes of the illustrated landform.

1.4.1 (a) Identify the landform (feature) illustrated in FIGURE 1.4A. (1 x 2) (2)

(b) Explain, with reference to the underlying rock structure, how the landform identified in QUESTION 1.4.1(a) developed. (3 x 2) (6)

1.4.2 (a) What type of mass movement is illustrated in FIGURE 1.4B? (1 x 2) (2)

(b) Provide evidence from FIGURE 1.4B that mass movement is taking place. (1 x 2) (2)

(c) On which slope, the dip slope or the scarp slope, is mass movement more likely to take place? (1 x 2) (2)

(d) Explain your answer to QUESTION 1.4.2(c). (2 x 2) (4)

(e) Why do you think people should be made aware of the consequences of mass movement before building on slopes? (2 x 2) (4)

(f) Name ONE way in which slopes can be stabilised (reinforced) to reduce mass movement. (1 x 2) (2)

[100]

QUESTION 2

2.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (2.1.1 – 2.1.10) in the ANSWER BOOK.

2.1.1 Primary circulation refers to the circulation within one hemisphere on a global scale.

2.1.2 Pressure gradient refers to the difference in pressure between two points.

2.1.3 Isotherms are lines on a map that join places of equal pressure.

2.1.4 In the southern hemisphere air movement around a high pressure (anticyclone) is clockwise.

2.1.5 The polar front is formed where warm subtropical air and cool sub-polar air meet.

2.1.6 An aquifer is a rock that is impermeable and does not allow water to move through it.

2.1.7 A flow hydrograph records how much water passes a given point in a given period of time.

2.1.8 A periodic river is a river that only flows in the rainy season when it receives ground water.

2.1.9 Rocks that are uniformly resistant and exposed to the same type of weathering will weather at different rates.

2.1.10 Core stones are rounded stones that are exposed after erosion to make up a tor. (10 x 2) (20)

2.2 Refer to FIGURE 2.2 showing the tri-cellular circulation of the atmosphere.

2.2.1 (a) Why do meteorologists refer to a tri-cellular circulation of the atmosphere? (1 x 2) (2)

(b) Identify the THREE cells of circulation labelled P, Q and R respectively. (3 x 2) (6)

2.2.2 (a) What does the abbreviation *ITCZ* stand for? (1 x 2) (2)

(b) Where, at X, Y or Z, would the ITCZ be found? (1 x 2) (2)

(c) Name any TWO weather conditions that one will experience at the ITCZ. (2 x 2) (4)

(d) Explain why the weather conditions mentioned in QUESTION 2.2.2(c) exist at the ITCZ. (2 x 2) (4)

2.3 Refer to FIGURE 2.3A showing the weather forecast for 15 May 2007. FIGURE 2.3B is a cross-section through the eastern half of the country explaining the sunny conditions at all the inland weather stations.

2.3.1 What is meant by the term *inversion* shown in FIGURE 2.3B? (1 x 2) (2)

2.3.2 Name the high-pressure cell associated with the label *subsided air of continental origin*. (1 x 2) (2)

2.3.3 Why does an inversion develop at the lower side of the high-pressure cell mentioned in QUESTION 2.3.2? (2 x 2) (4)

2.3.4 With reference to FIGURE 2.3B, explain why sunny conditions are indicated for all the inland weather stations. (3 x 2) (6)

2.3.5 Will the inversion shown in FIGURE 2.3B be higher or lower than its current position during the summer months? (1 x 2) (2)

2.3.6 The vertical positional change of the inversion from winter to summer is of great importance to farmers on the South African plateau. Explain this statement. (2 x 2) (4)

2.4 Refer to the extract as well as the photograph and diagram of rivers draining into the Hartbeespoort Dam in FIGURE 2.4.

2.4.1 (a) Identify the drainage pattern of the Jukskei River as seen in FIGURE 2.4. (1 x 2) (2)

(b) Give ONE reason for your answer to QUESTION 2.4.1(a). (1 x 2) (2)

2.4.2 (a) Flooding is common in Alexandra. What is a *flood*? (1 x 2) (2)

(b) Why do people still build shacks on the banks of the Jukskei River if the area is threatened by constant flooding? (1 x 2) (2)

(c) Explain why there is a short lag time and a high flood peak as the Jukskei River flows through Alexandra. (3 x 2) (6)

(d) Name any TWO consequences of flooding for the inhabitants of Alexandra. (2 x 2) (4)

2.4.3 (a) Describe the locations of the sewerage works in relation to the rivers shown in FIGURE 2.4. (1 x 2) (2)

(b) What are the consequences of the above for people living on the banks of the Hartbeespoort Dam? (2 x 2) (4)

(c) State TWO measures that can be introduced by the provincial government to ensure that all rivers flowing into the Hartbeespoort Dam are free of sewerage effluents. (2 x 2) (4)

2.5 Refer to FIGURE 2.5 showing the four slope forms associated with a slope. All four slope forms are not necessarily found on a mountain or ridge.

2.5.1 Give ONE characteristic of each of the slope forms shown in FIGURE 2.5. (4 x 2) (8)

2.5.2 Explain why all four slope forms are NOT always found on a mountain or ridge. (2 x 2) (4)

[100]

SECTION B: HUMAN GEOGRAPHY

Answer at least ONE question from this section.

QUESTION 3

3.1 Choose a description from COLUMN B that matches an item in COLUMN A. Write only the letter (A – L) next to the question number (3.1.1 – 3.1.10) in the ANSWER BOOK, for example 3.1.11 M.

