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1. Background to the Report

1.1 In 1995, WWF published a report that critically examined the provision of agri-environmental advice for farmers in the UK. *Networks of Knowledge* provided a thorough overview of the entire agri-environmental knowledge system. It covered the generation of knowledge through agri-environmental research and its transmission through advice training and education in agricultural colleges. One of the aims of this new study, produced six years on, is to update key sections of *Networks of Knowledge*. However, we have not attempted slavishly to re-work the original report section by section. Rather we provide a commentary on some key changes and focus our main attention on the continued need for public policy attention and reform in the area of advice and training. This is also the sector of the knowledge network which is the most fluid and continues to undergo the greatest change.

1.2 By contrast, the worlds of agricultural research and of agricultural education are broadly structured in the same way as they were in 1994. In research, the shift towards a greater attention to environmental issues has continued. The value of some of this research was highlighted by WWF in its 1998 report *Networking Scientists and Farmers*. In agricultural education, our strong impression from those we have spoken to, and from the literature, is that the coverage of environmental issues has improved in the colleges since the early 1990s and few courses would now suffer from the shortcomings outlined in *Networks of Knowledge*. Of course, there is always room for improvement and the main challenge in this sector is now a practical one - that of ensuring adequate information and educational material is available for lecturers and students alike.

1.3 The remainder of the report is divided into five main chapters. In Chapter 2 we examine the issue of knowledge and its role in sustainable agriculture. The chapter highlights some of the important research that is being undertaken to provide a knowledge base of potential importance to farmers wishing to adopt sustainable techniques, and identify some areas where more research is required. We also highlight here the changing nature of agricultural markets and policy and how that impacts on knowledge requirements. Chapters 3, 4 and 5 provide the main findings from our re-survey of advice and information provision. Finally we make recommendations on how problems associated with the vertical and horizontal fragmentation identified in chapters 3 and 4 might be overcome.
2. Knowledge and Sustainable Agriculture

Introduction

2.1 When the research for Networks of Knowledge was undertaken in 1994, agriculture was prospering. In retrospect, this now seems very much the lull before the storm. The MacSharry reforms to the Common Agricultural Policy heralded a shift to world market prices for many farm commodities, which in the late 1990s became one of the root-causes of the farm income crisis which still afflicts the industry. But the impact of the reforms was postponed by unexpectedly buoyant world market prices in the early 1990s. This, coupled with the low value of sterling, meant that most farmers maintained profitability up until 1996. Consequently, Networks of Knowledge engaged with a familiar set of obstacles. Agri-environmental research was seen as still too dominated by production problems and perspectives. The same applied to the agricultural colleges. In advice and training there were familiar problems of competing messages, inadequate resources, and farmers not perceiving the need or desirability for environmental advice. In short, Networks of Knowledge showed environmental knowledge to be a weak, and sometimes unrecognised, element in the Agricultural Knowledge System (AKS).

2.2 Six years on the situation has changed dramatically. This is not to say that we have crossed a Rubicon and that environmental sustainability is now centre stage in the AKS. Problems remain – some quite serious – but the context in which this policy debate takes place has been transformed. Farmers are now increasingly aware of environmental and associated issues as are their advisors and others within the AKS. Some of the main reasons for this are as follows:

- the changing nature of the food market partly as a result of BSE which has led, inter alia, to an increasing emphasis on quality assurance schemes, a rise in demand for organic food and a rise demand for local foods;

- the Agenda 2000 CAP reform and the emergence of the Rural Development Regulation as the second pillar of the CAP;

- the government’s commitment to an increased spend on agri-environmental schemes within the RDR;

- an increasing emphasis on lower input systems of farming, such as Integrated Farming Systems.

2.3 There was a time when knowledge requirements for environmentally friendly agriculture were confined to particular conservation habitats. A cursory examination of advisory leaflets of two decades ago showed a concentration on how to manage woodlands or plant new ones, how to look after ponds or create them, how best to manage hedgerows for wildlife. In the late 1980s and early 1990s mainstream agricultural practices became increasingly implicated as attention shifted to set-aside management and field and water margins. The above list indicates that the knowledge required for today’s environmentally friendly farming is much more likely to have a whole farm focus.

2.4 The environmental performance of agriculture is an outcome of many interacting factors. Four are of particular importance:
• the performance and characteristics of commodity and input markets,
• agricultural policy,
• technologies,
• the aspirations and requirements of farm families.

2.5 Farmers respond to the demands deriving from all of these in their farm management decisions which, in turn, affect environmental performance and outcomes. In order to make decisions, farmers use information. They do so, whether implicitly or explicitly, as they interpret policy or market signals, consider the adoption of new technologies, and make household decisions opportunities.

2.6 Given the importance of the Common Agricultural Policy to public debate on agriculture and its apparent impact on environmental management, it is not surprising that NGOs have focused a great deal of attention on the CAP in their campaigning during recent years (e.g. WWF 1999). Now with the broad parameters of the CAP fixed for a further six years, even though the outcome of the Agenda 2000 negotiations was unsatisfactory in so many respects, there is the opportunity to seek to influence other elements which influence environmental performance in agriculture. But there are added reasons for considering the AKS at this time as indicated in 2.2 above.

The UK AKS

2.7 The AKS is far from uniform across the UK. This is not a result of recent devolution of powers to the Scottish Parliament and the Welsh Assembly, for substantial differences existed prior to constitutional reform. There are closed arrangements operating in Northern Ireland and, to a somewhat lesser extent in Scotland. In a closed AKS, the system is organised primarily within a single government agriculture department operating at all levels of the agricultural knowledge system with very little input from other organisations. An open system, as in England and Wales, is more complex involving a wide range of influences and organisations, not necessarily all tied into a single central government department.

2.8 The trend in all countries is towards an increasing pluralism and fragmentation. At present the Northern Ireland system remains the most closed of the systems but even here, as in Scotland, the system is more open than it used to be. There are two prime reasons for this. First, the environmental movement is growing in stature and influence. Secondly, increasing agricultural diversity means that the solutions for particular problems are no longer necessarily to be found within the research or advisory capacity of the traditional closed systems.

2.9 Fragmentation is a key theme in this report and forms the focus for the next three chapters. The AKS is potentially fragmented both vertically and horizontally. Vertically it may be fragmented where mechanisms and/or resources are inadequate to ensure a flow of information and interaction between the different levels of the system. In particular, this
concerns flows of information from scientific research downwards, though it is important to recognise that the flow should not only be conceptualised as downwards.
3. Networking Scientists, Advisers and Farmers: The challenge of vertical fragmentation

Technology Transfer

3.1 This chapter considers what is often characterised as the technology transfer problem. This is not an issue confined to agriculture. On the contrary, for most of the post-war period there has been debate and discussion about this issue across the the UK economy. A deep rooted perception of British intellectual culture is that while there has long been a high quality science base there is inadequate application of science in practical technological development. Some have identified this as a peculiarly British, even English, problem linked to a perceived distaste for industry and trade within our culture over the last century (e.g. Wiener 1981). However, this interpretation has been strenuously refuted (Edgerton 1996) and agriculture provides a good example of a sector where, in the immediate post-war years, it is difficult to discern a technology transfer problem. Both the closed systems of Northern Ireland and Scotland and the open system of England and Wales allowed for a relatively smooth transfer of ideas and developments. In the 1970s, research funding and priorities were co-ordinated centrally by a Joint Consultative Organisation representing MAFF and the Agriculture Research Council (ARC). This allowed for a reconciliation of research objectives. Applied research and development was funded by MAFF through ADAS and more basic research through the ARC research institutes (RIs) with both MAFF and ARC funding. ADAS often tested and trialled work emanating from RIs. Opportunities for ADAS to disseminate results and innovations to farmers were available through events on its experimental husbandry farms, news-sheets, technical bulletins and advisory visits. All of these were freely available to all farmers. That is no longer the case. The changing status of ADAS after 1986, culminating in its privatisation in 1997, broke this communication chain, seemingly irreversibly.

3.2 At the same time the world of agricultural science has also undergone changes. The cosy relationship, once enjoyed by the research institutes with their sponsoring research council and with MAFF, has been transformed by new rules of competition and by changing research priorities. Research institutes, such as the Institute of Grassland and Environmental Research (IGER) and the Institute of Arable Crops Research (IACR), both once dedicated almost exclusively to MAFF and ARC funded work on grassland and cropland productivity respectively, now boast funding from several public and private sector sources (see Figure 3.1).
**Figure 3.1 IGER Funding 1998/99**

- **European Union**: 2%
- **MAFF**: 45%
- **Industry**: 10%
- **BBSRC Strategic Grant**: 22%
- **BBSRC Competitive Awards**: 3%
- **Other sources**: 18%

**Figure 3.2 IACR Funding 1998/99**

- **MAFF**: 26%
- **Industry**: 15%
- **BBSRC Competitive Awards**: 11%
- **BBSRC Strategic Grant**: 30%
- **European Union**: 10%
- **Other sources**: 8%
Figure 3.3 MAFF Environment Group Spend 1999/2000
3.3 There has been a considerable shift in emphasis in the research undertaken by the RIs in recent years too. Whilst it would be a mistake to say that production issues no longer dominated research programmes in the institutes, much research is concerned with environmental issues either centrally or has potential for improved environmental management.

3.4 MAFF, still an important provider of funds for research despite cuts in its research budget, funds a significant programme of agri-environmental research work in the institutes and elsewhere. In 1999/2000 MAFF’s Environment Group is funding 26 million pounds out of a total budget of £125 million. Its distribution is shown in Figure 3.3.

