

# Revision and Assessment

## Key issues

- Physical resources are classified as non-renewable and renewable.
- Resources range from exhaustible to renewable.
- When a resource becomes scarce the price or cost of the resource rises.
- The elements making up the “triple bottom line” concept provide a useful understanding of sustainable development.
- Soil is one of the most important resources in South Africa and is similar to water and air in how precious it is.
- There are five main factors responsible for soil formation.
- South Africa relies heavily on coal as an energy source because it is an abundant resource, it provides cheap electricity, and many coal-fired power stations have not yet reached the end of their operational life. The consequences of continuing to use coal are: it will become unaffordable in two generations’ time, it pollutes the air and less resources are being put into developing alternative energy sources.
- There are advantages and disadvantages to using conventional thermal-powered sources for energy generation.
- South Africa has a lot of potential to use alternative energy forms based on non-renewable sources.

## Assessment

**Time:** 1 ½ hours **Total:** 180 marks

- 1 The Democratic Republic of Congo (DRC) has the largest tropical rainforests in Africa, covering over 100 million hectares. However, the future of the DRC’s forests is in question due to a population growth rate exceeding 3%. The demand for fuelwood exceeds availability. Plantation agriculture and commercial farming are also on the increase. Both of these threaten the DRC’s extensive forests. Refer to Figure 4.66 when you answer the questions below.

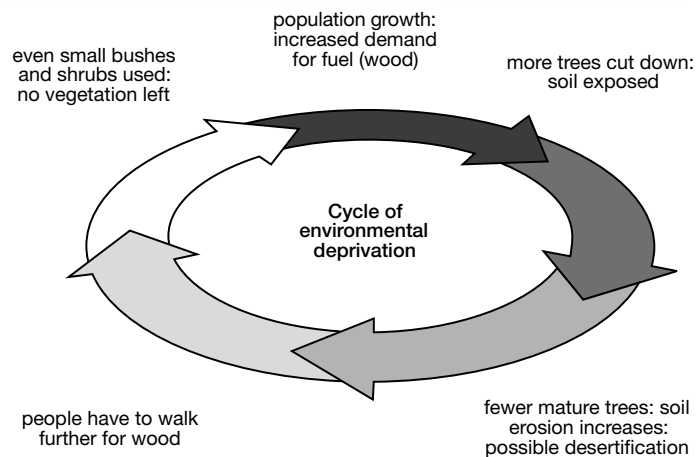


Figure 4.66 Cycle of environmental deprivation

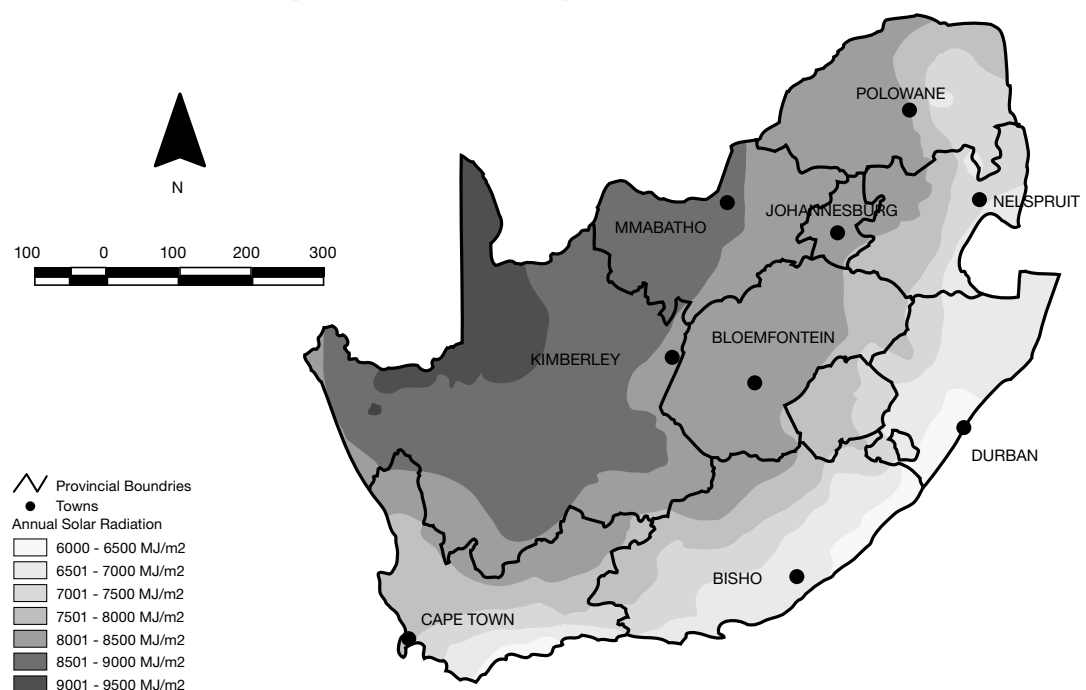
- 1.1 List two natural resources found in the rainforests in the DRC. (2)
- 1.2 Explain why the rainforests of the DRC are under threat. (3 × 2 = 6)
- 1.3 Explain why there is such a big demand for fuelwood in this country. (2 × 2 = 4)
- 1.4 Describe the impact that increasing demand for fuelwood has in this area of the DRC. (3 × 2 = 6)
- 1.5 Why are agriculture and commercial farming threatening the sustainability of the rainforests? (2 × 2 = 4)
- 1.6 It can be argued that fuelwood is no longer a renewable resource. Explain why. (2)

