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## AGRICULTURAL EDUCATION IN THE UNITED KINGDOM

by

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### ABSTRACT

*The provision of Agricultural Education in the United Kingdom is reviewed from the establishment of the first Chair of Agriculture in 1790 up to the present time. This includes the establishment and development of agricultural education institutions over the years.*

*Similarly the range of course provision, originally focusing on agriculture but now providing for the whole range of the land-based industries is surveyed. Full time and part time courses now offered range from agricultural studies in schools to degree and post-Graduate qualifications. Particular reference is made to the programmes of education and training which are currently available in Management and Supervisory studies.*

*The paper concludes by referring to the new National Vocational Qualifications (NVQs) in subjects relating to the Land-based Industries and new General National Vocational Qualifications (GNVQs) which are currently being developed in this subject area. Finally, a number of questions are posed about possible future developments in Agricultural Education in the UK.*

## **THE ESTABLISHMENT OF FORMAL AGRICULTURAL EDUCATION IN THE UNITED KINGDOM IN THE 18th AND 19th CENTURIES**

The first steps towards the provision of educational faculties in agriculture were taken in 1790 with the establishment of a Chair of Agriculture in Edinburgh University. This was followed by a professorship in Rural Economy at Oxford in 1796. Scott Watson and Hobbs (1951).

A most significant development in agricultural education occurred in 1845 with the opening of the Royal Agricultural College at Cirencester - *ibid* page 83, to be followed in 1890 by the establishment of the School of Agriculture in Cambridge University.

In 1889 the Technical Instruction Act empowered the new County Councils in England and Wales to provide technical instruction, consequently some County Agricultural institutes were established - for example, in Cheshire (Reaseheath), Essex (Writtle) and in Hampshire. Money for the establishment of these county institutes and for the development of technical education was collected by the Government from a tax on spirits known as "whiskey money". Hudson Report (1974).

## **THE DEVELOPMENT OF AGRICULTURAL EDUCATION IN THE FIRST HALF OF THE 20th CENTURY**

During the first three decades of the 20th Century a number of other county councils acquired farms and created County Farm Schools or Farm Institutes. Some were purpose built (eg Plumpton - East Sussex) in 1924 and Sparsholt in Hampshire (in 1926). Others were based in often delightful old country houses which were adapted to provide residential and teaching facilities.

## **AGRICULTURAL EDUCATION PROVISION SINCE 1945**

After the end of the Second World War in 1945 a number of other County Councils - often those in the "shire" counties also established Farm Institutes.

In the academic year 1957/58 there were 32 Farm Institutes in England (including 2 specialising in Horticulture). Altogether these provided 2176 residential places in that year. De La Warr Report (1958).

During the post-War period the existing Universities developed their range of degree and postgraduate courses; similar development and diversification occurred in the "National" Colleges - Harper Adams in Shropshire, Seale Hayne in Devon and Shuttleworth in Bedfordshire. Similarly the Scottish Agricultural Colleges continued to develop and a new "national" Welsh College of Agriculture was established in Aberystwyth at the end of the 1960s.

## **THE CURRENT PROVISION OF AGRICULTURAL EDUCATION IN THE UNITED KINGDOM:**

### **The Institutions**

At the present time Agricultural Education, or more recently marketed as education for the Land-based Industries, is provided by the following types of institutions.

Established Universities (eg Aberystwyth, Edinburgh, London [Wye], Newcastle, Reading)

New Universities [formerly Polytechnics] (eg Anglia Polytechnic University, De Montfort, Leicester, Plymouth)

Colleges of Agriculture (independent of Local Government control since the 1992 Further & Higher Education Act effective from 1 April 1993)

Colleges of Further Education (including Technical Colleges, Tertiary Colleges and V1th Form Colleges)

Secondary Schools - specialising in rural subjects (eg Brymore School of Rural Technology in Somerset)

In the last published edition (1990/91) of courses in Land-based Industries 19 University Centres in England are listed as providing degree and/or post-Graduate courses in subjects related to the Land-based Industries plus a further 6 in Scotland, 1 in Northern Ireland and 3 in Wales - see Appendix I.

In addition to the universities, there is a very large number of colleges some of which also provide degree courses in addition to large programmes of sub-degree courses for the Land-based Industries. The 1990/91 edition of courses in Land-based Industries lists 82 colleges in the United Kingdom as providers of such courses - see Appendix II.

The widespread range of these colleges distributed throughout the United Kingdom is shown in the map presented in Appendix III.