COLUMN A	COLUMN B
3.1.1 Gross domestic product (GDP)	A payment obligations that arise when a country imports or exports goods
3.1.2 Land-use zones	B classification of settlements according to the order of functions performed
3.1.3 Gross national product (GNP)	C the GDP divided by the country's population
3.1.4 Central place	D average income earned by an individual of a country in a given year
3.1.5 Balance of trade	E areas in an urban area that have one main function
3.1.6 Range of goods	F measures the value of all finished goods and services produced by a a country' permanent inhabitants in one year
3.1.7 GDP per capita	G a settlement that provides goods and services to a surrounding area
3.1.8 Urban profile	H measures the value of goods and services produced in a country in one year
3.1.9 Balance of payment	I the side view of a city
3.1.10 Urban hierachy	J a summary of a country's transactions with the rest of the world
	K the commercial and economic centre of an urban area
	L the maximum distance people are prepared to travel to make use of a service

(10 x 2) (20)

3.2 Refer to FIGURE 3.2 showing a settlement typical of the South African urban landscape. Urban functions/services of a low and a high order are shown.

3.2.1 (a) What is a *settlement*? (1 x 2) (2)

(b) Is the settlement shown in this figure a rural or an urban settlement? (1 x 2) (2)

(c) Give ONE reason for your answer to QUESTION 3.2.1(b). (1 x 2) (2)

3.2.2 (a) Distinguish between a *low-order function* and a *high-order function*. (2 x 2) (4)

(b) From FIGURE 3.2, identify ONE low-order function and ONE high-order function. (2 x 2) (4)

(c) Explain the meaning of the term *sphere of influence* of a function/service. (1 x 2) (2)

(d) Which one, the bakery or the hospital, will have a larger sphere of influence? (1 x 2) (2)

(e) Explain your answer to QUESTION 3.2.2(d). (2 x 2) (4)

3.2.3 (a) The Star Bakery is an example of a light industry. What is a *light industry*? (1 x 2) (2)

(b) Unlike a heavy industry the Star Bakery can be located close to the hospital. Explain why this bakery does not have to be located outside the city. (2 x 2) (4)

(c) Why is it important for the Star Bakery to have a central location? (2 x 2) (4)

3.2.4 (a) With reference to FIGURE 3.2, explain why many people from the surrounding rural areas are attracted to this settlement. (2 x 2) (4)

(b) Explain why it is important for the illustrated settlement to slow down the movement of people from rural areas to this settlement. (2 x 2) (4)

3.3 Refer to FIGURE 3.2 that shows various economic activities that one will find in and around most large cities in South Africa.

3.3.1 From FIGURE 3.2 identify ONE of each of the following:

(a) Tertiary activity (1 x 2) (2)
(b) Quaternary activity (1 x 2) (2)

3.3.2 Farming activities are shown outside the settlement. Farming plays an important role in South Africa's economic development.

(a) Name ONE factor that promotes the farming sector in South Africa. (1 x 2) (2)

(b) Farming can be described as a vulnerable economic activity in South Africa. Explain this statement. (2 x 2) (4)

(c) Briefly discuss the importance of farming to South Africa and its people. (2 x 2) (4)

(d) Even though the actual output of farming in South Africa is increasing, its percentage contribution to the South African GDP is decreasing. Explain why this is so. (2 x 2) (4)

3.3.3 Water is considered to be one of South Africa's critical resources. Even though it is a renewable resource South Africa could run out of fresh water soon.

(a) What is a *resource*? (1 x 2) (2)

(b) Why is water referred to as a renewable resource? (1 x 2) (2)

(c) Explain why water is considered to be a critical resource in South Africa. (2 x 2) (4)

(d) The demand for water for domestic and industrial purposes is predicted to increase drastically in the near future. Give TWO possible reasons for this increase in demand. (2 x 2) (4)

(e) With reference to FIGURE 3.2, identify the type of electricity that is generated by water. (1 x 2) (2)

(f) Why do you think the type of electricity mentioned in QUESTION 3.3.3(e) is not more widely generated in South Africa? (1 x 2) (2)

(g) Explain how proper water management can result in a more sustainable use of South Africa's scarce (limited) water supplies. (3 x 2) (6)

[100]

QUESTION 4

4.1 Indicate whether the following statements are TRUE or FALSE. Choose the answer and write only 'true' or 'false' next to the question number (4.1.1 – 4.1.10) in the ANSWER BOOK.

4.1.1 A rural settlement is a settlement associated with the countryside where most people are involved with primary activities.

4.1.2 A dry-point settlement is a settlement that is located close to a major source of water.

4.1.3 Urban sprawl is the vertical expansion of cities.

4.1.4 A green belt is an area of natural vegetation that is protected inside and around the city.

4.1.5 The movement of people from rural to urban areas contributes to urbanisation.

4.1.6 A break-of-bulk point is where there is a change in the mode of transport.

4.1.7 Footloose industries are industries of which the location is not influenced strongly by access to materials or markets.

4.1.8 Intensive farming occurs when very large areas of land is used for the farming activities.

4.1.9 Centralisation of industries occurs when heavy industries are located in the CBD of a city.

4.1.10 Inter-basin transfers is when water is transferred through a series of canals, tunnels and dams from one drainage basin to another.

(10 x 2) (20)

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4.2 Refer to FIGURE 4.2 showing the cycle of rural decay. Various strategies have been introduced to manage dwindling rural settlements sustainably.

4.2.1 What do you understand by the term *cycle of rural decay*? (1 x 2) (2)

4.2.2 Give THREE reasons why young, active people will leave rural areas. Refer to push factors that exist in the rural areas. (3 x 2) (6)

4.2.3 What is the above-mentioned movement of people from rural areas to cities called? (1 x 2) (2)

4.2.4 What are the consequences of the above-mentioned movement of people from rural areas to cities for small rural towns? (3 x 2) (6)

4.2.5 HIV/Aids will have a major impact on rural settlements in South Africa. It is especially the women and young children who are vulnerable.

