



Sustainable
development

PACK 2

Issues in
sustainable
development



About this pack

Objectives

When you have completed this pack you will have examined some key issues in sustainable development and their impact on the land-based sector.

This pack will help you to:

- describe human impact in the environment
- describe the 'eco-footprint' of land-based businesses
- examine the economic and social case for sustainable development

This pack is relevant to the National Diploma unit **Sustainable development**, and in particular to:

- Outcome 1: Be able to explain the principles of sustainable development
- Outcome 2: Understand the importance of resources and environmental management sustainable development
- Outcome 3: Know how economics and society contribute to sustainable development

It is also relevant to the key skill ICT and in particular ICT2.1.

Links to other packs

This is one in a series of learning packs covering environment law, sustainable development and managing waste. The other packs in the series cover:

- Overview of environment law
- Main areas of environment law
- Principles of sustainable development
- Issues in sustainable development
- Towards a sustainable future
- Managing waste
- Waste legislation
- Waste in agriculture



Introduction

Sustainable development is a relatively new term. However, the problem of sustainable development is not new – it has its roots in the growing impact that human beings have had on the planet. We affect:

- the air – we need air not just to breathe but also to run much of our equipment; we influence the quality of air through pollution and greenhouse gas emissions
- water – we consume vast quantities of water, and we pollute both fresh and salt water systems
- soil – we use the soil in producing food; agriculture, construction and industry also affect the quality of soil
- rock – we extract oil, gas and coal as fuel, and use rock and minerals for construction and industry
- other living organisms – we exploit plants and animals for food; we also compete with them for space and resources.

As the human population and our use of resources has grown, so our impact on the planet has increased.



Activity

Jot down three ways in which people have had an increasing impact on the environment over time:





Feedback

These are just some of the factors you may have mentioned:

- Deforestation – the UK was largely covered by forest when people first arrived. However, the growth of agriculture and the use of wood for fuel and construction led to huge changes. Today's landscape is largely man-made. Across the world the process continues and human activity continues to reduce forests, to damage habitats and reduce biodiversity.
- The industrial revolution – during the nineteenth century the agricultural and industrial revolutions led to further massive changes. People moved from the countryside into the industrial towns in search of work. This created a new set of social and health problems. And the growing use of coal led to pollution problems for air, land and water.
- Population growth – the human population has doubled since 1960. While the rate of growth has halved since the 1960s, the UN estimates that the world's population is still increasing by 75 million every year. This increases the pressure on natural resources and adds to pollution and greenhouse gas emissions. A key concept here is **Carrying capacity** – the balance between population and resources.
- The development of transport – the growth of first rail, then road and now air transport have also had a huge impact on the environment. In particular, road and air transport represent important contributors to global warming.
- Consumerism – the growing demand for consumer products places further pressure on resources. Production calls for energy and natural resources: distribution adds to the impact of transport. The use of products often increases energy use – for example electricity to power household electronics. And both packaging and disposal of products increase the waste we produce.



We have choices

The problems we face can seem daunting – and indeed, if we continue as we have done, there is little doubt that we will damage the planet permanently.

However, we do have a choice between continued destruction of the environment, and a more sustainable future.



Activity

The following table lists a number of ways in which people have a negative impact on the environment. For each one, suggest an alternative that can reduce or eliminate the impact.

Using and running out of – oil, gas and coal for fuel	
Driving to work	
Disposing of packaging	
Using the land in ways that endanger species	
Wasting energy in the home	



Feedback

Here are some possible alternatives:

Using and running out of oil, gas and coal for fuel	Using renewable energy sources such as wind power
Driving to work	Using public transport; cycling; car sharing
Disposing of packaging	Using recyclable packaging; reducing use of plastic bags
Using the land in ways that endanger species	Creating nature reserves; using environmentally friendly farming methods
Wasting energy in the home	Insulating homes to reduce energy loss; using energy-saving light bulbs; switching off computers, TVs, etc. when not in use

The impact of the land-based industries

The land-based industries have a crucial role to play in sustainable development. The need to provide food and other resources for a growing population has meant that, on the one hand, they can add to the problem:

- Intensive land use for crop production, livestock and forestry can damage soils and reduce biodiversity.
- Use of pesticides and fertilisers can damage ecosystems – for example, reducing food for wild birds or polluting water courses.
- Destruction of natural habitats such as hedgerows, ponds and woodlands reduces the space available for nature.
- Disposal of waste – batteries, equipment, straw, packaging, etc. – can all increase pollution.