## **THE CURRENT PROVISION OF AGRICULTURAL EDUCATION IN THE UNITED KINGDOM**

### **Courses Provided**

The most recent edition of Training & Education Issue of Agricultural and Equipment International (1995) lists over 1000 courses in Agriculture and related subjects. These range from 1st Diploma Courses for school leavers to post-Graduate research degrees and illustrate the diversification of curriculum that has occurred in recent years. For example, in addition to courses related to agriculture, horticulture and mechanisation, subjects such as Animal Management & Care, Conservation, Fishery Studies & Aquatics, Floristry, Environmental Management, Forestry & Countryside Skills, Game & Wildlife Management, Horse Management, Business Management and Rural Resource Management are being offered by a number of universities or colleges.

Even though most Agricultural Colleges have diversified their range of courses during recent years they are often still regarded as "Agricultural Colleges". This was confirmed from recent research by Errington, Harrison-Mayfield and Bennett (1994) who stated that ....

"Despite the persistence of their 'monotechnic' image, the agricultural colleges are well known among the rural population and have a positive image in the minds of business people and rural inhabitants extending far beyond the agricultural community."

The most authoritative source of information on degree and post graduate courses available in the UK is given in the Annual UCAS (The Universities and Colleges Admission Service) Handbook.

The UCAS Handbook - 1995 Entry, lists the following subjects relating to Agriculture/Agricultural Science: Agroforestry, Agronomy, Animal Farming, Biochemistry, Biology, Biotechnology, Botany, Crop Studies, Engineering, Horticulture, Industrial Studies (Land-based Industries).

Degree courses are listed in the following Agriculture/Agricultural Science related subjects: Agricultural Business Management, Agricultural Chemistry, Agricultural Economics, Agriculture and the Environment, Agricultural and Food Marketing, Agricultural Management, Agricultural Microbiology, Agricultural Retailing, Agricultural Technology, Agricultural Zoology, Arable Farming, European Agricultural Studies, Extended Agriculture.

Clearly students are confronted with a very complex list of courses available, as well as many institutions where they can study. Discussions with present day students reveal that each individual student will have their own agenda as to "the place and the course" they will follow and this is not necessarily confined to education/academic issues. Often, students regard other selection criteria such as geographic location ie near - or far from home as important, facilities at the institution including indoor and outdoor sports facilities, the "atmosphere" of the institution and the "attitude" of the staff.

All of these factors present interesting challenges to University and College marketing staff who are trying to "sell" courses and to recruit students.

## **THE CURRENT PROVISION OF AGRICULTURAL EDUCATION COURSES IN THE UNITED KINGDOM:**

### **Courses Available in Management and Supervisory Skills**

A large number of teaching institutions involved with the provision of agricultural education also provide specialist courses in Management and Supervisory Studies. In an attempt to collate this information for people who may wish to study in the management/supervisory area or farmers and managers who want to update their management skills, the CMA (Centre of Management in Agriculture) and the I Agr M (Institute of Agricultural Management) have produced a leaflet listing centres and courses in these subjects. The first leaflet was produced in 1990 and this was updated in 1994 - see Courses Available in Management and Supervisory Studies (1994). The leaflet lists 39 colleges in England and Wales, Scotland and Northern Ireland which provide courses in Management and Supervisory Studies. In addition 10 universities are listed covering England, Wales and Scotland.

Details are provided of Degree, Diploma and Certificate courses in Management and Supervisory subjects as well as part-time/open learning courses including MBA Degrees, City & Guilds of London Institute Certificate and Scotvec Diplomas. Details are also provided of specialist short courses in the management/supervisory areas including those provided by ATB Landbase (the Agricultural Training Board).