(a) Why are women in the rural areas so vulnerable and how will HIV/Aids impact on their lives? (2 x 2) (4)

(b) Discuss how HIV/Aids will impact on young children in rural communities. (2 x 2) (4)

(c) State measures that can be introduced to assist rural communities that are severely affected by HIV/Aids. (2 x 2) (4)

(d) What can be done in rural communities to slow down the rate of infection of the HIV/Aids virus? (2 x 2) (4)

4.2.6 One of the sustainably-based rural development programmes is Local Agenda 21. The concept of this programme originated at the Earth Summit hosted by Brazil in 1992. Local Agenda 21 is an action plan that helps governments to implement sustainable development.

(a) Local Agenda 21 recognises the four principles of sustainable development. Name any TWO of these four principles. (2 x 2) (4)

(b) Briefly discuss how the aims of Local Agenda 21 can be implemented to achieve sustainable development. (2 x 2) (4)

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4.3 In 1995 the South African government developed a very ambitious programme to promote economic development across the country. This initiative is called the SDI and is a joint venture between the department of trade and industry and the department of transport. The Maputo Development Corridor is one of these SDIs. Refer to the extract as well as the diagram illustrating the Maputo Development Corridor in FIGURE 4.3.

4.3.1 What does the abbreviation *SDI* stand for? (1 x 2) (2)

4.3.2 Why do you think the department of transport became involved in the SDI programmes that focus on economic development? (2 x 2) (4)

4.3.3 Why was it necessary to introduce toll plazas to finance the upgrading of the N4? (1 x 2) (2)

4.3.4 Discuss how the PWV industrial region in Gauteng was advantaged by the establishment of the Maputo Development Corridor. (2 x 2) (4)

4.3.5 Identify any TWO of the main urban nodes along the Maputo Development Corridor. For EACH of the mentioned urban nodes state its main contribution to the economy. (4 x 2) (8)

4.3.6 The establishment of the Maputo Development Corridor will have a positive influence on South Africa's balance of trade. Explain why this is the case. (2 x 2) (4)

4.4 Industries make a great contribution to South Africa's GDP. South Africa's industries are centralised in four core industrial areas.

4.4.1 Name any ONE of South Africa's four core industrial areas. (1 x 2) (2)

4.4.2 What is meant when it is said that South Africa’s industries are centralised? (1 x 2) (2)

4.4.3 Discuss any TWO factors that promote industrial development in South Africa. (2 x 2) (4)

4.4.4 Discuss any TWO factors that are restricting industrial development in South Africa currently. (2 x 2) (4)

4.4.5 Of what importance is industrial growth to the development of South Africa’s economy? (2 x 2) (4)

[100]

GRAND TOTAL: 300

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ANNEXURE

Tropical cyclone Favio causing multiple disasters in Mozambique!

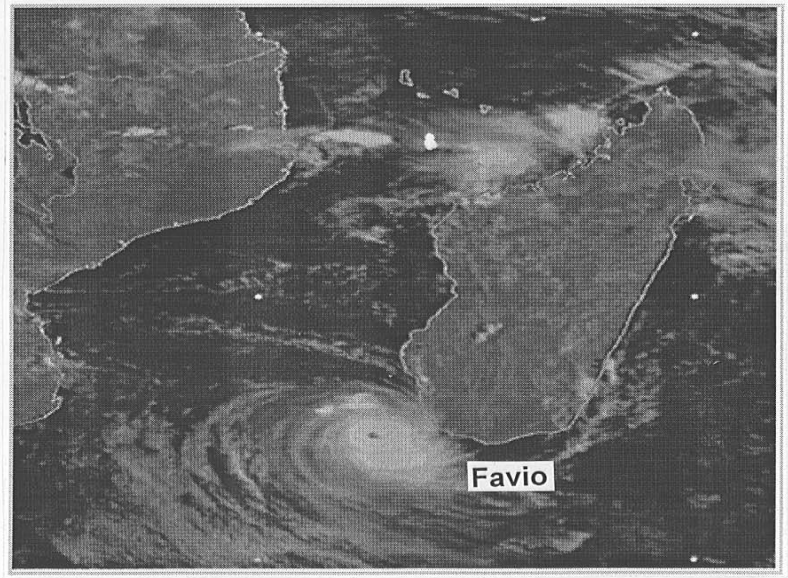
Track and Impact

Tropical cyclone Favio developed in the western Indian Ocean about 1 200 km from Madagascar on 14 February 2007. It gradually moved southwest, passing well off-shore of Reunion and Mauritius. By 20 February, it was just off the southern shore of Madagascar as a well-formed, mature storm.
While the storm system had largely skirted around populated areas to that point, forecasters were concerned about its behaviour when it entered the warmer water of the Mozambique Channel.
The storm was turning around the southern end of Madagascar, heading for the Mozambique Channel. Favio had a recognisable shape with spiral arms showing its clockwise rotation. The spiral arms were well-defined and tightly wound. The distinct centre of the storm was only partially filled with clouds. These were all signs of a well-developed tropical cyclone.
Tropical cyclone Favio struck the southern part of Mozambique on Thursday 22 February 2007 bringing in large-scale devastation and suffering to tens of thousands of residents.

Current Conditions and Expected Developments – 23 February 2007

Favio has now transformed from being a tropical cyclone to a tropical depression. This is always the case when a tropical cylcone moves over the land. Favio is now an overland depression. The maximum wind speed is about 60 km/h and is being disorganised gradually.