- 2 The photograph in Figure 4.67 shows an erosion gulley in the Eastern Cape. The depth of the gulley is about 7,5 m.
- 2.1 Describe two physical factors that cause soil erosion. (2 × 2 = 4)
- 2.2 Examine the photograph carefully. What factors are likely to have caused gully erosion at this site? (3 × 2 = 6)
- 2.3 What steps could be taken to manage the problem of gully erosion? (5 × 2 = 10)



Figure 4.67 Zeek gulley, in the Eastern Cape

- 3 Use the map below to answer the questions that follow.



- 3.1 What factors would make a good location for the development of a solar power park? (3 × 2 = 6)
- 3.2 Which area in South Africa receives the highest annual solar radiation? (2)
- 3.3 Why has Kimberley been chosen as a future site for a solar park? (2 × 2 = 4)
- 3.4 Describe two areas in South Africa that have lower potential than Kimberley for establishing a solar park. Briefly explain why this is the case. (3 × 2 = 6)
- 4 Daily energy demand in South Africa varies seasonally and hourly. Use the graph in Figure 4.68 to answer the questions that follow.

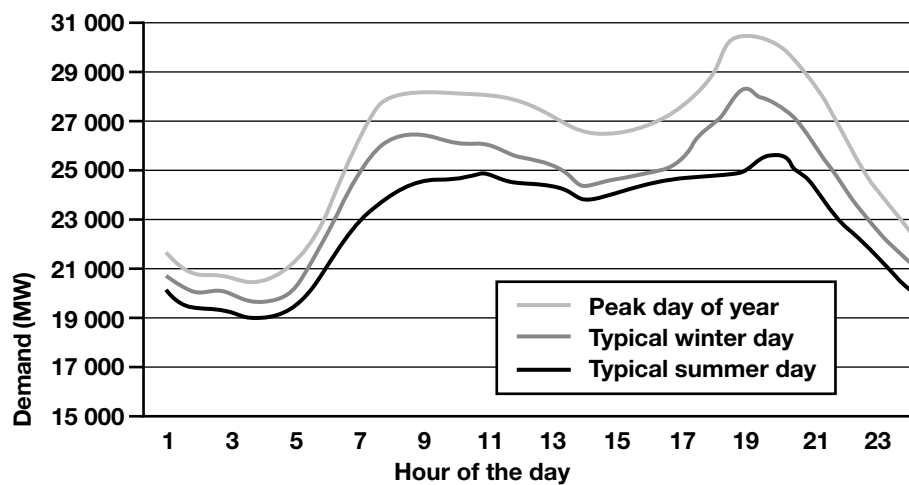


Figure 4.68 Electricity demand during a typical 24-hour period for weekdays in South Africa

- 4.1 Why does electricity demand peak at 19H00 hours? (2 × 2 = 4)
- 4.2 Why is demand during winter higher than in summer? (2)
- 4.3 What does “peak day of the year” mean? (2)
- 4.4 Describe at least three ways in which the peak demands could be reduced across the country. (3 × 2 = 6)

[Total: 80 marks]