

Unit 11: Understanding Land Use and Environmental Issues

Unit code:	F/600/9438
QCF Level 3:	BTEC National
Credit value:	10
Guided learning hours:	60

● Aim and purpose

This unit aims to introduce learners to the skills and knowledge needed to understand in land use and the related organisations and how these can be applied in practice. It is designed for learners in centre-based settings looking to progress into the sector or onto further/higher education.

● Unit introduction

Land use and management in the UK is a subject which interests many people and is a source of controversy. The need to combat global warming has resulted in both the UK government and international bodies focusing on increasing the use of renewable and sustainable energy production methods. These methods affect the land and environment around them in ways that are often controversial.

This unit covers the proportion of land involved in the major UK land uses and their effect on the environment, both in an historical and current context. It then considers specific land uses and their impact on the UK countryside.

Rural policy, organisations and legislation have a major effect on land use in the UK. Learners will study UK and international policy, a wide range of statutory and non-governmental organisations and associated legislation.

Learners will study the wide-ranging impact of industry and agriculture on the management of the natural environment in the UK, including often controversial government plans for building new houses on agricultural land.

Alternative sustainable and renewable energy sources are likely to be of increasing importance as traditional methods and current sources of energy run out. Learners will study their value in relation to their effect on the landscape which is often a source of controversy in the public arena. Legislation connected with the use of energy sources, arrangements for giving planning approval and the international agreements promoting this use are also covered.

Current levels and trends in biodiversity will be studied together with the associated legislation and the effects of land use and management on biodiversity.

● Learning outcomes

On completion of this unit a learner should:

- 1 Know land uses in the UK
- 2 Understand the effect of rural policy, organisations and legislation associated with land use in the UK
- 3 Understand the impact of industry and agriculture upon the natural environment in the UK
- 4 Understand the development of energy production and use
- 5 Understand changes in biodiversity.

Unit content

1 Know land uses in the UK

Major land uses: amount of land utilised by agriculture, forestry, military, transport, energy production, waste management, protected areas, urban development, aggregates, recreation, water resource management, open country

Influences on land use: organisations; key legislation

2 Understand the effect of rural policy, organisations and legislation associated with land use in the UK

Policy: UK policy eg Planning, Rural Development Programme, international policy eg EU Common Agricultural Policy (CAP)

Statutory organisations: local and regional government authorities (county/city councils, unitary authorities); conservation advisory bodies eg Natural England (EN), Scottish Natural Heritage (SNH), Countryside Council for Wales (CCW), Environmental and Heritage Service Northern Ireland (EHSNI), Forestry Commission, Environment Agency/SEPA, English Heritage, Defence Estates, National Parks Authorities; role (purpose, function, major responsibilities); impact on UK countryside

Non-governmental organisations: eg National Trust, Royal Society for the Protection of Birds (RSPB), Wildlife Trusts, Church, Farming and Wildlife Advisory Group (FWAG), National Farmers Union (NFU), Country Land and Business Association (CLA), the Game Conservancy Trust (GCT), Campaign to Protect Rural England (CPRE); role (purpose, function, major responsibilities); impact on UK countryside

Major current land use legislation: eg National Parks and Access to the Countryside Act 1949, Countryside Act 1968, Wildlife and Countryside Act 1981, Countryside and Rights of Way Act 2000, Environment Protection Act 1990, Clean Air Act 1956/1968, Agriculture Act 1947, Water Framework Directive 2000 plus subsequent amendments/relevant legislation; impact on UK countryside; date of implementation; key elements; links to other legislation

3 Understand the impact of industry and agriculture upon the natural environment in the UK

Specific land uses and their impact on the UK countryside: agriculture (historical development overview eg Enclosures Act, 'Dig for Victory'), post-1945 changes driven by Common Agricultural Policy (CAP), production-led intensification, main UK crop and livestock types (location and areas of main crops, numbers of main livestock), comparison of intensive and extensive farming systems, reforms of CAP subsidies, agri-environment schemes, future trends eg organic 'revolution', Genetic Modification (GM), environmental stewardship; forestry (historical development overview, need for self-sufficiency), development of Forestry Commission, current relevant legislation, main crop types (distribution, areas, main cropping regimes), multi-use plantations (recreation, conservation, tourism); urban development and transport eg spread of suburbia, 'England and the Octopus', socio-economic need for more housing, transport policy, new towns, green belts; mining, tourism, recreational use

