

UNIT 3

Health, social and environmental responsibility: Environmental health issues

New words

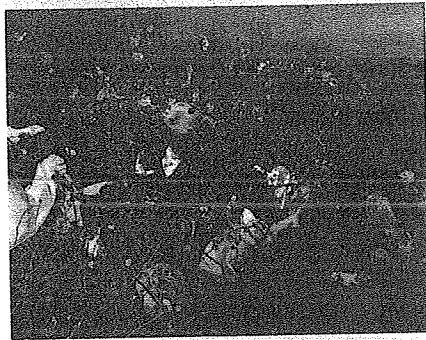
ecosystem: a system made up of the community of all living organisms and their environment

extinct: no longer living

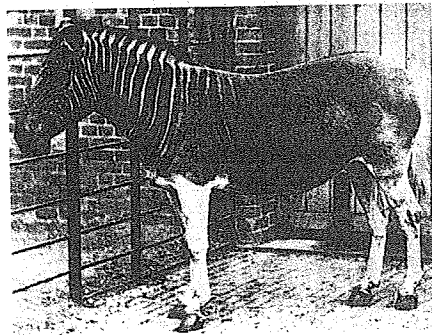
3.1 Environmental health issues

Earth is the perfect planet for human life: the air has oxygen for us to breathe; there is water for us to drink and plants that we can eat. We can fish from the oceans and eat many kinds of animals that live on earth. There are minerals we can mine, and from these we can make things that make our lives easier, such as steel and silicon.

We rely on clean air, water, plants, minerals and other resources, but we do not always use them wisely. Humans have been abusing the earth's resources and we are starting to experience severe consequences for our actions. For example, it is useful to make plastic out of oil, but plastic pollution has become a serious problem. Pollution makes the earth dirty and dangerous for everything and everyone that lives on it. When plastic bags are thrown away, they often blow into rivers and dams, which affects the fragile ecosystem. When plastic is burnt, it gives off poisonous gases.



Plastic bags blows across the land and get caught in plants.



The only photo taken of a quagga in captivity.

The abuse of resources also affects animals. Already, several species of animals have become **extinct** because of human actions. For example, the Tasmanian tiger was hunted to extinction, and 60 years ago, the last of its species was locked out of its cage in a Tasmanian zoo and froze to death. In South Africa, the quagga was hunted into extinction by people who wanted them for their meat and hide.

South Africa has a National Environmental Management: Biodiversity Act No. 10 of 2004. This Act ensures that indigenous use of biological resources is protected. Modern pharmaceutical companies have, in the past, benefitted from indigenous knowledge and given no acknowledgement to the people who developed it. When companies exploit indigenous knowledge of our plants and animals, it is called 'biopiracy':

Activity 5

Discuss the piracy of indigenous knowledge

- 1 What would happen if indigenous knowledge was not protected?
- 2 Explain in your own words what 'biopiracy' is.
- 3 Do you think that pharmaceutical companies should be allowed to benefit from indigenous knowledge systems at all? If so, should conditions be put in place for them to benefit from indigenous knowledge systems?

Activity 6

Find out about environmental issues

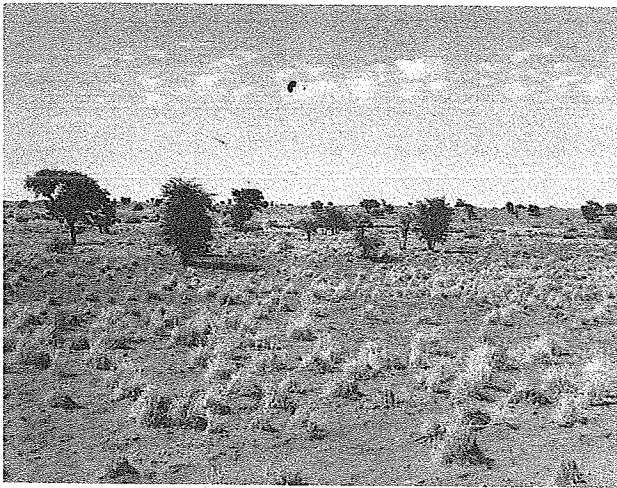
In pairs, find out more about environmental issues. Choose one of the following to research:

- Rain forests being destroyed and deserts expanding
- The greenhouse effect and global warming
- Unsustainable fishing practices
- Unsustainable energy sources
- Inefficient waste management
- Abuse of water resources and wetland destruction.

New word

unsustainable:
cannot continue or be continued for a long time

Find out exactly what the problem is, how serious it is and how we can change our behaviour. Then put the information together and deliver a two-minute presentation to the class, including pictures, if possible.



