

**-SQA- SCOTTISH QUALIFICATIONS AUTHORITY**

**NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION**

**GENERAL INFORMATION**

**-Module Number-** 1110046

**-Session-**1996-97

**-Superclass-** QA

**-Title-** SUSTAINABLE RESOURCE UTILISATION 2

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**-DESCRIPTION-**

**GENERAL COMPETENCE FOR UNIT:** Assessing the ways in which we use our renewable resources, recognising the effects this has on the environment and recognising how a raised awareness can contribute towards increased sustainability.

**OUTCOMES**

1. assess renewable and recyclable resource utilisation;
2. evaluate the effects of resource utilisation practices on the environment;
3. investigate recent developments towards sustainability.

**CREDIT VALUE:** 1 NC Credit

**ACCESS STATEMENT:** Candidates will benefit from already having achieved Standard Grade Biology or Geography at Credit level of SQA module equivalents.

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For further information contact: Committee and Administration Unit, SQA, Hanover House, 24 Douglas Street, Glasgow G2 7NQ.

Additional copies of this unit may be purchased from SQA (Sales and Despatch section). At the time of publication, the cost is £1.50 (minimum order £5.00).

**NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION****STATEMENT OF STANDARDS****UNIT NUMBER:** 1110046**UNIT TITLE:** SUSTAINABLE RESOURCE UTILISATION 2

Acceptable performance in this unit will be the satisfactory achievement of the standards set out in this part of the specification. All sections of the statement of standards are mandatory and cannot be altered without reference to SQA.

**OUTCOME**

- 1. ASSESS RENEWABLE AND RECYCLABLE RESOURCE UTILISATION**

**PERFORMANCE CRITERIA**

- (a) The assessment of renewable resource utilisation in a domestic situation is appropriate to the given situation.
- (b) The assessment of renewable resource utilisation in a workplace situation is appropriate to the given situation.
- (c) The assessment of waste management in selected situations is comprehensive with respect to sustainability.
- (d) The description of current practices towards the sustainable use of renewable and recyclable resources in other countries is valid.

**RANGE STATEMENT**

Renewable and recyclable resource: biological material; energy; manufactured material.

**EVIDENCE REQUIREMENTS**

Written and/or oral evidence of the candidate's ability to assess the utilisation of the range of resources and the management of waste in one domestic and one workplace situation.

Written and/or oral evidence of the candidate's ability to describe two examples of practices carried out in other parts of the world relating to the sustainable use of resources across the range.

**OUTCOME**

2. EVALUATE THE EFFECTS OF RESOURCE UTILISATION PRACTICES ON THE ENVIRONMENT

**PERFORMANCE CRITERIA**

- (a) The description of cycles of production and consumption and their effects on the environment is valid and reflects current practices.
- (b) The evaluation of the different options for the sustainability of a given resource is valid.
- (c) The description of the environmental effects of rural and industrial practices is valid.
- (d) The description of the effects on resource utilisation of individual human actions is valid and reflects current trends.

**RANGE STATEMENT**

Cycle of production and consumption: water; energy.

Environmental effects: ecosystem change; atmospheric pollution; water pollution; chemicals; waste recycling.

**EVIDENCE REQUIREMENTS**

Written and/or oral evidence of the candidate's ability to produce descriptions and evaluations across the range where appropriate for Performance Criteria (a), (b) and (d).

Written and/or oral evidence of the candidate's ability to describe the environmental effects across the range for one rural and one industrial practice for Performance Criterion(c).

**OUTCOME**

3. INVESTIGATE RECENT DEVELOPMENTS TOWARDS SUSTAINABILITY

**PERFORMANCE CRITERIA**

- (a) The description of sustainability principles identified by leading authorities is accurate.
- (b) The description of government initiatives intended to increase sustainability is accurate with respect to current programmes.
- (c) The description of the main features of a sustainability plan is appropriate for a given situation.
- (d) The investigation of local environmental initiatives is valid in terms of sustainability and environmental awareness.
- (e) The assessment of how one's own actions could contribute towards the sustainable use of renewable resources is valid.

**RANGE STATEMENT**

Main features: management of resources; waste management.

**EVIDENCE REQUIREMENTS**

Written and/or oral evidence of the candidate's ability to produce descriptions, across the range where appropriate, an assessment and an investigation for Performance Criteria (a), (b), (c), (e) and (d), respectively.

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**ASSESSMENT**

In order to achieve this unit, candidates are required to present sufficient evidence that they have met all the performance criteria for each outcome within the range specified. Details of these requirements are given for each outcome. The assessment instruments used should follow the general guidance offered by the SQA assessment model and an integrative approach to assessment is encouraged. (See references at the end of support notes).

Accurate records should be made of the assessment instruments used showing how evidence is generated for each outcome and giving marking schemes and/or checklists, etc. Records of candidates' achievements should be kept. These records will be available for external verification.

**SPECIAL NEEDS**

In certain cases, modified outcomes and range statements can be proposed for certification. See references at end of support notes.

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**NATIONAL CERTIFICATE MODULE: UNIT SPECIFICATION****SUPPORT NOTES**

**UNIT NUMBER:** 1110046

**UNIT TITLE:** SUSTAINABLE RESOURCE UTILISATION 2

**SUPPORT NOTES:** This part of the unit specification is offered as guidance. None of the sections of the support notes is mandatory.