4 Understand the development of energy production and use

Energy production and use: conventional fossil fuel energy sources (oil, natural gas, coal); nuclear power; sustainable/renewable energy sources (solar, wind, hydropower, geothermal, tidal, wave, biomass, recycling); industrial and public consumption; natural reserves; import of energy and fuels; carbon management; public perception; reasons for use; limits of use; impact of use; development of technology and efficiency; relevant current policies and legislation eg Energy Act 2004, Renewable Energy Bill, EU Biofuels Directive; Directive 2009/28/EC of the European Parliament, Kyoto Protocol 2005, United Nations Framework Convention on Climate Change, conventions and agreements eg renewable energy targets

UK planning system: key principles of eg planning application, permission, consent, control; current relevant legislation eg Town and Country Planning Act 1947, Planning and Compulsory Purchase Act 2004; Local Development Frameworks/Schemes, Regional Spatial Strategies

Planning policy guidance: Planning policy guidance/statements eg PPS9

Environmental Impact Assessment (EIA): EU Strategic Environmental Assessment Directive (2001) (UK response, role in planning)

5 Understand changes in biodiversity

Biodiversity: current levels of biodiversity in major world biomes including main biota eg savanna, taiga; current levels of UK habitat biodiversity including main biota eg ancient woodland, sand dune; alien species eg American mink, Japanese knotweed; species decline due to climate change and habitat loss eg natural, human induced and species loss (extinction, competition); captive breeding; gene banks; studbooks; relevant current national, European and international legislation, treaties and agreements eg Countryside and Rights of Way Act 2000, Wildlife and Countryside Act 1981, Bern Convention (Council Directive 79/409/EEC -the Birds Directive), Council Directive 92/43/EEC (the Species and Habitats Directive), the Convention on Biological Diversity (1992), the Ramsar Convention (1971), Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES)

Assessment grading criteria

In order to pass this unit, the evidence that the learner presents for assessment needs to demonstrate that they can meet all the learning outcomes for the unit. The assessment criteria for a pass grade describe the level of achievement required to pass this unit.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P1 describe the main land uses in the UK [IE]		D1 analyse the changes experienced by a selected land use in the UK over the last 50 years
P2 outline organisations associated with land use in the UK [IE]	M1 analyse the role of a selected organisation associated with UK land use	
P3 describe legislation associated with land use in the UK [IE]		D2 evaluate the impact of a selected land use law on the UK countryside
P4 explain the aims of selected rural policies [IE]		
P5 explain the effects of selected rural policies on land management		
P6 explain how the development of selected agricultural and industrial activities have impacted on the natural environment [IE]	M2 compare how legislation and policy have influenced the environmental impact of land development in the UK	
P7 explain the development of conventional fossil fuel, nuclear and sustainable energy sources [IE]		D3 evaluate the effectiveness of UK planning policies in promoting the use of sustainable energy sources in the UK
P8 discuss the relative impacts of conventional fossil fuel, nuclear and sustainable energy sources on the natural environment [IE]		D4 analyse the likely relative impacts of conventional fossil fuel, nuclear and sustainable energy sources on the UK natural environment in the next 10 years.

Assessment and grading criteria		
To achieve a pass grade the evidence must show that the learner is able to:	To achieve a merit grade the evidence must show that, in addition to the pass criteria, the learner is able to:	To achieve a distinction grade the evidence must show that, in addition to the pass and merit criteria, the learner is able to:
P9 explain biodiversity changes in a selected world biome and in a selected UK habitat. [IE]	M3 discuss human impact on species biodiversity.	