3.5 Some examples of the kind of research currently funded under the Environment Group programme are as follows:

- Seeds mixtures for reversion of arable land to species-rich grassland (ADAS)
- The restoration of diversity to agriculturally improved meadow grassland (Newcastle University)
- Practical techniques to increase the biodiversity of agriculturally improved grassland (Institute of Terrestrial Ecology)
- Designing crop/plant mixtures to provide food for seed-eating farmland birds in winter (Allerton Research and Educational Trust & British Trust For Ornithology)
- Development of profitable and robust dairy systems with an acceptable balance of emissions (ADAS)
- Studies of on-site crop residue management strategies to control N losses to the environment (Horticulture Research International)
- Decision support system for nitrogen fertiliser management on grassland ((Institute of Grassland and Environmental Research)
- Organic Farming: Biological control using Nematodes for Slug Control (Institute of Arable Crops Research)
- Integrating Farm Management Practices with Brown Hare Conservation in Pastoral Landscapes (Bristol University)

3.5 At nearly 21% of MAFF’s research expenditure, the Environment spend perhaps appears modest though it represents an increase from 17.5% in 1992/93. However this is misleading, because the nature of research funded under other MAFF programmes has changed during the same period and a growing proportion of these research projects contain strong environmental elements. Some examples of MAFF funded research outside of the Environment Group’s programme are as follows:

- Integrated and lower input crop management (Institute of Arable Crops Research)
• Identification and exploitation of new sources of disease and pest resistance in oats (Institute of Grassland and Environmental Research)

• Towards identifying favourable soil types and associated cropping systems for precision farming (ADAS)

• Manipulation of natural enemies of pests in cereals and other arable crops (Institute of Arable Crops Research)

• Identification of a synergistic complex of natural enemies for biocontrol of aphids on cereals (Horticulture Research International)

• Integrated weed management in winter cereals - mechanical weed control (Silsoe Research Institute)

• Development of efficient, biologically sustainable and economically viable upland beef systems (Institute of Grassland and Environmental Research)

• Design of reliable white clover for sustainable agriculture (Institute of Grasslands and Environmental Research)

**Vertical fragmentation**

3.5 Vertical fragmentation refers to a lack of clear mechanisms and resources to link agri-environmental science findings to varying forms of extension. This is not a new issue and lies at the heart of a much wider debate within the UK polity about the science base, its responsiveness to industry needs, and the mechanisms that exist for technology transfer.

3.6 Vertically, the relationship between the different levels in the English AKS is weak and, arguably, weakening still further. This is routinely referred to as the technology transfer problem, with inadequate mechanisms for the delivery of research outputs (either as new knowledge or new technologies) to farmers through demonstration or via advisers, trainers and educationalists.

3.7 The technology transfer problem arising from vertical fragmentation has been compounded by the changing nature of the technologies deriving from publicly funded research. R&D primarily oriented towards production techniques is likely to result in technologies that can be developed and marketed within the commercial agricultural supply sector. New machines, agro-chemical products or plant breeds marketed by commercial companies provided a ready solution to the technology transfer problem under productivist agricultural conditions. Even under these conditions, the state provided substantial underpinning to the R&D process through R&D conducted by ADAS. ADAS also had close links with the private sector companies who ultimately market the new products. Of course, the potential for this dynamic still exists as is clearly evident in the debate on GMOs. However, there has been a substantial shift in publicly funded R&D away from production-oriented science and technology towards science designed to deal with concerns over environmental issues, animal welfare and food safety. Whilst it might not be axiomatic that such issue-driven research gives rise to no commercial application, such is often the case. Moreover, even if the results of environmental research might have
potential commercial benefits to farmers, this is now less likely to derive from the purchase of new products. For example, research designed to reduce inputs within Integrated Farming Systems research may well achieve environmental benefits at the same time as reducing farmers’ expenditure on fertilizers or pest control products (Morris and Winter 1999). To reap such benefits, farmers require technical knowledge rather than new capital items. Knowledge-rich agriculture lies at the heart of moves towards sustainability.

*Overcoming vertical fragmentation*

3.8 There is now much greater recognition of the problem of vertical fragmentation than when the research for *Networks of Knowledge* was undertaken in 1994. A number of important initiatives have been developed by MAFF and/or the RIs and some of these are described in the boxed information. Although there is clearly some potential overlap with extension projects outlined in Chapters 4 and 5, the initiatives described here are distinctive in that they are designed to disseminate the results of publicly funded research.
IGER’s Grassland Technology Transfer Programme
With 5b funding, the Institute of Grassland and Environmental Research is taking its research findings out to farmers in an innovative scheme in central Wales. IGER has established a network of ‘Focus farms’ to implement recommendations resulting from IGER research. Meetings of local farmer groups associated with these have already resulted in a number of changes in farm practice.

ADAS Livestock Manure Demonstration Farms
ADAS is demonstrating the results of MAFF R&D on managing animal manures as a nutrient resource at four commercial demonstration farms in Cheshire, Yorkshire, Worcestershire and Essex. The farms have all implemented a farm waste plan and best practice is being encouraged through on-farm demonstrations, technical workshops, meetings, leaflets and the media.

Booklets on Manure Research
A team of research scientists from ADAS, IACR and the Silsoe Research Institute has summarised much of the manures R&D funded by MAFF over the past ten years in three booklets aimed at farmers. The booklets cover manure applications to grassland and arable land, and how to select and operate a suitable spreading system. They contain worked examples on how farmers can save money by better use of livestock manures and also comply with the codes of good agricultural practice.

A Decision Support System for Manure Applications
ADAS has developed a software package, MANNER, for farmers and consultants using MAFF funded research findings. The decision support system helps farmers to calculate more accurately manure Nitrogen requirements for growing crops, thus improving utilisation of manures.
4. Horizontal Fragmentation: A Re-assessment of the Traditional Providers of Agri-Environmental Advice

4.1 One of the main aims of this chapter is to identify who is providing environmental advice to farmers and to assess the relative importance of the different non-commercial organisations in providing this advice. In addition the report will also provide an assessment of how the provision of environmental advice has changed since the publication of the previous WWF report in 1994. It is important to note at this point that it has not always possible to provide a direct comparison of advice provision as some of the organisations have restructured the way they provide environmental advice. However, it is possible to obtain a broad picture as to whether environmental advice to farmers has increased or diminished over the past 5 years.

4.2 Having looked at the development of advice over the last 5 years, we then examine new providers of advice that have emerged during this period. This will include an exploration of new sources of funding for farm conservation advice. The chapter concludes with an evaluation of the effectiveness of farm conservation and monitoring procedures used by the non-commercial organisations themselves.

**Horizontal fragmentation**

4.3 Horizontal fragmentation relates largely to the extension sector. There is differentiation in the operation of the AKS spatially by region and by sector. We find a plethora of organisations and initiatives devoted to some extent to the provision of agri-environmental information and advice to farmers. The situation as it emerged in the 1970s and early 1980s saw ADAS, the front line agricultural advisory service joined by the Farming and Wildlife Advisory Group (FWAG) and local authorities (including national parks) as providers of advice to farmers. This inevitably led to significant geographical discrepancies in the quantity and quality of advice available. Since then the situation has become considerably more geographically complex for two reasons. First, the emergence of geographically specific agri-environmental schemes, such as Environmentally Sensitive Areas (ESAs), introduced intensive systems of information provision in specific areas. Secondly, areas designated as 5b areas under the European structural programme have seen burgeoning of schemes with an environmental advice element. Table 4.1 shows the current complexity of agri-environmental advice provision in England in comparison with the rest of the UK.
Table 4.1 Non-Commercial Providers of Agri-Environmental Advice to Farmers in the UK

<table>
<thead>
<tr>
<th>Major Providers of Advice</th>
<th>Minor Providers of Advice</th>
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<tbody>
<tr>
<td><strong>England</strong></td>
<td></td>
</tr>
<tr>
<td>ADAS</td>
<td>Countryside Agency</td>
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<tr>
<td>Farming &amp; Wildlife Advisory Group</td>
<td>English Nature</td>
</tr>
<tr>
<td>FRCA</td>
<td>Environment Agency</td>
</tr>
<tr>
<td>Objective 5b schemes</td>
<td>Game Conservancy Trust</td>
</tr>
<tr>
<td>Organic Conversion Information Service</td>
<td>Forestry Authority</td>
</tr>
<tr>
<td>Local Authorities</td>
<td>NFU/CLA</td>
</tr>
<tr>
<td>National Parks</td>
<td>RSPB</td>
</tr>
<tr>
<td>Wildlife Trusts</td>
<td></td>
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<tr>
<td><strong>Wales</strong></td>
<td></td>
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<tr>
<td>ADAS</td>
<td>Environment Agency</td>
</tr>
<tr>
<td>Coed Cymru</td>
<td>Farming &amp; Wildlife Advisory Group</td>
</tr>
<tr>
<td>Countryside Council for Wales</td>
<td>Forestry Authority</td>
</tr>
<tr>
<td>FRCA</td>
<td>Game Conservancy Trust</td>
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<tr>
<td>National Parks</td>
<td>Local Authorities</td>
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<tr>
<td>Objective 5b initiatives</td>
<td>NFU/CLA/CLUW</td>
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<tr>
<td>Organic Conversion Information Service</td>
<td>Objective 5b initiatives</td>
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<td></td>
<td>RSPB</td>
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<td></td>
<td>Wildlife Trusts</td>
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<td><strong>Scotland</strong></td>
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<tr>
<td>Farming &amp; Wildlife Advisory Group</td>
<td>Forestry Authority</td>
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<td>Objective 5b initiatives</td>
<td>Game Conservancy Trust</td>
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<tr>
<td>Scottish Agricultural College</td>
<td>NFUS/SLF</td>
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<td></td>
<td>Objective 5b initiatives</td>
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<td>RSPB</td>
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<td>Scottish Natural Heritage</td>
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<td>SEPA</td>
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<td></td>
<td>Wildlife Trusts</td>
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<tr>
<td><strong>Northern Ireland</strong></td>
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<tr>
<td>Department of Agriculture (NI)</td>
<td>Department of Environment (NI)</td>
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<td></td>
<td>Farming &amp; Wildlife Advisory Group</td>
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<td></td>
<td>RSPB</td>
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<td></td>
<td>Ulster Farmers Union</td>
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<td>Ulster Wildlife Trust</td>
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</table>

Development of advice since 1994

4.4 There appears to have been a modest increase of funding of some advice due to the continued expansion of FWAG and new initiatives such as the government funded Organic Conversion Information Service (OCIS). Other organisations are also increasing their contribution to the provision of advice at the county level, such as Wildlife Trusts.
and some Objective 5b projects. However, as we will see later, there have been cuts in the provision of local government advice.