Satellite Image – 20 February 2007



Satellite Image – 22 February 2007

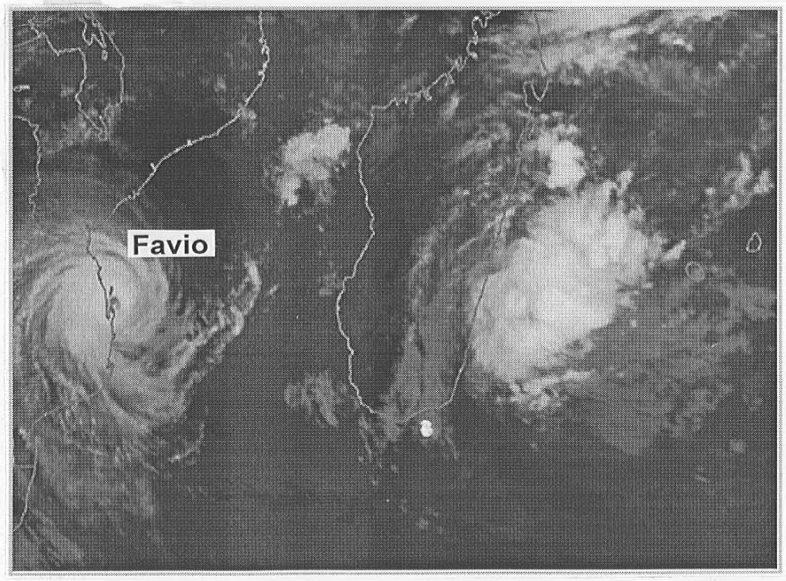


FIGURE 1.2

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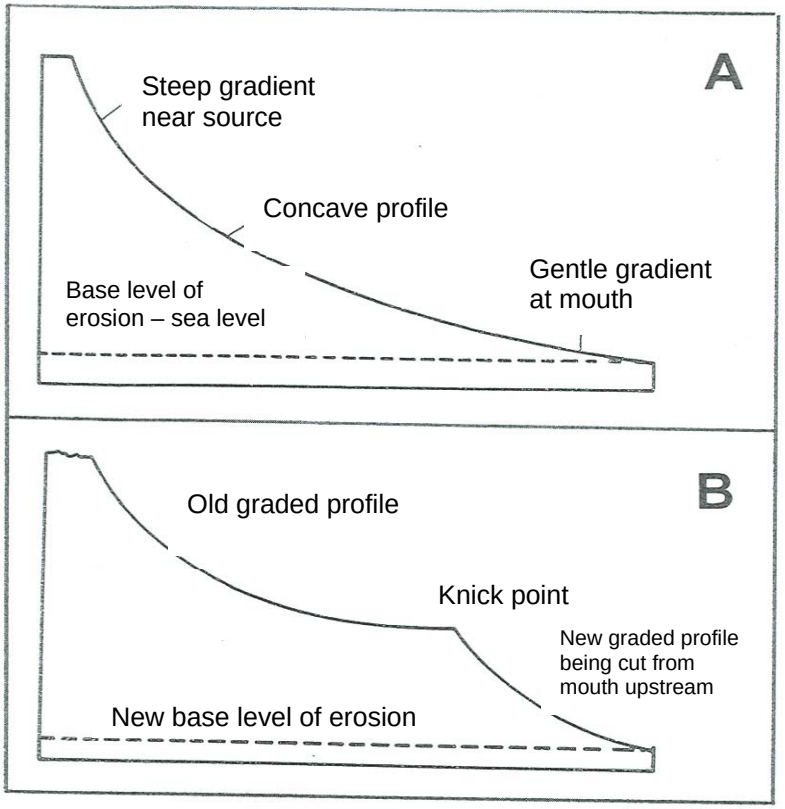