PLTS: This summary references where applicable in the pass criteria, in the square brackets, the elements of the personal, learning and thinking skills. It identifies opportunities for learners to demonstrate effective application of the referenced elements of the skills.

Key	IE – independent enquirers CT – creative thinkers	RL – reflective learners TW – team workers	SM – self-managers EP – effective participators
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Essential guidance for tutors

Delivery

Delivery of this unit will involve practical assessments, written assessment, visits to suitable collections and will link to work experience placements.

Tutors delivering this unit have opportunities to use as wide a range of techniques as possible. Lectures, discussions, seminar presentations, supervised site visits, internet and/or library-based research and the use of personal and/or industrial experience would all be suitable. Delivery should stimulate, motivate, educate and enthuse learners.

Work experience placements should be monitored regularly in order to ensure the quality of the learning experience. It would be beneficial if learners and supervisors were made aware of the requirements of this unit before any work-related activities are undertaken so that naturally occurring evidence can be collected at the time. For example, learners may have the opportunity to investigate a land use development and they should ask for observation records and/or witness statements to be provided as evidence of this. Guidance on the use of observation records and witness statements is provided on the Edexcel website.

Whichever delivery methods are used, it is essential that tutors stress the importance of land use legislation and planning and the need to manage the resource using legal methods.

Tutors should consider making delivery of this unit as applied as possible using a variety of real case studies and data linked to visits to sites. It is expected that delivery will cover local, national and, for biodiversity, international situations.

Health and safety issues relating to site visits must be stressed and reinforced regularly and risk assessments must be undertaken before any practical activities.

Tutors should consider integrating the delivery, private study and assessment for this unit with other relevant units and assessment instruments learners are taking as part of their programme of study.

Outline learning plan

The outline learning plan has been included in this unit as guidance and can be used in conjunction with the programme of suggested assignments.

The outline learning plan gives **an indication of the volume of learning it would take the average learner** to achieve the learning outcomes. It is **indicative and is one way of achieving the credit value**.

Learning time should address all learning (including assessment) relevant to the learning outcomes, regardless of where, when and how the learning has taken place.

Topic and suggested assignments/activities and/assessment

Assignment 1: UK Land Use, Organisations, Policies and Legislation (P1, P2, P3, M1, D1)

Tutor introduces the assignment brief.

UK land use – amount of land allocated to the main UK land uses.

Main UK land use changes over the last 50 years and at present.

Assignment 2: UK Rural Policy, Land Use Organisations and Legislation (P4, D2)

Tutor introduces the assignment brief.

EU Common Agricultural Policy and UK Rural Development programme – what they aim to achieve and their effect on UK land use.

Topic and suggested assignments/activities and/assessment

Organisations involved with UK land use policies, UK statutory and one non-governmental organisation involved. Roles and aims of these organisations. How they influence land use decisions in the UK.

UK law relating to land use – aims and what it covers. Impact on UK land use.

Assignment 3: Impacts on the Natural Environment (P5, P6, P7, P8, M2, D3, D4)

Tutor introduces the assignment brief.

Development of agricultural and industrial activities-impact on the natural environment.

Legislation and policy – influence on the environmental impact of land use in the UK.

Sustainable energy sources in the UK – effectiveness of legislation and policies in promoting the use of sustainable energy sources.

Conventional fossil fuel, nuclear and sustainable energy sources in the UK – brief history explaining development and an analysis of their likely impact on the UK environment in the next 10 years.

Planning process for new energy schemes, Environmental Impact Assessments.

Assignment 4: Biodiversity Changes (P9, M3)

Tutor introduces the assignment brief.

Biodiversity changes – world biome and UK habitats.

Biodiversity – human impact.

Unit review.

Assessment

For P1, learners must describe the main land uses in the UK. They should present evidence that they have investigated the amount of land allocated to each of these land uses. This could take the form of a written report or learner presentation containing graphics such as charts to illustrate proportions/amounts, for example a pie chart showing the percentage of land used.