4.5 Objective 5b projects, which benefit from EU funding, appear to have made a significant contribution to the provision of environmental advice to farmers. Due to the nature of the designations, however, this advice has been confined to specific geographical areas, based on economic rather than environmental criteria.

**The Agricultural Departments**

**FRCA**

4.6 The FRCA (Farming and Rural Conservation Agency) was formed in 1997 to conduct work formerly carried out by the MAFF Land Use Planning Unit or by ADAS prior to privatisation. It is responsible for assisting government in the design, development and implementation of policies on the integration of farming and conservation, environmental protection and the rural economy.

4.7 Within the FRCA there are 119 project officers and assistant project officers, who deal with government environmental schemes, such as ESAs and CCS. They provide farmers with comprehensive technical advice about the schemes and their practical implementation. FRCA were unable to provide us with a precise figure for the advice element within FRCA project management, but it is estimated that approximately 30% of a project officer’s time is spent in advice provision. This equates to 36 person-years for the provision of free conservation advice.

4.8 In 1998/99, FRCA officers made 14,578 free conservation advisory visits to farmers in connection with ESAs and the Countryside Stewardship Scheme throughout England. Most of these included one-off visits, with very few repeat visits. In addition to these schemes, FRCA officers are also responsible for developing suitable Habitat Scheme applications from farmers and for the 32 Nitrate Sensitive Areas to advise on ways of reducing nitrate leaching. During 1998/99 1,210 advisory visits were made to farmers in the Habitat Scheme and Nitrate Sensitive Areas.

4.9 Not all the advice by FRCA officers is offered on a whole farm basis. Within ESAs advice is based on a cross-section of whole farm and single field features. On the South Downs, for example, an application might only concentrate on the scarp slope, rather than the whole farm. The FRCA officer will also give unsolicited advice on other parts of the farm to ensure that conservation opportunities are not missed, such as derelict ponds or species rich hedgerows.

**Countryside Council for Wales (CCW)**

4.10 In Wales, the Countryside Council for Wales operated the Tir Cymen scheme, until April 1999. This was a whole farm experimental scheme that paid farmers for a selection of environmental goods such as heather, moorland, flower rich pastures and meadows as well as landscape features and public access. It was only available in 3 pilot areas and has now been replaced, along with ESAs, the Habitat, Moorland and Countryside Access Schemes, by Tir Gofal, a country-wide scheme.
4.11 Tir Gofal operates under the Common Agricultural Policy agri-environment measures, jointly funded by the European Union and the UK Government. It is managed by the Countryside Council for Wales on behalf of the Secretary of State and in partnership with the Farming and Rural Conservation Agency (FRCA) and the National Park Authority in Snowdonia.

4.12 There are 17 full-time project officers throughout the 5 areas of the Tir Gofal scheme. The officers will undertake advisory visits to farms once scheme applications have been submitted. As the scheme only started operating in April 1999, it is too early to tell how much of the project officers’ time will be devoted to providing environmental advice to farmers.

Scottish Agricultural College (SAC)

4.13 Since 1995 there has been a substantial downsizing of SAC staff to accommodate the reductions in Scottish Office grant-in-aid. The relationship with the Scottish Office is now conducted on a more contractual basis. SAC continue to receive some Scottish Office support for advisory work under contract in the LFA and Crofting Areas. However, much of the advisory work is moving onto a wholly commercial basis.

4.14 There are 78 professional advisors in SAC compared to 83 in 1993 and part of the time they are contracted to the Scottish Office to deliver advisory activities. The number of free environmental visits made by SAC in 1998/99 totalled 1,864. Their delivery of free environmental advice to farmers has diminished over the past 5 years. This is partly because plan preparations for schemes, such as CSS and ESA, are no longer provided for free but are paid for by the client. The following figures were provided by the Scottish Office and indicate SAC’s contribution to environmental advice for the year 1998/99:

- free conservation advice accounted for 4.5 person years.
- free pollution advice accounted for 4.7 person years
- free woodland advice accounted for 1.3 person years
- free organic advice accounted for 1.6 person years
- ESA planning and management advice 4.3 person years

4.15 All the advisors are aware of the necessity to integrate farming and the financial needs and objectives of the client and are all instructed to take a whole farm approach.

4.16 In Scotland, the Scottish Office issued in November 1998 a consultation paper on Conservation Advice for Farmers and Crofters. Submissions were required in March 1999 and a Government response was expected by early Summer 1999. However at the time of writing (March 2000) nothing further has been forthcoming. As part of this research we obtained a number of the submissions to the consultation exercise and these were consulted in the development of our concluding chapter.

Department of Agriculture Northern Ireland (DANI)

4.17 Since the previous report a Countryside Management Division has been established within the Department of Agriculture which is dedicated to developing environmentally
sustainable farming. It acts as a one-stop shop for all issues at the agri-environment interface and is by far and away the major provider of general advice in Northern Ireland. As a result over the last 5 years the role of DANI in providing farm conservation advice has increased.

4.18 There are currently 43 Countryside Management advisers whose time is fully devoted to provision of environmental advice. In any one year the advisers work with around 6,000 clients. The staff offer advice on all aspects of farming related to the countryside – its landscape, wildlife, recreational and natural resource values. As far as possible a whole farm approach is taken. The following is the estimated staff input for the Countryside Management Division during 1999/00:

- 9% education and training
- 23% biodiversity, waste and nutrient management initiatives
- 48% delivery of statutory schemes
- 20% technical policy advice

4.19 The last review reported that general conservation advice outside ESAs was limited in Northern Ireland and our research reveals that to some extent this is still the case. However, there are an increasing number of initiatives directed at the wider countryside, such as waste management, nutrient management and hedgerow initiatives. Also a new Countryside Management scheme was launched in 1999 which will operate throughout the country.

Local authorities

4.20 We now turn to the local authorities throughout the UK. A postal survey, similar to the one carried out in 1993, was conducted of all county councils. The results suggest that the provision of environmental advice by councils may have diminished during the past five years.

England

4.21 Of the 62 English Councils contacted 36 responses were received, achieving a response rate of 58%, similar to that obtained in 1993. The survey revealed that most of the councils had staff offering environmental advice to farmers, although the majority of these had less than a full-time person engaged in such a role. Seven councils claimed to have no staff employed in giving environmental advice. Those with the greatest number of staff did not necessarily carry out more advisory visits or have more man hours on the farm. Much depended on the number of ‘dedicated’ staff with a specific remit for offering farm conservation advice.

4.22 It is evident from Table 4.2 that since the last report wildlife conservation and habitat creation are receiving greater priority from the County Councils. Also it appears that advice to farmers on pollution control has remained a low priority.
Table 4.2  Type of advice provided by Local Authorities in England and Wales in 1993 and 1998

<table>
<thead>
<tr>
<th>Type of advice</th>
<th>1993</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Priority Advice</td>
<td>No. of times mentioned</td>
</tr>
<tr>
<td>Wildlife creation</td>
<td>4</td>
<td>28</td>
</tr>
<tr>
<td>Habitat creation</td>
<td>5</td>
<td>28</td>
</tr>
<tr>
<td>Ecological assessments</td>
<td>1</td>
<td>19</td>
</tr>
<tr>
<td>Woodland management</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Pollution control</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>Landscape enhancement</td>
<td>14</td>
<td>30</td>
</tr>
<tr>
<td>Whole farm plans</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Other *</td>
<td>4</td>
<td>14</td>
</tr>
</tbody>
</table>

* Other category includes restoration of orchards, access, recreation, habitat management, archaeology, grant brokerage.

Councils could mention more than one category

4.23 Many of the County Councils were unable to provide information on the number of advisory visits made by their staff. However, of those that could provide figures, in few cases did the number of visits per year exceed 100. Without an in-depth analysis of the type of visit, which is beyond the scope of this study, it is not possible to assess the comprehensiveness of these visits. In some cases it may have been a lengthy whole farm plan visit and in others a brief conversation concerning an access agreement with a farmer.