**NOTIONAL DESIGN LENGTH:** SQA allocates a notional design length to a unit on the basis of time estimated for achievement of the stated standards by a candidate whose starting point is as described in the access statement. The notional design length for this unit is 40 hours. The use of notional design length for programme design and timetabling is advisory only.

**PURPOSE** This module may be taken as a free-standing module in a wide variety of programmes. It is particularly suitable for candidates undertaking programmes in the land-based sector.

SQA publishes summaries of NC units for easy reference, publicity purposes, centre handbooks, etc. The summary statement for this unit is as follows:

On completion of this module, the candidate will have an appreciation of the way society uses renewable resources and how resource utilisation practices affect the environment. The candidate will be able to describe recent trends towards sustainability at both local and national levels.

**CONTENT/CONTEXT** The candidate should achieve an understanding of sustainable resource utilisation to a large extent by considering appropriate local situations

Corresponding to Outcomes 1-3:

1. The assessment of renewable resource utilisation should be based upon typical current domestic situations and current relevant workplace situations. The domestic situations could include the family garden and transport. Relevant workplace situations could include rural and/or urban enterprises. Considerations of waste management could be related to the chosen domestic and workplace situations and should include aspects of resource use as well as waste product recycling and disposal. The variation in the approach to sustainability, re-use and recycling in other countries should enable comparisons with, and proposals for improvement to, the UK situation to be made. Examples such as dual water systems, bottle drinking water, sun, waves and wind as energy sources, short rotation coppicing, composting and recycling of various wastes could be used.

2. The cycle of production and consumption of water should include collections of the resource, treatment, distribution and disposal of waste. Energy should be considered from the points of view of extraction, generation from fossil fuels and also from renewable resources, distribution and use. Acid rain and the greenhouse effect could be included amongst the environmental effects. The different options for using water or other resource for energy production could be used to illustrate levels of sustainability. Rural practices could include examples from intensive farming or commercial forestry such as the use of inorganic fertilisers, pesticides or stubble burning. Industrial practices should be considered from the point of view of raw materials used, products, by-products and transport involvement. Individual human actions should consider the important role of everyday activities such as preferred mode of transport and diet and also actions relating to public opinion and voting pressure.
3. The leading authorities concerned with sustainability principles that could be referred to include the United Nations Environment Programme, UK Government, Friends of the Earth and Scottish Natural Heritage. The importance of, scope for, and shortcomings of government initiatives could be developed by considering lead-free petrol, gaseous emission and chemical pollutant controls and grant aid of land use and energy efficiency projects. The roles of pressure groups, lead-free petrol, gaseous emission and chemical pollutant controls and grant aid of land use and energy efficiency projects. Situations such as a local factory, farm, production unit of a farm or forest could be used to develop the concepts of a sustainability plan. Initiatives in the local area could related to activities such as tree-planting schemes, hedgerow reinstatement, waste product recycling and the promotion of the use of recyclable materials. This could then be extended into an examination of environmental awareness in the local population. Individual actions could related to one situation, e.g. the home, and could assess the merits of currently available improvement schemes which related to sustainability with respect to renewable resources.

**APPROACHES TO GENERATING EVIDENCE** Formal introductory sessions should be used to explain the concepts involved. A candidate-centred approach should be adopted wherever possible. use should be made of relevant reports and local information. Visits to local sites are strongly recommended.

The candidates could work individually or in small groups. Group discussions could make an important contribution especially where a range of situations is being covered. The preparation of questionnaires could be carried out as a group activity. The results of individual interviews and/or completed questionnaires could then be discussed by the whole group to draw together the information and detect trends.

**ASSESSMENT PROCEDURES** Centres may use the instruments of assessment which are considered by tutor/trainers to be the most appropriate. Examples of instruments of assessment which could be used are as follows:

Corresponding to Outcomes 1-3

- Outcome 1    An integrated assessment in the form an assignment and a written report could be used to cover all performance criteria. Satisfactory achievement of the outcomes is based on all of the performance criteria being met.
- Outcome 2    Integrated assessment in the form of assignments and written reports could be used to cover all of the performance criteria. Satisfactory achievement of the outcome is based on all of the performance criteria being met.
- Outcome 3    Integrated assessments in the form of assignments and written reports could be used to cover all of the performance criteria. Satisfactory achievement of the outcome is based on all of the performance criteria being met.

**PROGRESSION**    This module contributes towards the level III General SVQ Land-based Industries qualification.

**RECOGNITION**    Many SQA NC units are recognised for entry/recruitment purposes. For up-to-date information see the SQA guide 'Recognised Groupings of National Certificate Modules'.

## REFERENCES

1.    Guide to unit writing. (A018).
2.    For a fuller discussion on assessment issues, please refer to SQA's Guide to Assessment. (B005).
3.    Procedures for special needs statements are set out in SQA's guide 'Candidates with Special Needs'. (B006).
4.    Information for centres on SQA's operating procedures is contained in SQA's Guide to Procedures. (F009).
5.    For details of other SQA publications, please consult SQA's publications list. (X037).

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