For P2, learners must discuss selected organisations associated with land use in the UK. Tutors should identify the organisations or agree them through discussion with learners. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. It is expected that, as a minimum, learners will provide evidence covering one UK statutory and one non-governmental organisation. Learners should show that they understand the specific roles of these organisations and how they influence land use decisions in the UK. Again, evidence can take the form of a written report or individual or group presentation.

For P3, learners need to describe selected legislation associated with land use in the UK. Tutors should identify the legislation or agree it through discussion with learners. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. It is expected that, as a minimum, learners will provide evidence covering three pieces of UK law relating to land use. Evidence could take the form of a written report or learner presentation.

For P4 learners need to explain the aims of selected rural policies. Tutors should identify the policies or agree them through discussion with learners. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. It is expected that, as a minimum, learners will provide evidence covering two policies relating to UK land use, one UK and one international. Evidence could take the form of a written report or learner presentation.

For P5 and P6 learners need to provide information on the development of selected agricultural and industrial activities has impacted on the natural environment in the UK. Tutors should identify the agricultural and industrial activities or agree them through discussion with learners. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. It is expected that, as a minimum, learners will provide evidence covering one agricultural and one industrial activity. Evidence could take the form of a written report or learner presentation.

For P7 and P8 learners need to provide information on the development of conventional fossil fuel, nuclear and sustainable energy sources and their impact on the natural environment in the UK. Evidence could take the form of a report or presentation.

For P9 learners need to explain biodiversity changes in a selected world biome and in a selected UK habitat. Tutors should identify the world biome and the UK habitat, or agree them through discussion with learners. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. Evidence could be in the same form as for P7.

For M1, learners need to analyse the role of a selected organisation associated with land use in the UK. Tutors could specify the organisation or agree it through discussion with learners. Learners should show that they understand the purpose, function and major responsibilities of their chosen organisation. This could be presented as a written report or learner presentation containing relevant facts and figures as evidence of their research, for example flow charts showing structure, sources of funding, main policy areas and notable achievements. This could be assessed with P2 and evidence could be presented in the same format.

For M2, learners need to compare how legislation and policy have influenced the environmental impact of land development in the UK. Tutors should identify the legislation and policy or agree it through discussion with learners. A minimum of one policy and one piece of legislation must be covered. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. This could be assessed with P5 and evidence could be presented in the same format.

For M3, learners must discuss human impact on species biodiversity. Learners should explore a minimum of two examples. These could include the extinction or decline of species, loss or changes of habitat, or the introduction of alien species such as the grey squirrel or the Himalayan balsam. This could be assessed with P8 and evidence could be presented in the same format.

For D1, learners must analyse the changes experienced by a selected UK land use over the last 50 years. Tutors should identify the land use or agree it through discussion with learners. Where possible, to ensure assessment is fair the size and complexity of the tasks should be the same for all learners. Learners should provide evidence that they have researched in detail the relevant historical developments, legislation, associated organisations and main operations. For example, they could trace the development of UK agriculture since 1945 and include information on post-war agricultural policy, intensification and related issues, main crop and livestock types and locations. This could be assessed with P1 and evidence could be presented in the same format.

For D2, learners must evaluate the impact of a selected land use law on the UK countryside. Tutors should identify the law or agree it through discussion with learners. Learners need to critically assess its impact using evidence gathered individually or in groups. For example, if evaluating the impact of The CROW Act 2000, learners could examine the advantages and disadvantages of increased public access to the countryside, or if evaluating the National Parks Act 1949, they could examine the impact of the various land designations resulting from the act. Evidence could take the form of a written case study or a learner presentation containing a critical assessment of the law. This could be assessed with P3 and evidence could be presented in the same format.

For D3, learners need to evaluate the effectiveness of UK planning policies in promoting the use of sustainable energy sources in the UK. For a minimum of two specific examples, learners need to critically assess and justify their conclusions on whether planning policy has promoted or hindered the use of sustainable energy sources in the UK. This could be assessed with P6 and evidence could be presented in the same format.

For D4, learners need to analyse the likely relative impacts of conventional fossil fuel, nuclear and sustainable energy sources on the UK natural environment in the next 10 years. This could be presented as a written report or learner presentation. This could be assessed with P7 and evidence could be presented in the same format.