4.24 As identified in the previous report, grants are pivotal to the farm conservation advice offered by the County Councils, most of which are the Councils own grant schemes. However, as Table 4.3 reveals, some of the councils claim to have reduced their own grants since the last review and a greater number now have no grant schemes to offer. This was considered particularly detrimental as it reduced the initial means of access onto a farm to generate interest and identify further opportunities for farm conservation. Also as a result of government restructuring over the last five year some conservation posts have been lost. These staff cuts and grant reductions have meant that over half of the Councils have witnessed a reduction in the overall level of conservation advice provided to farmers and landowners.
Table 4.3  Proportion of Advice Offered in Connection with English Council’s own Grant Schemes in 1993 and 1998

<table>
<thead>
<tr>
<th>Proportion of advice</th>
<th>1993</th>
<th>1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>4</td>
<td>11</td>
</tr>
<tr>
<td>20% or less</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21 – 39%</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>40 – 59%</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>60-79%</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Over 80%</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Not specified</td>
<td>3</td>
<td>3</td>
</tr>
</tbody>
</table>

4.25 As well as a reduction in grants, the nature of advice offered by the English councils over the past five years has shown a shift in emphasis. Given the general reduction in grant aid, half of the councils appear to be targeting their advice to specific areas, such as local projects, AONBs or Heritage Coasts. This suggests that the provision of advice may be unevenly distributed within these counties. By contrast, some counties are taking a wider view through their involvement in Biodiversity Action Plans. Most BAPs are at an early stage and their implementation by councils is currently evolving. Some councils feel it will be difficult to translate advice into action with the limited finances available. Others, such as Kent County Council, are adopting a co-ordinating role in the action and monitoring of the BAP. For many councils one impact of BAPs will be the introduction of modest changes to grant schemes focusing on delivering BAP targets. The research revealed that the councils are also adopting a more strategic view of the wildlife assets of the county through greater involvement in contributing to other organisations or in more formal partnership projects. For example, nearly all the county councils offered financial assistance or assistance in kind to other conservation organisations. In particular FWAG is recognised as providing a valuable service by councils who, in some instances, contribute generously to the organisation.

**Wales**

4.26 Direct comparison in Wales with results from the 1993 survey is not possible due to local government reorganisation. The number of councils in Wales has more than doubled since the last survey. The response rate to the postal survey was high. Questionnaires were sent to 20 councils with a rural area and 14 replies were received.

4.27 The questionnaires revealed that few Welsh council staff were involved in providing conservation advice full-time. However, they visited a large number of farms each year. The majority of these visits were by Coed Cymru officers and were therefore dominated by woodland advice.

4.28 Ten of the councils provided council wide coverage in terms of advice provision, which suggests that advice is evenly distributed within these counties. Of those targeting their advice, one concentrated on the Gwent levels, one on the Maelor area and Council smallholdings and the other concentrated on land of high landscape and ecological interest and relict landscapes. Four of the councils gave advice in connection with grant schemes,
usually the Woodland Grant Scheme and four in relation to grants offered by the council itself.

Scotland

4.29 Of the 27 Scottish authorities sent a questionnaire 15 responded, a response rate of 55%. Almost half of these had no involvement in providing environmental advice to farmers and relied on the local FWAG officers to provide this service. For example, Scottish Borders Council has increased the involvement of FWAG in their Tree Grant Scheme to reduce site visits paid by council personnel. Of the remaining councils most had less than five staff involved in conservation advice. In terms of time spent with farmers the majority employed less than five per cent of a person per year. These figures suggest that the direct provision of conservation advice to farmers by the Scottish councils has changed little since the last report and their contribution remains minimal. All Councils offered free advice on a council wide basis with the exception of one council that concentrated its efforts adjacent to sensitive sites and Country Parks.

4.30 It is evident that an increasing number of Scottish authorities are grant aiding projects of benefit to the farming community, both through in-house grant schemes and as a partner in wider initiatives. The questionnaire revealed that half the authorities gave advice in association with their own grant schemes. Examples of such schemes include the Scottish Borders Tree Grant Scheme and the amenity Tree Planting Grant in Dumfries and Galloway. In the case of the Scottish borders more money for initiatives, such as its Tree Grant Scheme, has become available through EAGGF grant money. Examples of partners include the Scottish Natural Heritage, Scottish Enterprise Tayside and the Cairngorms Partnership. The comprehensive West Lothian plan (Planning for Biodiversity Action in West Lothian) succinctly states the increasing partnership role of councils

“In the management of its own land, through education duties, economic development programmes, the determination of planning applications and influence on investment, the principle of economic sustainability is now fundamental. Therefore, through a commitment to biodiversity action the Council accepts its partnership role.

The Scottish Office has produced a comprehensive guide to the biodiversity delivery mechanisms available in Scotland, both at the national and local level……..

West Lothian Council can assist, provide contacts, and, in some cases help but then so can many other statutory and voluntary groups. To be creative and responsive it will be as much to ensure that there are supportive mechanisms in place for individuals and groups as will be sources of money..........”

4.31 The questionnaire revealed that advice given to farmers in Scotland by local authorities has remained the same or diminished over the last 5 years. However, it is evident that while direct advice has diminished, advice provision has increased indirectly as a result of initiatives with other agencies.

Northern Ireland
4.32 Questionnaires were sent to 24 councils in Northern Ireland and responses were received from 8, a response rate of 33%. The questionnaires revealed that the involvement by borough councils in environmental advice remains as limited as it was five years earlier. In Northern Ireland the main responsibility for advice to farmers lies with the Department of Agriculture (Northern Ireland) which offers a comprehensive service. The majority of councils refer any requests for advice from farmers direct to DANI and this relationship is seen as working well.

4.33 Nonetheless, six of the councils had some involvement with farmers. Of these, three provided a very limited service, reacting to one-off queries, usually about pollution control. Staff time devoted to farmers was less than 3% of one person in total in these three councils and was offered primarily by Environmental Health personnel. Three of the councils have developed a greater role in advice provision since the last report. It is too early to say whether this process will gain momentum but certainly there is greater evidence of networking with other organisations and awareness of environmental issues. Biodiversity and Local Agenda 21 involvement have had some impact on the agricultural community. A number of posts in the councils have been funded by money received from Landfill Tax credits, particularly through the Ulster Wildlife Trust.

4.34 In general terms, networking in Northern Ireland is at a preliminary stage. There is not the plethora of wildlife organisations that exist on the mainland nor the large EU funded conservation projects. A couple of the councils are making tentative moves into conservation type projects with the Ulster Wildlife Trust, primarily utilising Landfill Tax credits, but these, as yet, have little impact on the agri-environment issues. Staff resources devoted to conservation issues are minimal or non-existent, a contributing factor is the lack of development in biodiversity planning. DANI remains the important source of agri-environment advice in Northern Ireland and is seen to provide a good service.

4.35 Responses to the questionnaire were received from 9 National Parks and 2 areas with special status in England and Wales. There is still considerable variation in the emphasis placed upon farm conservation advice between different National Parks. Table 4.4 provides a comparison of farm conservation advice between 1993 and 1998 and shows that Snowdonia, the Peaks, Yorkshire Dales and North York Moors offer a significant advisory service to farmers. It is important to note that many of the farm visits presented in Table 4.4 will be return visits, possibly by several different specialist officers to cover different aspects of conservation.

4.36 Overall it is difficult to estimate from Table 4.4 whether the provision of farm conservation advice by National Parks has diminished or increased over the past five years. There has been a dramatic decline in advisory input offered by Dartmoor National Park, due to the introduction of the Dartmoor ESA in 1994, which has restricted the Park’s advisory work to habitats outside the ESA. The Lake District National Park has also seen a decline due to reduced grant funds and increases in the availability of advice from other sources, such as ESA project officers, the Cumbrian Broadleaves Project, Cumbria Farm Link and the Forestry Authority. However, five of the National Parks noticed an increase in the provision of conservation advice to farmers, including a greater involvement in grant aid work and agri-environmental schemes.
Table 4.4  The Provision of Farm Conservation Advice by National Parks in 1993 and 1998

<table>
<thead>
<tr>
<th>Park</th>
<th>Number of advisory staff 1993</th>
<th>Number of advisory staff 1998</th>
<th>Total advisory input 1993</th>
<th>Total advisory input 1998</th>
<th>Estimated no of farm visits p.a. 1993</th>
<th>Estimated no of farm visits p.a. 1998</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brecon Beacons</td>
<td>3</td>
<td>4</td>
<td>0.60</td>
<td>1.10</td>
<td>N/A</td>
<td>300</td>
</tr>
<tr>
<td>Broads Authority</td>
<td>4</td>
<td>5</td>
<td>0.45</td>
<td>0.75</td>
<td>55</td>
<td>500</td>
</tr>
<tr>
<td>Dartmoor</td>
<td>6</td>
<td>5</td>
<td>2.80</td>
<td>0.83</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Exmoor</td>
<td>5</td>
<td></td>
<td>0.85</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lake District</td>
<td>4</td>
<td>4</td>
<td>N/A</td>
<td>0.30</td>
<td>N/A</td>
<td>100</td>
</tr>
<tr>
<td>North York Moors</td>
<td>5</td>
<td>9</td>
<td>2.25</td>
<td>2.15</td>
<td>365</td>
<td>800</td>
</tr>
<tr>
<td>Northumberland</td>
<td>3</td>
<td>5</td>
<td>1.25</td>
<td>2.20</td>
<td>150</td>
<td>150</td>
</tr>
<tr>
<td>Peak</td>
<td>6</td>
<td>5</td>
<td>4.40</td>
<td>4.20</td>
<td>1,110</td>
<td>800</td>
</tr>
<tr>
<td>Snowdonia</td>
<td>6</td>
<td>6</td>
<td>5.50</td>
<td>5.80</td>
<td>800</td>
<td>280</td>
</tr>
<tr>
<td>Yorkshire Dales</td>
<td>6</td>
<td>7</td>
<td>2.35</td>
<td>3.25</td>
<td>400</td>
<td>500</td>
</tr>
<tr>
<td><strong>Sussex Downs</strong></td>
<td><strong>6</strong></td>
<td></td>
<td><strong>0.20</strong></td>
<td></td>
<td></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

**NOTES.**
1. These figures are approximations in many cases. The figures were all provided by the Parks themselves.
2. Some Park authorities referred to the work of Park wardens and rangers; others did not. For the purposes of this table they have been excluded from the analysis.
3. Some Parks provided data on contacts with farmers on archaeology, farm buildings, and planning matters; all these have been excluded for the purposes of this analysis.
4. Some Parks provided on administrative back-up to farm advisory services; these data have been excluded from the analysis.