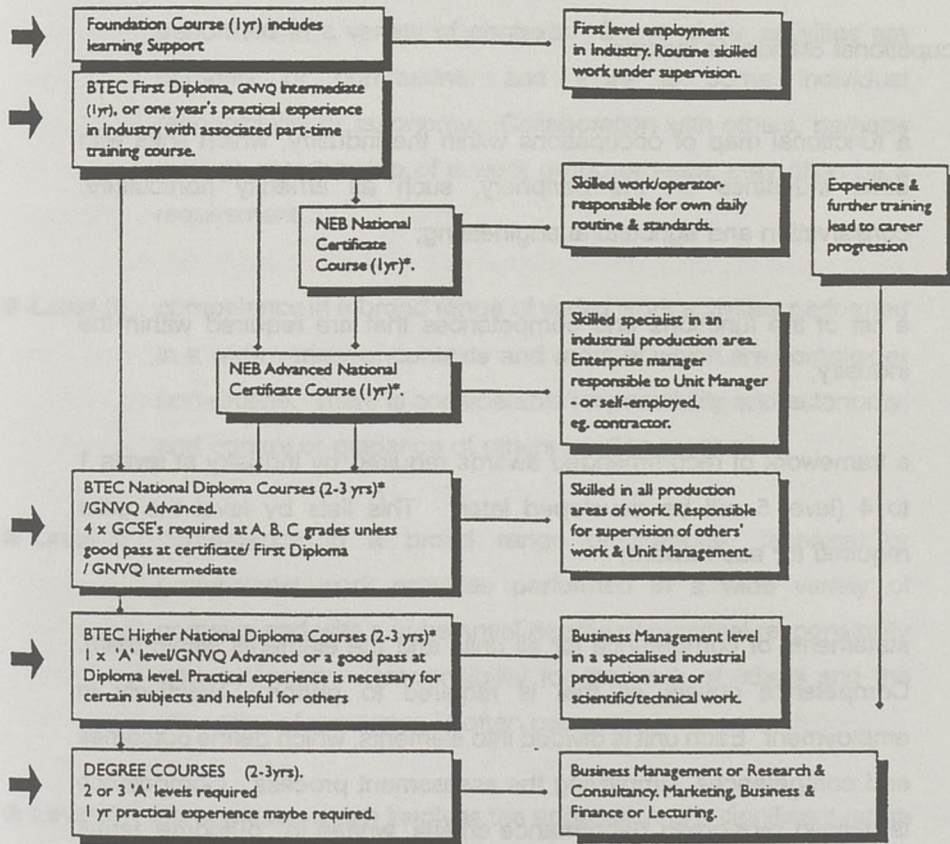
### **AGRICULTURAL EDUCATION: PROGRESSION**

The range of courses provided in agricultural education in the United Kingdom is most extensive. The number of universities and colleges providing these courses are numerous. Consequently, a person seeking appropriate education and a subsequent career in the Land-based Industries might be forgiven for thinking that they are entering a maze.

In an attempt to systemise the opportunities for progression, Figure 1 has been constructed indicating course level and career levels.

Figure 1

**COURSE LEVEL leading to CAREER LEVEL**



**Notes:**

\* Opportunities for 'bridging' to higher level courses; by-passing 1st year studies, i.e.: NC to ND Year 2, or HND to Degree (e.g., at Reading University).

'A' Level = Advanced level of General Certificate of Education

BTEC = Business & Technology Education Council

GCSE = General Certificate of Education

GNVQ = General National Vocational Qualification

HND = Higher National Diploma

NC = National Certificate

ND = National Diploma

NEB = National Examinations Board for Agriculture & Allied Industries of City & Guilds of London Institute

Source = *Careers & Training (1995) Sparsholt College Hampshire.*



## NEW VOCATIONAL QUALIFICATIONS AND AGRICULTURAL EDUCATION

New National Vocational Qualifications (NVQs) and Scottish Vocational Qualifications (SVQs) are based on Occupational Standards defined by industries and co-ordinated by Industry Lead Bodies.

Occupational Standards include:

- a functional map of occupations within the industry, which links with other industries on the periphery, such as amenity horticulture, conservation and agricultural engineering;
- a list of the functions and competences that are required within the industry;
- a framework of recommended awards required by industry at levels 1 to 4 (level 5 will be developed later). This lists by level the units required for each award;
- statements of competence for all units and the elements within them. Competence covers all that is required to perform effectively in employment. Each unit is divided into elements, which define outcomes and competences, simplifying the assessment process. Competence is defined by agreed performance criteria, written in 'outcome' terms within circumstances outlined in range statements. Evidence of performance and knowledge is required to demonstrate that competence has been achieved.

NVQs and SVQs are new and distinctive forms of qualifications, which are: relevant, comprehensible, progressive, accessible and comprehensive.

They are set within a national framework and their place within the framework is indicated by their level (1-5).