Programme of suggested assignments

The following table shows a programme of suggested assignments that cover the pass, merit and distinction criteria in the grading grid. This is for guidance and it is recommended that centres either write their own assignments or adapt any Edexcel assignments to meet local needs and resources.

Criteria covered	Assignment title	Scenario	Assessment method
P1, P2, P3, M1, D1	UK Land Use, Organisations, Policies and Legislation	<p>You have been asked to research and prepare a verbal presentation, with appropriate slides, on UK land use.</p> <p>You must investigate and report on the amount of land allocated to each of the main UK land uses.</p> <p>Use graphics such as charts to illustrate your findings. Choose one of the main UK land uses and analyse the changes experienced over the last 50 years and present this information too.</p>	Presentation.
P4, D2	UK Rural Policy, Land Use Organisations and Legislation	<p>Describe how the EU Common Agricultural Policy and UK Rural Development Programme have impacted on UK land use. For each policy explain briefly what it aims to achieve and its effect on UK land use.</p> <p>Choose two organisations involved with either of the land use policies above. You will need to provide evidence covering one UK statutory and one non-governmental organisation involved with this policy. You should cover the specific roles and aims of these organisations and for one of the organisations how it influences land use decisions in the UK.</p> <p>For one of the main land uses cover three pieces of associated UK law. For each law explain its aims and describe briefly what it covers. For one of these pieces of legislation evaluate the impact on UK land use.</p>	Written report.

Criteria covered	Assignment title	Scenario	Assessment method
P5, P6, P7, P8, M4, D3, D4	Impacts on the Natural Environment	<p>You have been asked to prepare a report for a local environment group to cover how development of agricultural and industrial activities has impacted on the natural environment in the UK. Choose one agricultural and one industrial activity.</p> <p>Compare how legislation and policy have influenced the environmental impact of land development in the UK, covering one law and one policy.</p> <p>Provide a brief history explaining their development and an analysis of their likely impact on the UK environment in the next 10 years in relation to conventional fossil fuel, nuclear and sustainable energy sources in the UK.</p> <p>Using a real example, explain the planning process that a new energy development must go through and evaluate the effectiveness of UK planning policies in promoting the use of sustainable energy sources in the UK.</p> <p>You can choose the most appropriate way of presenting your findings to the public meeting. This could be a verbal presentation with slides, written report or poster presentation.</p>	Written report or posters or verbal presentation with slides.
P9, M3	Biodiversity Changes	<p>Explain biodiversity changes in a selected world biome and in a selected UK habitat.</p> <p>Explain two human impacts on species biodiversity to include a minimum of two examples. These should include the extinction or decline of species, loss or changes of habitat, or the introduction of alien species.</p>	Written report.

Links to National Occupational Standards, other BTEC units, other BTEC qualifications and other relevant units and qualifications

This unit forms part of the BTEC land-based sector suite. This unit has particular links with:

Level 2	Level 3
Conservation and Improvement of British Habitats	Undertaking Environmental Interpretation in Land-based
Introduction to Agriculture and Conservation	Understanding Countryside Tourism and Recreation

Essential resources

Tutors delivering this unit should have a competent knowledge of the issues surrounding land use in the UK, ideally with personal experience of working within one of the land use organisations. They should have detailed knowledge of the role of land use organisations and legislation and be knowledgeable about the role and application of Environmental Impact Assessment. Tutors should have up-to-date knowledge of environmental issues and policies.

Learners' educational experience would be enhanced through site visits. This may require centres to provide transport.

Employer engagement and vocational contexts

Visits to employer sites and from industry- based speakers, such as planning officers, countryside rangers, countryside managers or renewable energy experts, would be a valuable input for this unit.

Every opportunity should be taken to use examples of real situations and data in the delivery and assessment of this unit.