These problems are already great in the UK. In other parts of the world there are similar – and sometimes greater – problems. For example, some of the world's greatest forests are under threat from logging and agricultural expansion. Elsewhere, overgrazing is adding to the spread of deserts.



At the same time the land-based industries can act as guardians of the natural environment. For example:

- It is possible to farm in sustainable ways, by reducing inputs and conserving or increasing the habitats on the farm.
- In similar ways, sustainable forestry can encourage species diversity can create refuges for wildlife.

The land-based industries also offer employment in rural areas and can attract tourism. In addition, activities such as supporting biodiversity, increasing access and maintaining footpaths can have an impact on local people's quality of life.



Activity

The impact any activity has on the environment is sometimes called its 'eco-footprint'. Choose a business you know – a farm, forestry business, small holding, fishery or the college estate – and make notes about its eco-footprint. In particular:

- How do the business's activities damage or protect the environment?
- How do its activities impact on the local economy?
- How do its activities affect the quality of life of local people?



The economic and social case for sustainable development

At first sight it may seem that sustainable development can only be achieved at a cost to economic and social development. However, the two things are not necessarily in conflict.

In particular, sustainable development can offer new economic opportunities for land-based businesses. For example:

- There is a potential to diversify into waste recycling such as composting, waste transport or transfer. See pack **EL8 Waste in agriculture**.
- There may be scope to reclaim land after industrial activity.
- Land owners can consider moving into energy production – for example energy from waste, biofuels or even wind energy.
- Countryside stewardship schemes offer real opportunities to farm in ways that benefit the environment and the local population while maintaining farm incomes.

And many existing land-based activities – such as farm holidays, riding schools and other outdoor activities – offer both social and economic benefits while sitting very well with the aims of sustainable development.

In the wider economy, companies are making similar choices. For example, the energy supplier npower has launched a green electricity supply from wind power at the same tariff as traditional electricity.



Activity

Use the internet to find an example of a company that is actively trying to support sustainable development.



Review quiz

- 1 The UN estimates that the world population is growing at a rate of:
 - a) 15 million a year.
 - b) 50 million a year.
 - c) 75 million a year.
 - d) 100 million a year.
- 2 List three ways in which the land-based industries may add to the problem:
 - a)
 - b)
 - c)
- 3 List three ways in which the land-based industries can help with sustainable development:
 - a)
 - b)
 - c)
- 4 Suggest one way in which sustainable development can offer new economic opportunities for land-based businesses:



Answers to review quiz

- 1 c) 75 million
- 2 You may have suggested: intensive crop production; pesticide use; nitrate enrichment of water supplies; destruction of habitats; waste disposal; etc.
- 3 You may have suggested: reducing inputs; reducing pesticides; creating or managing habitats; maintaining footpaths and public access; etc.
- 4 See page 8 for some examples.

Further information and weblinks

If you refer to information in this pack, please quote the pack number, title, date and LBCNC in your references.

Try looking up some terms related to sustainable development on the internet encyclopedia 'wikipedia' at:

<http://en.wikipedia.org>

For example:

http://en.wikipedia.org/wiki/Carrying_capacity

<http://en.wikipedia.org/wiki/Eco-footprint>

<http://en.wikipedia.org/wiki/Biodiversity>

Our common future:

<http://www.oup.com/uk/catalogue/?ci=9780192820808>

Agenda 21:

<http://www.un.org/esa/sustdev/documents/agenda21/index.htm>



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