FIGURE 1.3

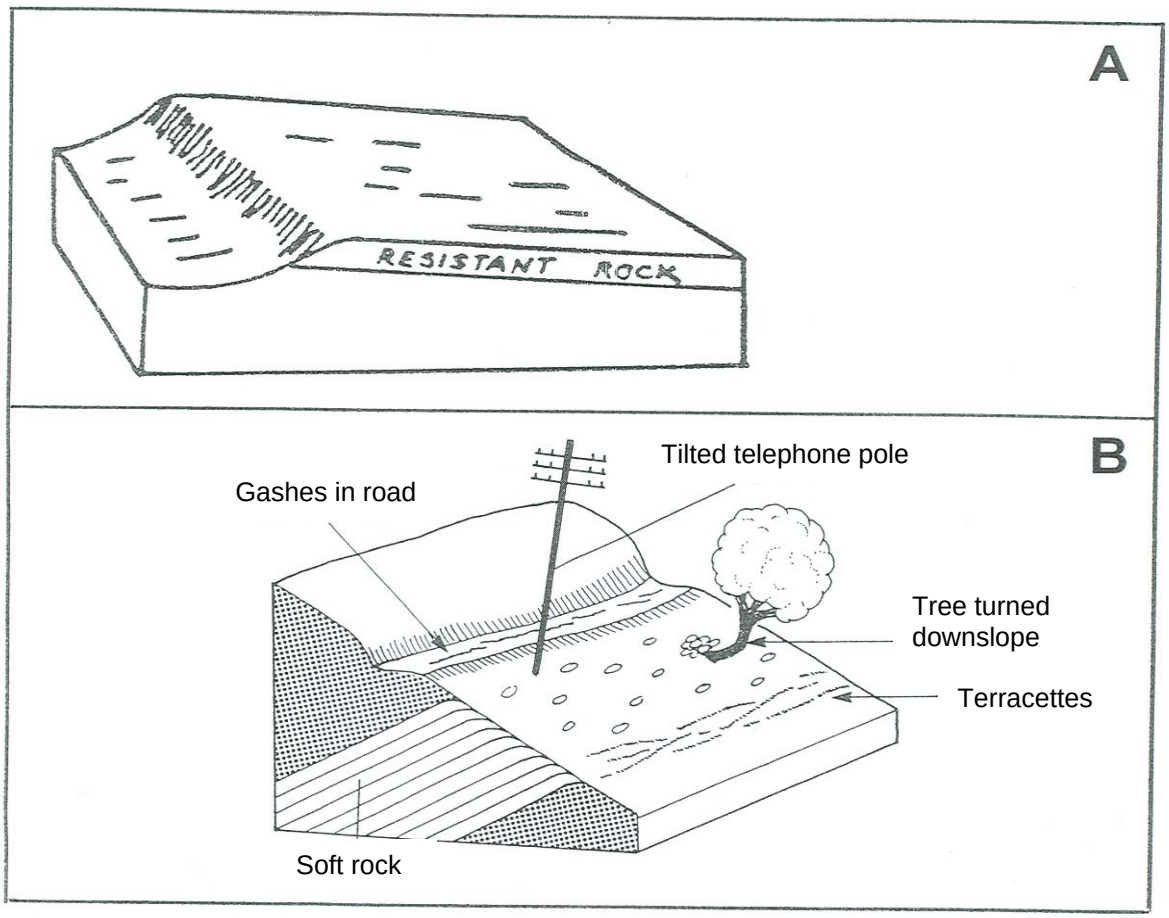


FIGURE 1.4

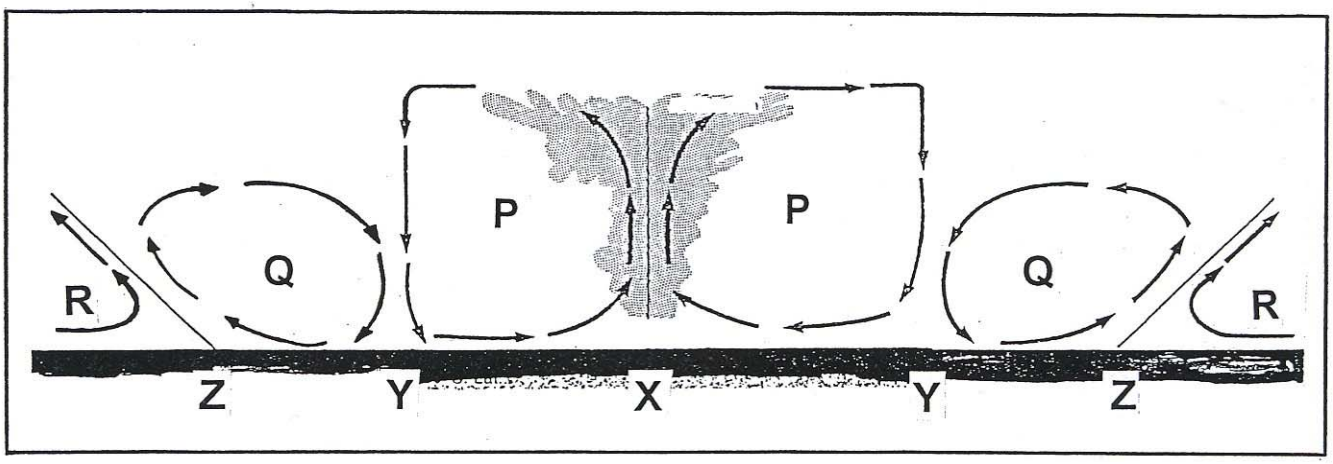


FIGURE 2.2

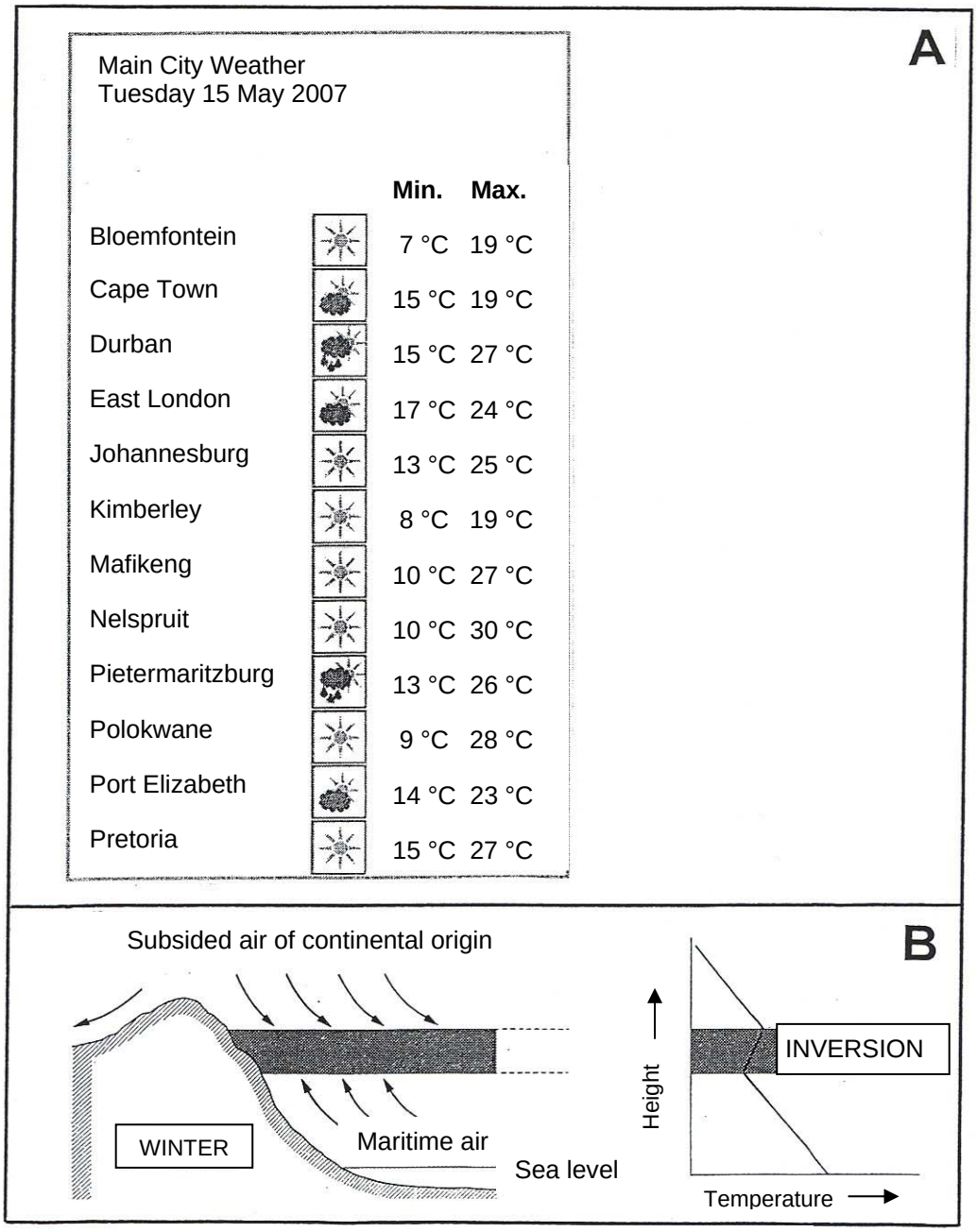


FIGURE 2.3

100 000 lives at risk

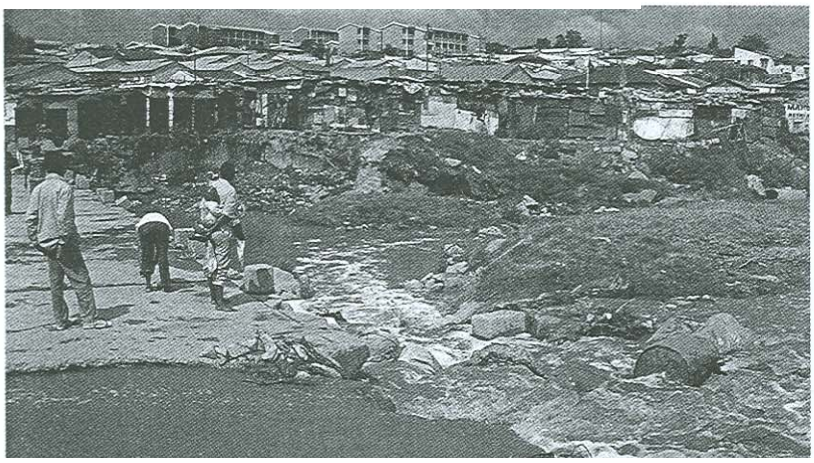
In the summer rainfall regions the lives of some 100 000 people are at risk. They are in danger because they live in flood-prone areas. One of these areas, with 6 000 residents, is an informal settlement below the banks of the Jukskei River within Alexandra Township, north of Johannesburg.