4.37 As identified in the previous report, all the Parks provided advice to farmers and all offered advice on wildlife conservation, habitat creation, ecological assessments, woodland management and landscape enhancement, with the main focus on woodland management. Also all parks provide advice in association with grant schemes, with nine offering their own schemes, such as the Lake District Countryside Conservation Grant Scheme. Individual rangers also have separate budgets for conservation work.

4.38 Seven of the National Parks did not target specific areas within the designated areas for advice, although some occasionally had priority areas in connection with special
projects. For example, in the Lake District priority is given to habitat restoration in areas with combined red and grey squirrels.

4.39 The role of the National Parks in the provision of conservation advice appears to be as unclear as it was five years ago. Two of the Parks mentioned that their role had increased as information providers on agri-environment schemes. One respondent felt that the role of National Parks needs formalising “the National Parks should act as agent for a variety of bodies within their area and be funded to do so.”

FWAG

4.40 The contribution made by FWAG in Wales and Northern Ireland is the same as that reported five years ago. In Wales, although there is some group activity, there is no advisory cover and in Northern Ireland there is no FWAG activity.

4.42 The provision of farm conservation advice by FWAG in England has increased markedly since the last report. During 1998/99, FWAG advisers made 4,723 visits in England compared to 3,500 in 1993/94. This covers approximately 3% of all registered agricultural land in England. Initial advisory visits by FWAG advisers to farmers are free and funded by MAFF/DETR, thereafter farmers are encouraged to pay for advisory visits.

4.43 There has been a general increase in the number of FWAG advisers since 1994, with 54 advisers in England and 24 in Scotland, compared to 35 and 16 respectively in 1994. As a result of this increase in staff numbers, the geographical distribution of FWAG advice input has improved since the last report. For example, there is now coverage in Hampshire, Cumbria and Nottinghamshire and Northumberland. However, advice is still unevenly distributed in that some counties are better served than others. For example there are 3 FWAG officers in Herefordshire, compared to only 1 in Hampshire.

4.44 Table 4.5 presents a direct comparison of the type of environmental advice provided by FWAG in England in 1992/93 and 1998/99. As the table indicates there has been an overall increase in the frequency of environmental advice provided since 1992/93. There have also been some significant shifts in the type of environmental advice provided, with an increase in advice relating to agriculture and its environmental impacts, rather than just concentrating on conservation management alone. For example, advice on pollution control and pesticide and fertiliser management has increased significantly. The only area of advice that has witnessed any significant decline is that relating to woodlands. New areas of advice include old orchards, statutory and permissive access and assisting with LEAF Audits.

4.45 The main sources of funding for FWAG in England and Scotland are shown in Figures 4.1 and 4.2., which indicate that FWAG is no longer so dependent on funding from donations. In 1992/93 donations contributed to 30.7% of income compared to 9% in 1998/99. There has been a shift towards extra Government funding. However, the level of core government funding is now virtually static and combined with a continued increase in adviser numbers the reliance on chargeable income and funding for discrete projects such as those with the Environment Agency has increased. A number of country councils continue to offer financial support to FWAG.
### Table 4.5 Comparison of FWAG Advice in England between 1992/93 and 1998/99

<table>
<thead>
<tr>
<th>ADVICE GIVEN ON:</th>
<th>1992/93</th>
<th>1998/99</th>
<th>Difference</th>
<th>% difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>% of cases</td>
<td>Frequency</td>
<td>% of cases</td>
</tr>
<tr>
<td>Landscape Issues</td>
<td>2,154</td>
<td>71%</td>
<td>3,123</td>
<td>66%</td>
</tr>
<tr>
<td>Woodland Management</td>
<td>787</td>
<td>26%</td>
<td>1,173</td>
<td>25%</td>
</tr>
<tr>
<td>Woodland Planting</td>
<td>764</td>
<td>25%</td>
<td>803</td>
<td>17%</td>
</tr>
<tr>
<td>Shelterbelt Planting</td>
<td>338</td>
<td>11%</td>
<td>298</td>
<td>6%</td>
</tr>
<tr>
<td>Amenity Trees</td>
<td>1,124</td>
<td>37%</td>
<td>1,134</td>
<td>24%</td>
</tr>
<tr>
<td>Hedge Trees</td>
<td>1,201</td>
<td>39%</td>
<td>2,668</td>
<td>56%</td>
</tr>
<tr>
<td>Scrub Management</td>
<td>646</td>
<td>2%</td>
<td>1,303</td>
<td>28%</td>
</tr>
<tr>
<td>Pond Management</td>
<td>770</td>
<td>25%</td>
<td>1,245</td>
<td>26%</td>
</tr>
<tr>
<td>Pond Restoration</td>
<td>523</td>
<td>17%</td>
<td>1,076</td>
<td>23%</td>
</tr>
<tr>
<td>Pond Creation</td>
<td>621</td>
<td>20%</td>
<td>862</td>
<td>18%</td>
</tr>
<tr>
<td>Watercourse</td>
<td>765</td>
<td>25%</td>
<td>2,564</td>
<td>54%</td>
</tr>
<tr>
<td>Wetland Management</td>
<td>594</td>
<td>20%</td>
<td>1,208</td>
<td>26%</td>
</tr>
<tr>
<td>Improved Grassland</td>
<td>555</td>
<td>18%</td>
<td>1,400</td>
<td>30%</td>
</tr>
<tr>
<td>Unimproved Grassland</td>
<td>1,092</td>
<td>36%</td>
<td>2,046</td>
<td>43%</td>
</tr>
<tr>
<td>Wildflowers</td>
<td>438</td>
<td>14%</td>
<td>2,054</td>
<td>43%</td>
</tr>
<tr>
<td>Hedge Management</td>
<td>1,488</td>
<td>49%</td>
<td>3208</td>
<td>68%</td>
</tr>
<tr>
<td>Hedge Planting</td>
<td>757</td>
<td>25%</td>
<td>1,804</td>
<td>38%</td>
</tr>
<tr>
<td>Field Margin Management</td>
<td>807</td>
<td>27%</td>
<td>2,561</td>
<td>54%</td>
</tr>
<tr>
<td>Pesticide Management</td>
<td>657</td>
<td>22%</td>
<td>1,997</td>
<td>42%</td>
</tr>
<tr>
<td>Fertilizer Management</td>
<td>870</td>
<td>29%</td>
<td>2,503</td>
<td>53%</td>
</tr>
<tr>
<td>Pollution Control</td>
<td>281</td>
<td>9%</td>
<td>2,094</td>
<td>44%</td>
</tr>
<tr>
<td>Heather/Moorland Management</td>
<td>35</td>
<td>1%</td>
<td>102</td>
<td>2%</td>
</tr>
<tr>
<td>Shooting</td>
<td>207</td>
<td>7%</td>
<td>513</td>
<td>11%</td>
</tr>
<tr>
<td>Fishing</td>
<td>149</td>
<td>5%</td>
<td>350</td>
<td>7%</td>
</tr>
<tr>
<td>Species conservation</td>
<td>564</td>
<td>18%</td>
<td>2,694</td>
<td>57%</td>
</tr>
<tr>
<td>Drystone walls</td>
<td>143</td>
<td>5%</td>
<td>364</td>
<td>8%</td>
</tr>
<tr>
<td>Archaeological/historical</td>
<td>386</td>
<td>13%</td>
<td>1,425</td>
<td>30%</td>
</tr>
<tr>
<td>GRANTS ADVICE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Farm Woodland Premium Scheme</td>
<td>296</td>
<td>10%</td>
<td>581</td>
<td>12%</td>
</tr>
<tr>
<td>Stewardship</td>
<td>868</td>
<td>29%</td>
<td>3,052</td>
<td>65%</td>
</tr>
<tr>
<td>Habitat Scheme</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>0%</td>
</tr>
<tr>
<td>HIAP</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Moorland Scheme</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>Countryside Premium Scheme</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Environmentally Sensitive Areas</td>
<td>112</td>
<td>4%</td>
<td>136</td>
<td>3%</td>
</tr>
<tr>
<td>Woodland Grant Scheme</td>
<td>827</td>
<td>27%</td>
<td>985</td>
<td>21%</td>
</tr>
<tr>
<td>SNH</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>Local authority grants</td>
<td>1430</td>
<td>47%</td>
<td>939</td>
<td>20%</td>
</tr>
<tr>
<td>Other grants</td>
<td>311</td>
<td>10%</td>
<td>467</td>
<td>10%</td>
</tr>
</tbody>
</table>
FARMING AND WILDLIFE ADVISORY GROUP
BREAKDOWN OF INCOME
1 April 1998 – 31 March 1999
English County Groups

- Sponsorship and charges: 37%
- Subscriptions: 8%
- Interest receivable: 1%
- Donations: 9%
- Grants: 43%

FARMING AND WILDLIFE ADVISORY GROUP
BREAKDOWN OF INCOME
1 April 1998 – 31 March 1999
Scottish Branches

- Sponsorship and charges: 37%
- Subscriptions: 3%
- Interest receivable: 1%
- Donations: 3%
- Grants: 55%
4.46 As well as producing Landwise reports for farmers, FWAG has introduced a new initiative: Farm Biodiversity Action Plans (see Box).