- **Level 1:** competence in the performance of a range of varied work activities, most of which may be routine and predictable.
- **Level 2:** competence in a significant range of varied work activities, performed in a variety of contexts. Some of the activities are complex or non-routine, and there is some individual responsibility or autonomy. Collaboration with others, perhaps through membership of a work group or team, may often be a requirement.
- **Level 3:** competence in a broad range of varied work activities performed in a wide variety of contexts and most of which are complex or non-routine. There is considerable responsibility and autonomy, and control or guidance of others is often required.
- **Level 4:** competence in a broad range of complex, technical or professional work activities performed in a wide variety of contexts and with a substantial degree of personal responsibility and autonomy. Responsibility for the work of others and the allocation of resources is often present.
- **Level 5:** competence which involves the application of a significant range of fundamental principles and complex techniques across a wide and often unpredictable variety of contexts. Very substantial personal autonomy and often significant responsibility for the work of others and for the allocation of substantial resources feature strongly, as do personal accountability for analysis and diagnosis, design, planning, execution and evaluation.

In addition to the development of NVQs, the British Government also announced in 1991 in the White Paper "Education and Training for the 21st Century" the introduction of General National Vocational Qualifications (GNVQs). The White Paper stated that ....

"General NVQs should cover broad occupational areas, and offer opportunities to develop the relevant knowledge and understanding, and to gain an appreciation of how to apply them at work. General NVQs should also:

- offer a broad preparation for employment as well as an accepted route to higher level qualifications, including higher education;
- require the demonstration of a range of skills and the application of knowledge and understanding relevant to the related occupations;
- be of equal standing with academic qualifications at the same level;
- be clearly related to the occupationally specific NVQs, so that young people can progress quickly and effectively from one to the other;
- be sufficiently distinctive from occupationally specific NVQs to ensure that there is no confusion between the two;
- be suitable for use by full time students in colleges, and if appropriate in schools, who have limited opportunities to demonstrate competence in the workplace."

GNVQs have already been developed for a number of subjects but GNVQs for the Land-based Industries are not yet available. It is anticipated that these will be available for pilot testing in 1996/97 and fully established in the following year.

#### **AGRICULTURAL EDUCATION INTO THE 21st CENTURY**

As developments continue in the Land-based Industries, universities and colleges will respond to these changes by revising the educational programmes they provide and the need for farmers and managers to be educated and keep up to date will be as important as ever. The importance

of this was observed by Norman (1986) when researching the Management of Time by Farmers & Managers, who stated ....

"It is important that agricultural managers keep themselves up to date technically on matters relating to crop and animal production as well as farm machinery and business management techniques because the nature of agriculture in the United Kingdom is such that a 'division of responsibilities' between Operator, Craftsman, Technician, Technologist and Manager is unrealistic."

While farmers and managers may look for new ways to update themselves, so education providers may also need to change into the 21st Century. For example, conclusions drawn by Errington, Harrison-Mayfield and Bennett on the future of agricultural colleges, suggest that these might be a ...

"radical transformation of the existing agricultural colleges into a network of Rural Business Centres providing a range of services to facilitate the restructuring of the rural economy. The network would offer a much broader range of training and vocational education to the wider rural economy, drawing on its past experience of servicing small and geographically-scattered firms. It might provide the home-base for trainers and 'facilitators' running management development groups modelled on those currently found in agriculture and the 'business clubs' already formed by some local enterprise agencies."

## CONCLUSIONS

As the 21st Century approaches, Agricultural Education in the UK may, or may not, experience a "radical transformation" - but change is bound to occur. This prompts the following questions for all those involved to consider:

- (i) Should Agricultural Education providers consider forming their institutions into a network of Rural Business Centres?



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## APPENDICES

### Appendix 1

University Centres listed in the 1990/1991 edition of courses in Land-based Industries

University of Bath  
School of Biological Science

University of Bristol  
School of Veterinary Science

University of Cambridge  
Department of Genetics

University of Cambridge  
Department of Land Economy

University of Cambridge  
Department of Clinical Veterinary  
Medicine

University of Exeter  
Agricultural Economics Unit  
Department of Economics

University of Leeds  
Department of Animal Physiology &  
Nutrition; Pure & Applied Biology

University of Liverpool  
Faculty of Veterinary Science

University of London  
Silwood Centre for Pest Management  
Imperial College

University of London  
Royal Veterinary College

University of Manchester  
Faculty of Economic and Social  
Agriculture Economics Department

University of Newcastle Upon Tyne  
Faculty of Agriculture

University of Nottingham  
School of Agriculture

University of Nottingham  
Department of Economics

University of Oxford  
Department of Plant Sciences

University of Oxford  
Agricultural Economics Department

University of Reading  
Department of Agriculture

University of Reading  
Faculty of Urban & Regional Studies

University of Reading  
Agricultural Extension & Rural Development  
Department

The University College of Wales  
School of Agricultural Sciences

University of Wales  
School of Pure & Applied Biology

University College of North Wales  
School of Agriculture & Forest Sciences



**Appendix 1 Cont'd**

The Queen's University of Belfast  
Faculty of Agriculture & Food Science

University of Aberdeen

University of Edinburgh  
Faculty of Veterinary Medicine  
Royal 'Dick' School of Veterinary  
Medicine