Residents have been warned many times about the dangers of building along the banks of the Jukskei, but they stay because there is nowhere else for them to go. Hundreds of shacks on the river banks have been washed away in the past yet residents remain undaunted and return to build.

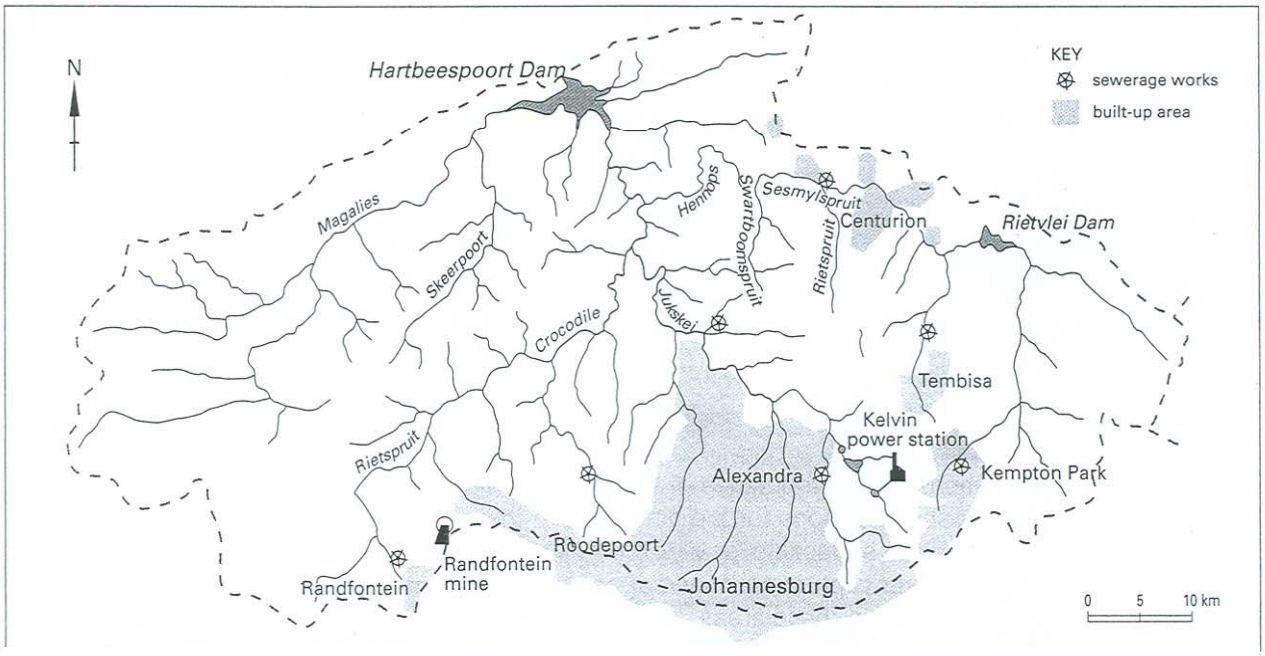
This FIGURE shows the Jukskei River and other rivers that drain into the Hartbeespoort Dam.