**FARM BAPs**

The Farm BAP initiative has been developed by FWAG, in partnership with Sainsburys. It aims to address environmental issues by encouraging suppliers to consider biodiversity and management of habitats across the whole farm. Following the success of a pilot scheme, the Farm BAPs were launched at a FWAG Conference in October 1997 exclusively to Sainsbury’s suppliers and then in 1998 at the Royal Show for the general public. A FWAG adviser visits farmers and growers interested in commissioning a Farm BAP, surveys the farm and discusses with them the details of the Farm BAP. Together the farmer or grower and the adviser identify four species or habitats appropriate to the farm which are considered to be of national or local importance. The farmer or grower receives a folder containing a profile of each species or habitat, a map of the farm highlighting the areas where each can or could be found and an overview of management options. The accompanying work guide provides a detailed and agreed timetable of short and long term commercial activities. These include managing and enhancing existing features, creating new features and making adjustments to everyday farming operations. The cost of having a Farm BAP prepared for a farmer or grower is £250. By the end of April 1999, 125 Farm BAPs covering a farmed area of 27,460 ha had been completed or were in the process of being delivered across England and Scotland.

**ADAS**

4.47 Since the previous report ADAS has been privatised and the section that delivers statutory and scheme work for MAFF has become the Farming and Rural Conservation Agency (FRCA). Therefore, ADAS no longer provides project officers for ESAs, which 5 years ago represented a substantial commitment of time. Although most ADAS advice is now offered commercially, it is still offering general free conservation advice and pollution advice to farmers under contract with MAFF. Its commitments are achieved through free advisory visits, together with a programme of promotional activities (farm demonstrations, agricultural shows, talks to farmer groups etc).

4.48 As part of its programme of free pollution advice MAFF commission ADAS to run annual campaigns in 6 – 8 catchments in England, offering free consultancy advice in the preparation of Farm Waste Management Plans. The campaigns include visits and promotional meetings. ADAS also provides advice on behalf of MAFF to farmers in Nitrogen Vulnerable Zones (NVZs), to assist them in implementing the requirements of the action programmes that applies in these zones. In England the free advice includes details of relevant grant schemes and encourages applications where appropriate, but the advice is not directly aligned with any particular scheme. Also preparation of grant applications is not part of the free advice service. In the provision of advice the advisors encourage a whole farm approach with particular emphasis on the protection and enhancement of biodiversity and the landscape, especially where species and habitats are present for which the Biodiversity Steering Group has prepared an action plan. 550 visits are undertaken in NVZs, an equivalent of 5 person days.

4.49 There are 45 ADAS consultants who deliver free MAFF-funded conservation advice across England. During 1998/99 the ADAS consultants made 1,880 free environmental
advisory visits in England an increase on 1993 when 1,400 free conservation visits were conducted.

4.50 Within Wales, ADAS is funded by the Welsh Office Agriculture Department (WOAD) to provide free telephone and on-farm advice to farmers in relation to grant schemes, such as ESAs, and the Habitat and Moorland schemes. As in England, this advice does not extend to preparing grant applications. The ADAS agri-environment team in Wales has declined during 1999 as CCW has launched the new Tir Gofal scheme. ADAS visits were set to decline in 1999 from 1,300 per year to approximately 500. There are 8 full time and 4 part-time staff who spend 25% of their time providing free environmental advice. This represents 3 person years of time spent on delivering free environmental advice. This includes 1 year of person time devoted to advice provision on overgrazing visits.

Wildlife Trusts

4.51 A postal survey was conducted of Wildlife Trusts throughout the UK. Responses to the questionnaires were received from 20 Wildlife Trusts. All of the Trusts had staff offering direct conservation advice to farmers and private landowners, but none on a full-time basis. Most of this advice was provided county-wide, although there was often a particular focus on certain areas or particular species. For example, in Devon advice covered the whole country but focused on the Culm Measures, the South Hams and East Devon.

4.52 Much of the advice offered relates to wildlife conservation, woodland management and habitat creation. The Trusts also provide advice in completing applications for agri-environment schemes, such as the Countryside Stewardship scheme. Although in Wiltshire, MAFF/FRCA have limited the Trust to assisting with only six Countryside Stewardship schemes in the county in 1999/2000. The Welsh Wildlife Trusts also expect to be involved in assisting with applications for the new Tir Gofal scheme.

4.53 Much of the advice delivered by Wildlife Trusts in the past has been reactive, responding to requests from farmers, but there is evidence that the Trusts are becoming increasingly proactive due to new funding sources and the Wildlife Sites initiative. Also many of the Wildlife Trusts felt that the work with the farming community over the last five years had increased and in some cases substantially so. One important delivery mechanism contributing to this increase is the Wildlife Sites initiative. This aims to identify those sites in the wider countryside that are the best areas for wildlife outside SSSIs. It is designed to bring to the attention of landowners the unique value and importance of their wildlife, allowing them to manage the sites sympathetically and with best knowledge. The initiative enables Trusts to gain initial access on to farms and to encourage farmers to adopt farm conservation practices to protect their Wildlife Site.

4.54 The majority of the Trust’s also felt that the involvement in Biodiversity Action planning had led to fresh consideration of environmental advice for farmers. Some trusts had used the BAP process to involve farmers in producing farmland action plans, such as Arable Action Plans, Grassland Action Plans.
The Culm Grassland Advisory Service

The Culm Grassland project is an example of an innovative Wildlife Trust advisory project. Culm Measures soils supports a variety of remnant agriculturally unimproved grassland habitats, comprising wet heath, mire, bog, neutral and acid grassland, scrub and secondary woodland. The grassland supports a wide and unique range of wildlife, including the dormouse, otter, curlew, barn owl, snipe, reed bunting, marsh fritillary, brown hairstreak, small pearl-bordered fritillary, narrow-bordered bee hawk-moth, double line moth, mud snail, southern damselfly, keeled skimmer, raft spider and a number of rare flies, planthoppers and beetles, wavy-leaved St. John’s wort, whorled caraway, cranberry, lesser butterfly orchid and some bryophytes.

The Devon Wildlife Trust surveyed Culm Grassland in the late 1980s and showed that between 1984 and 1991 approximately 65% of the Culm Grassland had been lost. As a result of these findings, Culm was targeted for the Countryside Stewardship Scheme, one of MAFF agri-environment scheme for the wider countryside outside of Environmentally Sensitive Areas and chosen for English Nature’s Wildlife Enhancement Scheme, which operates on Sites of Special Scientific Interest (SSSIs).

With the specific objective of encouraging farmers to enter these schemes, particularly Stewardship, the Wildlife Trust established the Culm Grassland advisory service to:

- identify Culm Grassland through field survey, and to document Culm Grassland sites through the Devon Biodiversity Records Centre.
- locate and establish positive relationships with owners and managers of Culm Grassland sites.
- proactively to offer an advisory service to owners and managers of Culm Grassland, based on field visits, written advisory reports, development of site management plans and on-going telephone advice.
- assist owners and managers of Culm Grassland to enter their sites into appropriate Agri-Environment incentive schemes to help secure sites under positive management regimes.
- provide owners and managers of Culm Grassland sites, and other interested parties, with a newsletter information service known as Culm Connections.
- explore and develop new approaches to the integration of Culm Grassland conservation into rural development and good farming practice.
- seek to coordinate the activities of all parties active on the Culm Measures whose activities impinge on Culm Grassland management.

The service is funded out of the core budget of the Devon Wildlife Trust with some grant aid from English Nature, the Environment Agency and the County Council. There is one advisor who spends approximately 75% of her time in advisory work on the Culm.

All initial advisory work is provided free to the farmer/landowner, although a professional fee is charged where an application for Countryside Stewardship is being submitted as this can be reclaimed by the farmer. Fees are waived if the application is unsuccessful, but in recent years 75-90% of applications to the Countryside Stewardship Scheme on the Culm have been successful. The initiative has met with considerable success and, alongside other initiatives, a high proportion of the most valuable Culm sites are now under some form of protection, at least in the short term. Moreover, relations between conservation interests and farmers, in a rather remote and traditional family farming area, have benefited greatly.
4.55 The Wildlife Trusts provided a considerable amount of detail on what they felt were the main information needs of the farming community. Many felt there was potentially too much information for farmers, but that much of it was not readily available partly due to the lack of co-ordination between advisory services. Others felt strongly that there was inadequate provision of resources to implement advice, particularly in terms of staff time.

**RSPB**

4.56 The RSPB provides substantial amounts of advice relating to the sympathetic management of habitats but they operate differently from some other organisations since their advice is targeted at advisers rather than farmers themselves. For example, the RSPB employs an Agri-Environment Project Officer to advise DANI staff on the management of land for farmland birds and other biodiversity, and help target the new Countryside Management Schemes to the most important areas. The RSPB produces a wide range of documents for farmers, nature reserve owners and other land managers, from major habitat management handbooks to leaflets aimed at making the most of countryside grant schemes. RSPB staff, part-funded by EN’s Species Recovery Programme, work with farmers to protect nests and provide advice. The RSPB also work in partnership with the Countryside Agency; LEADER Programme and EN in the North Pennines to encourage wading birds in an area suffering from the marginal economics of hill farming and the loss of rural infrastructure. So far, work has included a wading bird survey; advisory meetings and liaison with farmers to help them manage their land better for breeding wading birds.

4.57 The RSPB Volunteer and Farmer Alliance, piloted in Central England, has been developed as a free service for those farmers who want to understand and provide for the needs of birds on their land. Volunteer surveyors visit farms to survey birds. Each participating farmer receives a package containing a map showing where the birds are located; a certificate of participation; advisory material and details of where professional farm conservation advice can be sought. Clearly, participation is a key element to the undoubted success of this particular scheme:

> ‘Working with farmers to recognise the value of their land for birds will help achieve the RSPB’s vision for farming - that of farmers producing food and wildlife on the same land and the same time’

(http://www.rspb.org.uk/cons_issues/volunteers.html).

