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Socio-economic survey in upland areas: field work based upon the Merlewood land classification system: research note

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1 The Merlewood land classification system

A team of research workers based at the Institute of Terrestrial Ecology's Merlewood Research Station has developed a sampling system for Britain. The system is based upon the careful analysis of the environmental characteristics of one in 45 of the one km squares from the National Grid. Each of these squares is allocated to one of 32 'land classes'. The land classes were derived by computer analysis, which split the whole set into dichotomous groups: first the 2 groups most unlike each other, then 4, then 8, and so forth. Thirty-two was felt to be a reasonable number to handle. The system provides arguably the best sampling framework for land use or ecological purposes available, and is described in detail in a number of publications (Bunce *et al.* 1981; Heal & Bunce 1984; Bunce 1987).

2 The land use surveys

In 1978 and 1984, field work was undertaken which involved detailed recording of the land use and ecological characteristics of 8 squares from each land class (ie 256 squares). In the 1984 survey, 4 more squares from each class were resurveyed to permit partial replacement, if required. Comparison with other, independently derived, figures from censuses or surveys using larger samples has shown the system to be remarkably robust. The 1978-84 survey figures also permit statistics of land use change to be derived (Barr *et al.* 1986).

3 Adding in socio-economic data

From 1985-87, the Economic and Social/Natural Environment Research Councils (ESRC/NERC) established their first joint fellowship, based at Merlewood. A connecting theme of the work was to explore the past, present and future influences of the Common Agricultural Policy on the countryside. Aspects of this work are discussed in various publications by Bell (1985a, b, c, 1986, 1987a; Bell & Elliott 1985; Bell & Payne 1987). Within this context, exploration of the potential for incorporating socio-economic data within the ITE sampling frame was a major part of the brief. The success in this regard, particularly as part of a joint study with the Centre for Agricultural Strategy, is discussed elsewhere (Bell 1987b; Centre for Agricultural Strategy 1986).

A further related aspect of work within the fellowship has involved a first examination of the nature of the human sample involved in the squares. A related block of land classes was selected (nos 17-21), covering a range of hill and upland sites. An attempt has been made to

identify and contact the owners and occupiers of the land within those 40 squares (ie 4000 ha). Normally this has involved a field visit and a questionnaire survey covering such aspects as:

- tenure
- farm or estate enterprises and capitalization
- agricultural and forestry management
- fertilizer and pesticide use
- attitudes and practice regarding landscape or habitat features
- explanation of land use change
- likely response to proposed European Community policies such as pre-pensions, extensification, or limitations on hill livestock compensatory allowances.

Each farm has subsequently been allocated to its appropriate farm management survey categories. This process gains the benefit of relating land in the sample squares to their appropriate farm management data for their size and type, collected annually by agricultural colleges and universities. This wide range of economic information is used for the compilation of, and in large part is published in, the annual farm income 'Blue Books' (Ministry of Agriculture, Fisheries & Food, annual). More detailed and regionally discriminated data are published by relevant universities or colleges. These sources are working tools of agricultural economics, but we have not previously had the ability to utilize them in conjunction with a carefully stratified land use survey. The data could have been fitted as a desk exercise, with expert assessment of the likely farm or estate system, but this exercise could not necessarily be expected to pick up the many socio-economic factors which influence land use practice; for example,

- tenancy conditions precluding land use change;
- other special tenures or ownerships by conservation-oriented landlords;
- areas of small, pressured or part-time farms;
- large, especially sporting, estates purchased with no intention of ever showing a profit;
- the importance of production quotas;
- aims and objectives of the farmers.

The analysis of the survey data is being undertaken in

conjunction with the ESRC-supported Rural Areas Database (RAD) at Essex University, and it is intended that it will be accessible via RAD in due course. In parallel, Dr Clive Potter and colleagues at Wye College have carried out a similar exercise for 2 land classes distributed in the lowlands. This project is part of the ESRC-supported work on setaside as an environmental and policy instrument, and represents a significant link between 2 of the leading institutions in countryside research. A good deal of follow-up work may be generated, and this will be one aspect to be covered in a final report to both Research Councils.

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