The Jukskei River carries heavily polluted water into the dam. The sources of this pollution are from sewerage, domestic waste and detergents reaching the river from Alexandra Township, as well as effluent from mining areas and idustrial waste from the Kelvin power station and the industrial areas of Johannesburg. There are also many sewerage works along the rivers that flow into the dam.

Heavy rains in 1999, 2000 and 2001 have caused loss of life and homes along the Jukskei River in Alexandra. Building on a flood plain, so close to the river, is hazardous. As the Jukskei River rises north of Alexandra, rainwater does not infiltrate due to the impermeable artificial surfaces of the built-up area. Overland flow occurs and as a result there is a short lag time and high flood peak in the rivers as it flows through the township, which contributes to the heavy flooding experienced.



Living on the edge – Alexandra residents exist dangerously on the banks of the Jukskei River



Rivers flowing into the Hartbeespoort Dam

FIGURE 2.4 [Source: *Focus on Geography Grade 12*, 2001]

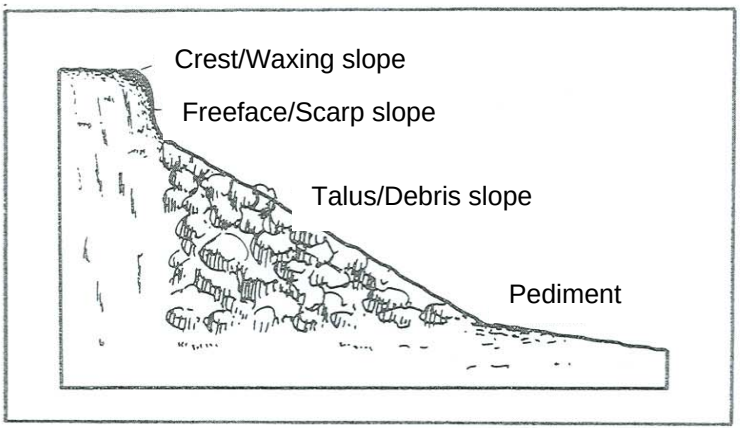


FIGURE 2.5

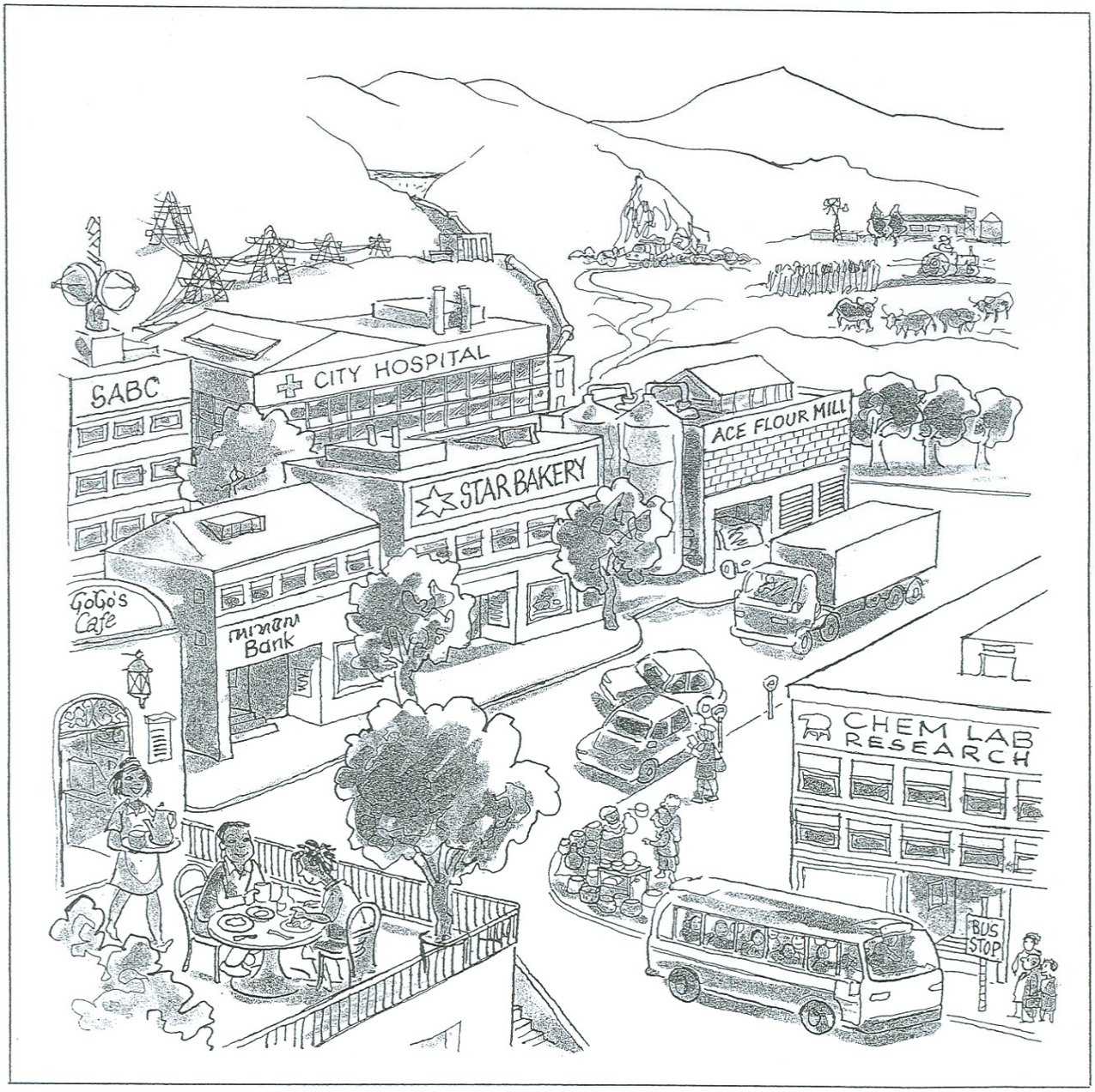


FIGURE 3.2

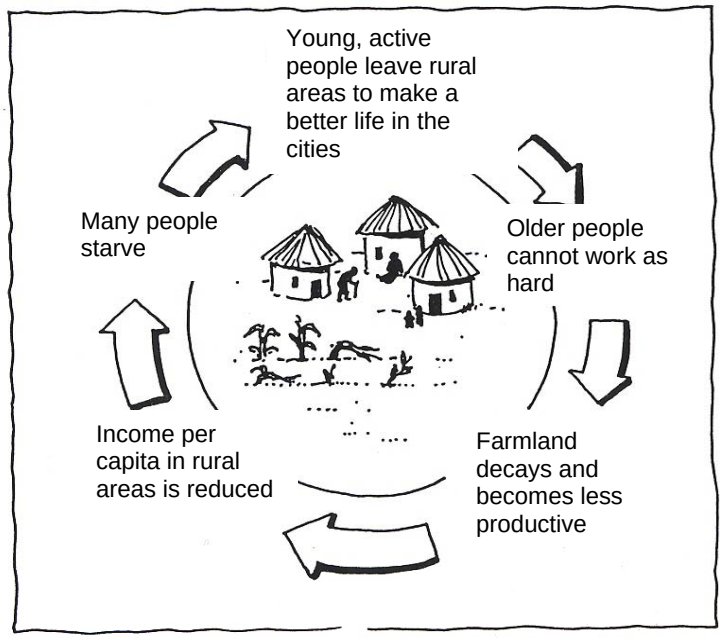


FIGURE 4.2

The Maputo Development Corridor

The Maputo Development Corridor runs from Witbank in Mpumalanga, through Nelspruit, to the capital of Mozambique, Maputo. The transport route offers the shortest link from Gauteng, the industrial heart of South Africa, to an export harbour. One hundred and thirty investment opportunities have been identified for infrastructure provision and for the agriculture, mining, energy, chemicals and manufacturing sectors.
The main infrastructure projects are the N4 Maputo Corridor toll road, costing R1,5 billion, the upgrading of the railway line from Ressano Garcia to Maputo, the upgrading of the Maputo port (including the dredging of the harbour to make it deeper) and the upgrading of telecommunications.

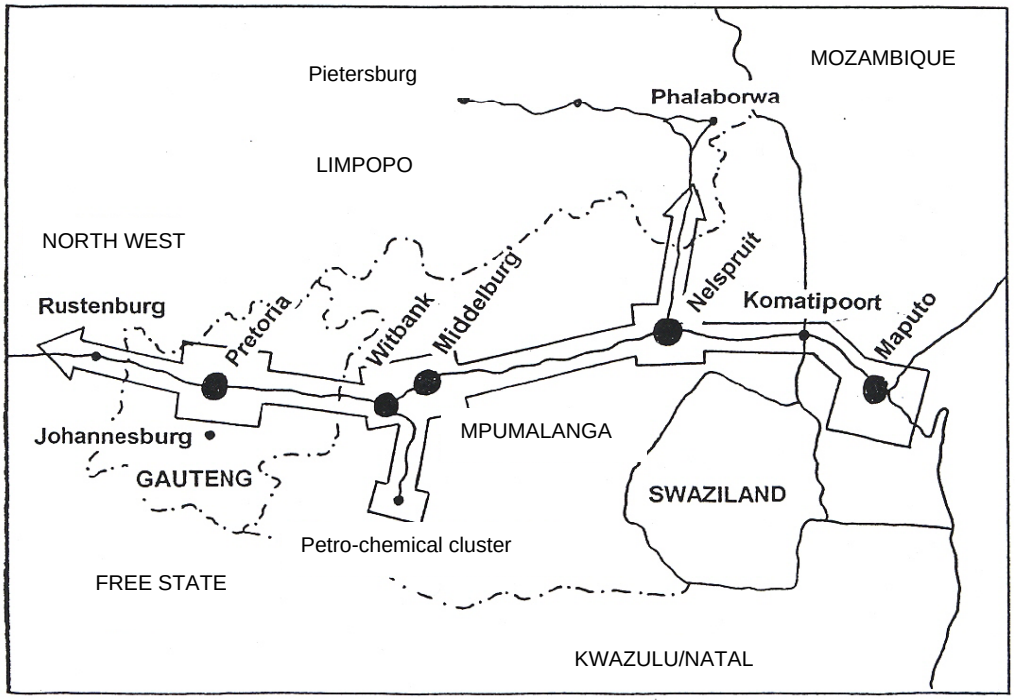


FIGURE 4.3

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