4.58 In the South-west region RSPB has worked in Devon to increase the population of cirl buntings and has succeeded in trebling the number, stating that, ‘key to the success of this project was the involvement of the local community. This included working with landowners and farmers helping to develop farm management agreements through to children carrying out special projects in schools across the county. In East Anglia, collaborative work with landowners has halted the decline of stone curlews. This means that the first target of the UK Biodiversity Action Plan for stone-curlews has been met two years ahead of schedule. In Central England the Red Kite Project has proved very successful with the first breeding pair in the region since the last century - in this case the RSPB has been organising workshops with farming and conservation groups (RSPB Website).
The analysis above identifies a plethora of organisations providing free conservation advice. Figure 5.1 and the supporting Table 5.8 provides an estimate of the contribution of each organisation to the provision of free conservation advice and the extent to which this advice meets conservation management, landscape improvements and pollution advice.
5. **Horizontal Fragmentation: New Providers of Advice**

5.1 This chapter examines a range of new sources of advice and advisory initiatives launched or developed since 1993/94.

**Organic Conversion Information Service (OCIS)**

5.2 The OCIS is co-ordinated for MAFF by ADAS. It consists of a dedicated telephone helpline and free advisory visits to farmers. The telephone helpline is operated by the Soil Association and the advisory visits are undertaken by a team of experts from the Elm Farm Research Centre. The helpline, which is operated by 3 members of staff, gives initial advice on basic issues of organic farming, such as the organic production standards, registration and the support available for conversion. On request farmers are sent an information pack. In England and Wales the following enquiries were received by the helpline during the first fifteen months of its operation.

<table>
<thead>
<tr>
<th>England</th>
<th>Wales</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan – March 1998</td>
<td>718</td>
</tr>
<tr>
<td>April – June</td>
<td>880</td>
</tr>
<tr>
<td>July - Sept</td>
<td>1,017</td>
</tr>
<tr>
<td>Oct – Dec</td>
<td>1,025</td>
</tr>
<tr>
<td>Jan – March 1999</td>
<td>1,957</td>
</tr>
</tbody>
</table>

5.3 The advisory visits are made by 50 full and part-time advisors from the Elm Farm Research Centre, who have specialist knowledge in organic livestock and arable farming. Once a request for advice has been received an advisor is allocated depending on their area of expertise. The advisors will visit the farm for half a day and give detailed technical advice on organic conversion and marketing prospects, tailored to the needs of the individual holding. The farmer will be helped to draw up an outline conversion plan and given enough information to make an informed decision on whether the farm is suitable for conversion to organic farming and whether it is a realistic option. A further full day of advice is also available to the farmer. In 1998 in England 1,800 half day and 600 full day visits were made by the advisors. This amounts to 7.5 person years of advisory time.

5.4 In Wales the OCIS operates differently. The contract is run by ADAS Pwlleirian for the Welsh Office. The half day visits are undertaken by ADAS who sub-contract the 1 day visits to the Organic Advisory Service at Elm Farm Research Centre. In 1998/99 in Wales 464 half day visits were made by 6 ADAS advisors. 204 one day visits were made by 6 Organic Advisory Service advisors. This represents 5.5 person years of advisory time.

**Objective 5b projects**

5.5. Although the main rationale for EU Objective 5b regions is economic regeneration, some of the projects have proved to be an important source of environmental advice provision to farmers. The consequence has been to create a concentration of environmental advice within a geographical boundary based on economic rather than
environmental criteria. This has had a substantial impact on the geographical distribution of environmental advice throughout the UK.

5.6 Eleven areas in the UK were awarded Objective 5b status for the period 1994 – 99 largely on the basis of low GDP, a high proportion of employment dependency on agriculture, a low level of agricultural income and a low population density. The eleven areas include 5% of the UK population and cover 27% of the land area including much of the UK’s most environmentally favoured and naturally diverse areas.

5.7 Information on Objective 5b projects was obtained from telephone interviews, supplemented with written information where possible. Obtaining information about 5b projects proved to be a difficult task as MAFF’s database of EAGGF 5b projects holds limited information. Moreover, there appears to be a serious lack of monitoring and evaluation of these schemes. There also appears to be limited co-ordination between the government bodies administering the three structural funds. The paucity of information has created difficulties in providing an overall figure for the advisory input of 5b projects. Moreover, the fact that many of the projects combine environmental advice with farm diversification and business advice mean that calculating the environmental advice element is fraught with difficulty.

5.8 The extent to which 5b projects fund environmental advice targeted at farmers or landowners differs in each country. In both England and Wales there are a number of projects where environmental advice is the main component. By contrast, in Scotland, our research reveals that there is minimal use of 5b funds for environmental advice provision. Here the projects providing environmental advice tend to be focused on the wider rural community. Much of the emphasis is on diversification and where environmental projects have been funded advice provision to farmers appears incidental and minimal.

5.9 Some projects build on existing networks of advisors and experience in operating local authority grant aid schemes. However, it is not just a case of funding existing mechanisms via a new financial source. Advice provision is particularly significant in terms of additional ‘advice hours’ offered. For example, within the Suffolk 5b area, FWAG has offered a high level of advisory service, one day rather than a half day’s free advice.

5.10 At a more general level, 5b projects seem to have played a potentially important role in forging new networks and perhaps cementing others. The Northern Uplands Moorland Regeneration Project provides an example of a project with a strong partnership. It is managed by ADAS with the Steering Group comprising the Moorland Association, English Nature, MAFF/FRCA, National Sheep Association, NFU, Game Conservancy and RSPB.

5.11 A range of mechanisms has been used by the 5b projects in providing environmental advice to farmers. These have included farm visits, technical guides, newsletter, seminars, training and demonstration events. In this way farmers are progressed along the environmental management adoption continuum. Participants particularly favour the integrated projects because they provide opportunities of some economic benefit from environmental management.
5.12 We have classified 5b projects into different types and produced case studies for each type to provide illustrative examples of environmental advice delivered to farmers under 5b:

- Single species project, which focus on management practices that benefit a particular species. (e.g. Barnacle Goose Project and Black Grouse Recovery Projects in Scotland and the Welsh Grouse Project in Wales)

**Black Grouse Recovery Project**
The origins of the Black Grouse Recovery Project lie in the decline of the black grouse due to increased grazing pressure, forest maturation, increased mortality associated with collisions with deer fencing and decline in ‘sporting’ interests. The project aims to stabilise and enhance Black grouse population in Tayside, reinstate mixed land use and to provide landowners and manager with appropriate advice. This will be achieved through 10 demonstration sites and free advice to landowners on black grouse management amounting to 20 advisory visits per annum. About half of the project officer’s time is devoted to advice provisions. A range of advisory delivery methods are employed ranging from production of leaflets to black grouse management seminars, talks to interested bodies, such as FWAG and the native Woodland Forum, as well as targeting landowners.

**Welsh Grouse Project**
The main sponsors of the Welsh Grouse project are the Game Conservancy and RSPB are involved with the steering group. The origins of the project lie in the deterioration of upland habitat over the post war period, particularly loss of heather cover, which resulted in a decline in grouse numbers. The aim of the project was to identify management requirements for habitat and grouse restoration and provide advice and training to farmers and land managers. A major objective is to demonstrate the economic benefits of sustainable upland management through demonstrations, open days, and visits.

- Farm diversification projects which, while predominantly business orientated, do offer some baseline environmental advice (e.g. Meneter A Busnes - Rural Wales 5b area, Marches Farm Enterprise Programme)

**Marches Farm Enterprise Programme**
Marches Farm Enterprise Programme is a partnership of ADAS, Harper Adams and Herefordshire, Worcestershire and Shropshire Business Link. The programme provides service of business appraisal and advice. The emphasis is very much on diversification although advice is available on environmental improvements. The first stage of the project involves a visit from an advisor to assess the current farm business and identify potential developments. This is followed by the development of a business plan drawn up by an outside consultant.

- ‘Traditional’ landscape conservation grant aid projects offering a fairly basic level of advice on tree planting etc. (such as the Okhampton to Polson Bridge Recreation and Land Management Initiative and Southern Marches Environmental Action Plan)
**Suffolk Landscape Project**

It appears that ‘traditional’ landscape conservation grant aid projects offering a fairly basic level of advice on tree planting have replaced some of the advice that used to be provided by the Countryside Commission’s landscape grants. An example of this type of project is the Suffolk 5b Landscape Project. The overall aim is “positive management of Suffolk’s landscape and the creation of habitats to underpin successful economic development and the maintenance of diversity”. The project is very much advice orientated both in terms of practical conservation and in terms of making successful grant applications. Specific targets include advice to 250 landowners resulting in increased uptake of existing grant schemes, 125 environmental and habitat improvement schemes and demonstration events. A key feature of the scheme is tree planting although an equally important aspect appears to be the scheme’s ability to act as a one-stop-shop. The project builds on existing networks of advisors and experience in operating local authority grant aid schemes. However, it is not just a case of funding existing mechanisms via a new financial source. Advice provision in particular is significantly extended.