Indicative reading for learners

Textbooks

Bishop K and Phillips A – *Countryside Planning: New Approaches to Management and Conservation* (Earthscan Publications, 2004) ISBN 1 853838497

Blowers A – *Planning for a Sustainable Environment* (Earthscan Publications, 1993) ISBN 1 85383145X

Blunden J and Curry N – *A People's Charter? 40 Years of the National Parks and Access to the Countryside Act, 1949* (The Stationery Office Books, 1990) ISBN 0117014397

Bromley P – *Countryside Management* (Spon Press, 1990) ISBN 0419151400

Jones C, Baker M, Carter J, Jay S, Short M and Wood C – *Strategic Environmental Assessment and Land Use Planning: An International Evaluation* (Earthscan Publications, 2005) ISBN 1 844071103

Marren P – *Nature Conservation* (Collins, 2002) ISBN 0007113064

Meyer W and Turner B – *Changes in Land Use and Land Cover: A Global Perspective* (Cambridge University Press, 1994) ISBN 0521470854

Rackham O – *The History of the Countryside* (Weidenfeld & Nicholson History, 2000) ISBN 1 842124404

Therivel R – *Strategic Environmental Assessment in Action* (Earthscan Publications, 2004) ISBN 1 844070425

Walford R – *Land Use UK: A Survey for the 21st Century* (Geographical Association, 1997) ISBN 1 899085319

Journals

Animal Conservation

Conservation Biology

Environmental Pollution (Elsevier)

International Journal of Environmental Studies

International Journal of Environment and Pollution

Renewable Energy

Websites

www.bp.com	BP Alternative Energy
www.lantra.co.uk	Sector Skills Council for the Environment and Land-based Industries
www.ukbap.org.uk	UK Biodiversity Action Plan
www.wwf.org.uk	World Wide Fund for Nature
www.bbc.co.uk/nature/environment/conservationnow/global	BBC Science and Nature
www.cat.org.uk	Centre for Alternative Technology
www.cpre.org.uk	Campaign to Protect Rural England
www.defra.gov.uk/environment	Department for Environment, Food and Rural Affairs
www.environment-agency.gov.uk	Environment Agency
www.euei.org	European Union Energy Initiative
www.forestry.gov.uk	Forestry Commission
www.hse.gov.uk	Health and Safety Executive
www.naturenet.net/status/history.html	UK Conservation Legislation
www.planningportal.gov.uk	UK Planning System
www.snh.org.uk	Scottish Natural Heritage
www.statistics.gov.uk	UK Land Use Facts and Figures
www.ukagriculture.com	UK Agriculture Facts and Figures
www.unep-wcmc.org	United Nations Environment Programme – World Conservation Monitoring Centre

Delivery of personal, learning and thinking skills (PLTS)

The following table identifies the PLTS opportunities that have been included within the assessment criteria of this unit:

Skill	When learners are ...
Independent enquirers	researching for their assignments.

Although PLTS opportunities are identified within this unit as an inherent part of the assessment criteria, there are further opportunities to develop a range of PLTS through various approaches to teaching and learning.

Skill	When learners are ...
Self-managers	producing work on time to a good standard
Effective participators	involved in group activities and discussions.

● Functional Skills – Level 2

Skill	When learners are ...
ICT – Use ICT systems	
Select, interact with and use ICT systems independently for a complex task to meet a variety of needs	producing assignments
Use ICT to effectively plan work and evaluate the effectiveness of the ICT system they have used	producing assignments
Manage information storage to enable efficient retrieval	
Follow and understand the need for safety and security practices	
Troubleshoot	
ICT – Find and select information	
Select and use a variety of sources of information independently for a complex task	researching assignments
Access, search for, select and use ICT-based information and evaluate its fitness for purpose	researching assignments
ICT – Develop, present and communicate information	
Enter, develop and format information independently to suit its meaning and purpose including: <ul style="list-style-type: none"> • text and tables • images • numbers • records 	presenting assignments
Bring together information to suit content and purpose	presenting assignments
Present information in ways that are fit for purpose and audience	presenting assignments
Evaluate the selection and use of ICT tools and facilities used to present information	presenting assignments.