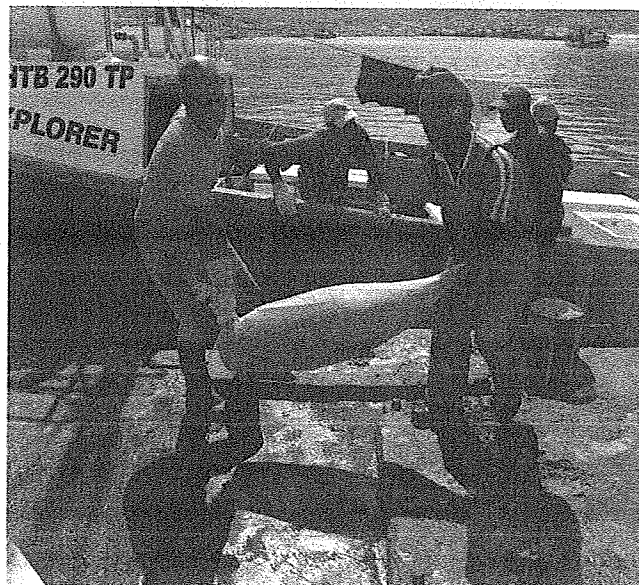
The Kalahari desert expands due to global warming.



Coal mining depletes natural non-renewable resources.



Muellebins are used to collect household waste.



Unsustainable fishing practices result in the extinction of some fish species.

abridged: shortened

CASE STUDY The environmental risk of using cyanide in gold mining

Heap leaching is a process used to recover gold from ore. A dilution of cyanide is trickled onto enormous piles of ore. The gold is eventually dissolved and collects at the bottom. Cyanide is dangerous to humans because when it enters a person's bloodstream, it disrupts the body's ability to use oxygen properly, affecting the heart and the brain.

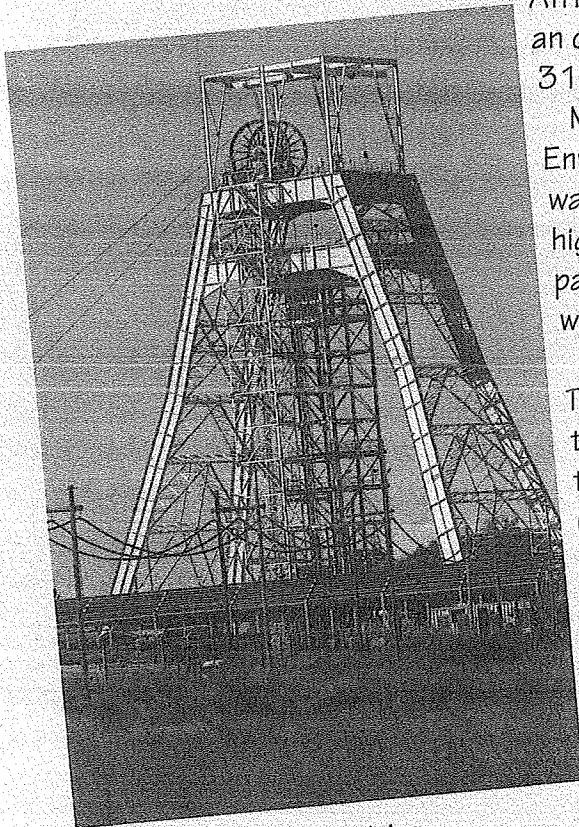
Mpumalanga-based Transvaal Gold Mining Estates (TGME), a subsidiary of South African gold mining company Simmer & Jack, had an overspill at their Elandsdrift heap leach pad on 31 January, following heavy rains.

Marina Caird, a representative of the Wildlife and Environmental Society of South Africa (WESSA) warned that the site was not only situated in a high rainfall area, but that part of the heap leach pad was below the one-in-a-100-year floodline, which contravenes the National Water Act.

Caird said both WESSA and the Mpumalanga Tourism and Parks Agency (MTPA) had raised their concerns about safety at the site, but that the Department of Minerals and Energy (DME) and the Department of Water Affairs and Forestry had granted the mining company authorisation to continue mining.

"It is worrying, especially in light of the fact that the very high concentrations of cyanide in the heap and ponds could enter the river system and be quickly and widely dispersed. The stability of the heap in high rainfall conditions is a cause for deep concern," Caird added.

Source: www.news24.com/



Cyanide is used in gold mining.

Activity 7 Find out about environmental sustainability

- 1 List at least four reasons why we must protect the Earth.
- 2 Explain briefly why plastic is harmful to the environment.
- 3 Answer the following questions based on the case study:
 - 3.1 Cyanide is sometimes used in gold mining. Is cyanide good or bad for people? Give a reason for your answer.
 - 3.2 The process to recover gold from ore using cyanide is called _____
 - 3.3 Why do heavy rainfalls pose a threat to the people who live close to the mine?
 - 3.4 Do you think that gold mining should be stopped because of the environmental threat of spilling cyanide into surrounding rivers? Give a reason for your answer.