University of Edinburgh  
Faculty of Science Office

University of Glasgow  
Faculty of Science

University of Glasgow  
Faculty of Veterinary Medicine

University of Strathclyde

## APPENDIX II

### COLLEGES PROVIDING COURSES IN LAND-BASED INDUSTRIES SUBJECTS AS LISTED IN THE 1990/91 EDITION OF COURSES IN LAND-BASED INDUSTRIES

(The number for each College indicates its location on the map given in Appendix III)

- 1 Kirkwall Further Education Centre
- 2 Thurso Technical College
- 3 Inverness College of Further & Higher Education
- 4 Clintery Agricultural College
- 5 Scottish Agricultural College - Aberdeen
- 6 Angus College of FE
- 7 Dundee College of Further Education
- 8 Scottish Agricultural College (HQ) - Perth
- 9 Elmwood College
- 10 Falkirk College of Technology
- 11 Langside College
- 13 Motherwell College
- 14 Oatridge Agricultural College
- 15 Scottish Agricultural College - Edinburgh
- 16 Borders Agricultural College
- 17 Kilmarnock College
- 18 Borders College of Further Education
- 19 Scottish Agricultural College - Auchincruive
- 20 Barony Agricultural College
- 21 Greenmount College of Agriculture & Horticulture
- 22 Loughry College of Agriculture & Food Technology
- 23 Enniskillen Agricultural College
- 24 Kirkley Hall College of Agriculture
- 25 Durham College of Agriculture & Horticulture
- 26 Cumbria College of Agriculture & Forestry
- 27 Askham Bryan College of Agriculture & Horticulture
- 28 Bishop Burton College of Agriculture
- 29 Lancashire College of Agriculture & Horticulture
- 30 Cheshire College of Agriculture
- 31 Brackenhurst College
- 32 Derbyshire College of Agriculture & Horticulture
- 33 Lincolnshire College of Agriculture & Horticulture
- 34 Brooksby Agricultural College
- 35 Norfolk College of Agriculture & Horticulture
- 36 Harper Adams Agricultural College
- 37 Staffordshire College of Agriculture
- 38 Walford College of Agriculture
- 39 Cambridgeshire College of Agriculture & Horticulture (Wisbech)
- 40 Herefordshire College of Agriculture
- 41 Worcestershire College of Agriculture

## Appendix II Cont'd

- 42 Pershore College of Horticulture
- 43 Evesham College of Horticulture
- 44 Warwickshire College of Further Education
- 46 Moulton College of Agriculture
- 47 Silsoe Further Education Centre (Cranfield Rural Institute)
- 48 Shuttleworth College (Cranfield Rural Institute)
- 49 Cambridgeshire College of Agriculture & Horticulture (Milton)
- 51 Otley College of Agriculture & Horticulture
- 52 Gloucestershire College of Agriculture
- 53 Royal Agricultural College
- 54 West Oxfordshire College
- 55 Rycotewood College
- 56 Aylesbury College of Further Education
- 57 Hertfordshire College of Agriculture & Horticulture (Oaklands)
- 58 Writtle Agricultural College
- 60 Capel Manor Horticultural & Environmental Centre
- 61 Berkshire College of Agriculture
- 62 Lackham College
- 63 Merrist Wood Agricultural College
- 64 Hadlow College of Agriculture & Horticulture
- 65 Norton Radstock Technical College
- 66 Somerset College of Agriculture & Horticulture
- 67 Sparsholt College Hampshire
- 68 Brinsbury College
- 69 Plumpton Agricultural College
- 70 Dorset College of Agriculture & Horticulture
- 71 Bicton College of Agriculture
- 73 Seale Hayne College
- 74 Duchy College of Agriculture & Horticulture
- 75 Welsh College of Horticulture
- 76 Llysfasi College of Agriculture
- 77 Glynllifon College
- 78 Montgomery College of Further Education
- 79 Welsh Agricultural College
- 80 Carmarthenshire College of Agriculture & Horticulture
- 81 Mid Glamorgan College of Agriculture & Horticulture
- 82 Usk College of Agriculture

Map of location of Colleges providing courses in land based industries subjects as listed in the 1990/91 edition of Courses in Landbased Industries (The number of each College is given in Appendix II)