- Demonstration projects associated with practical land management initiatives (some of which are more ‘passive’ than others) such as *Mynydd Y Ffynnon, Balancing Environment and Agriculture in the Marches (BEAM)*

**Beam Project**

The BEAM project is a 5b funded project in Herefordshire and Shropshire along the border with Wales, an area known as the Marches. The project seeks to demonstrate the potential of integrated farming systems (IFS) through practical demonstration of IFS within a whole farm commercial business. A series of open days, farm walks, demonstration events and, crucially, farmer discussion sessions have undoubtedly raised awareness of farmers to IFS in the region and there are signs of increasing adoption as a result, with BEAM having an additionality effect of more than doubling the rate of participation in IFS in the Marches area (Morris and Winter 1999), although this initial finding needs to be tested in further survey work. It has been a difficult time to promote IFS in a largely mixed livestock-arable area during a period of agricultural retrenchment, but the emphasis on practical demonstration within a locally well-known commercial farm gives this project some chance of having a lasting impact within its locality.
• Integrated projects covering environmental and economic issues where advice and training are core (e.g. Bodmin project, Bowland project, South Pembrokeshire Farm Support Scheme, Peak Park Farm and Environment Project, Tamar 2000 Support)

**Tamar 2000 SUPPORT**

An example of an integrated project is TAMAR 2000 SUPPORT (Sustainable Practices Project on the River Tamar). The origins of the project lay in the lack of both advisor and farmer time to devise holistic management plans. The main aim is to conserve and restore environmental quality for both people and wildlife while delivering economic gains. This is achieved in particular by optimising farm inputs, employing best management practices and the management and restoration of key river and wetland habitats with benefits to water quality, fisheries and other wildlife, linked to recreation and tourism development.

There are three advisers who work independently as multi-faceted advisers. The advisers receive specialist and individual training from other organisations, such as BDB Associates, WERG and the WCRT plus contributions from the Environment Agency ADAS and Silvanus. The inclusion of these organisation in training the advisers improves the level of advice that the advisers can offer. Each farm has approximately a week of adviser’s time.

Areas are targeted within each sub-catchment. Farmers with river frontage are written to, telephoned and visited. The initial visit results in a database proforma listing many features on the farm. The farmer is given verbal advice at the time of the visit, which may be detailed. The project advisers will produce a management plan free of charge if required – a River Wise Plan. This looks at the vision of the farmer, where he/she is hoping to take the farm, the environmental impacts and opportunities to reduce damage. The plan takes into consideration the whole farm system and tries to cover both economic and environmental gains in a sustainable package. The advisers work closely with individual farmers in a strong one to one relationship, producing non-prescriptive plans backed up with advice. The project has been successful in producing plans for every farm with frontage on the main river or main tributaries.

A response rate of 3 out of 5 was expected but it has been closer to 95% (9 out of 10). In July 1998 in excess of 150 farmers were receiving one to one training and guidance from the advisers and in excess of 150 integrated farm management plans have been completed.

**Landfill Tax Credit**

5.13 Landfill Tax Credit has been introduced since the previous report as a new source of funding. It is increasingly being used by environmental organisations to secure environmental benefits through a range of projects. The regulation of the Landfill Tax Credit Scheme is carried out by ENTRUST, a private sector not-for-profit company, limited by guarantee and approved by H.M. Customs and Excise. ENTRUST is funded by enrolment fees and by a levy on the contributions received by the enrolled bodies. The
levy was originally fixed at 1%, but increased to 5% in October 1997, since the level of contributions were not generating sufficient income for ENTRUST to remain solvent.

5.14 The Tax Credit money can be used for a variety of features relating to historic buildings, R & D into sustainable waste management practices and public parks and amenities but also covers wider environmental goals in pursuit of “the protection of the environment”

5.15 The legislation allows for an Environmental body to act as an “umbrella” Trust, collecting contributions on behalf of smaller organisations and arranging central support and channelling money through to the smaller bodies.

5.16 The Landfill Tax money was identified as an important source of funding by a number of Councils. In Northamptonshire it is used by wildlife charities in the county and the Council have used it for nature reserves. In Wiltshire, the Braydon Forest Project, which makes approximately 100 free advisory farm visits a year, obtained £16,000 from Landfill tax credits.

5.17 A number of posts in Northern Ireland councils have been funded by money received from Landfill Tax credits. For example, some of the work by Antrim Borough Council in relation to advice on pollution control, waste management and conservation issues has been triggered by the introduction of Landfill Tax Credits. The Landfill Tax Credit has also provided financial support for a community environmental education officer in the Council seconded from the Ulster Wildlife Trust
6. Conclusions: The Problems and Opportunities of a Fragmented Knowledge Network

Quantity of advice on offer in 1998/99

6.1 Table 6.1 summarises some of the key findings from Chapters 4 and 5, highlighting the continued variation in provision between the four countries in the UK. The figures take into account estimates of all advice to farmers offered on conservation, pollution and general environmental issues by the following: FWAG, FRCA, SAC, DANI, ADAS, OCIS, national parks, local authorities, wildlife trusts, and the RSPB. It should be noted that the figures mask significant regional differences arising from the contrasting policies, resources and priorities of different local authorities, county FWAGs, and county wildlife trusts. Moreover, it has not proved possible to allocate figures to the contribution of 5b projects but many do have a significant environmental advice element.

6.2 The following calculations were used in producing specific figures:

- We have made adjustments to take into account the availability of local authority advice, assuming the equivalent of 45 adviser years in England, a reduction from the last report and 14 in Wales, an increase due to increased number of councils as a result of Government reorganisation, 2 in Scotland and 1 in Northern Ireland.

- National Park provision has been included as 15 adviser years in England and 8 in Wales, slightly higher than the previous report.

- Coed Cymru advice has been added to the Welsh figure at the rate of 50% of the advisory effort, on the assumption that 50% of their effort is devoted to commercial forestry objectives.

- Wildlife Trust advice has been included as 25 adviser years in England, 8 in Wales, 4 in Scotland and 2 in Northern Ireland an increase on the previous report.

- OCIS advice has been included as 7.5 adviser years in England and 5.5 adviser years in Wales.

- ADAS advice provision is 17 adviser years in England and 3 person years in Wales, plus 5 years of advice on farm waste management plans and 5 years on NVZs.

- RSPB advice has been included as 3 adviser years in England, 2 in Scotland and 2 in Northern Ireland.

- Tir Gofal has been included as 5.1 adviser years, correlating to 30% of the 17 Tir Gofal adviser’s time (same ratio as used for FRCA CSS and ESA project officers.

- It is assumed that 75% of DANI Countryside Management Division advisers time is dedicated to advice provision.

6.3 Northern Ireland and Wales are now the best covered countries for environmental advice in the UK with Scotland appearing to lag seriously behind.
Table 5.1 Summary of Free Conservation Advice Provision in the United Kingdom, 1998/99

<table>
<thead>
<tr>
<th></th>
<th>Total number of holdings</th>
<th>Total agricultural area (Has)</th>
<th>Total number of adviser years</th>
<th>Total number of holdings per adviser year</th>
<th>Total number of hectares per adviser</th>
</tr>
</thead>
<tbody>
<tr>
<td>England</td>
<td>144,777</td>
<td>9,223,317</td>
<td>158</td>
<td>915</td>
<td>58,302</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>32,118</td>
<td>1,068,862</td>
<td>37</td>
<td>862</td>
<td>28,694</td>
</tr>
<tr>
<td>Scotland</td>
<td>32,888</td>
<td>5,193,149</td>
<td>24</td>
<td>1,348</td>
<td>212,834</td>
</tr>
<tr>
<td>Wales</td>
<td>27,937</td>
<td>1,477,447</td>
<td>44</td>
<td>641</td>
<td>33,886</td>
</tr>
<tr>
<td>UK</td>
<td>237,720</td>
<td>16,962,775</td>
<td>263</td>
<td>902</td>
<td>64,387</td>
</tr>
</tbody>
</table>

The Problems of the Open System

6.4 Hitherto, our discussion of fragmentation has tended to imply that the level of pluralism uncovered in our examination of the English AKS is necessarily a problem. Some of the more obvious problems associated with this level of fragmentation are as follows:

- Confusion among farmers as to where to go for advice;
- Dangers of duplication and/or wasteful competition among providers of advice;
- Geographical unevenness of advice provision with some areas under-provided for;
- Dangers of contradictory messages going to farmers;
- Difficulties of monitoring and evaluating provision and of quality control;
- No overall co-ordination and consequently no real sense within government of the nature and extent of some of the above problems.

6.5 However, it is important to recognise that pluralism may also have its advantages. There may be opportunities for a cross-fertilization of ideas across the network. It is undoubtedly the case that the open system in England allowed a more rapid transition from an agricultural productivist advisory regime to an environmental regime than elsewhere in the UK. Innovation is more likely within a diverse group of advisors and advisory bodies especially, perhaps, where there is a combination of networking and
creative competition between agencies. Above all, perhaps, the open system has encouraged the environmental NGOs to become involved in the AKS bringing their own specialist expertise but also exposing them to the tough realities of practical farming and land management. The gap between environmental critique and the real world of farming, which FWAG successfully breached for many years, is increasingly being straddled by other NGOs, notably the more successful wildlife trusts.

6.6 It is also the case that a number of the specific and specialist initiatives provide evidence of targeting to bring about specific changes. This is clearly the case with the advice, promotion efforts and targets associated with agri-environment schemes. Increasingly too there are links with biodiversity action planning targets. Pollution advice too has been targeted at vulnerable areas or farming types. What is disconcerting, perhaps, is the lack of cross-fertilisation of ideas, still less co-ordination, across different targeted schemes.

Recommendations

6.7 Our recommendations match those developed in Winter et al 2000. We recommend that a joint government departmental and agency working group be established to:

- consider the knowledge needs of a sustainable agriculture;
- consider how best to co-ordinate extension activities within the public sector;
- offer guidance, support and promote best practice to those undertaking extension activities outside the public;
- develop broad programmes of monitoring and evaluation;
- consider how best to target extension activities via local initiatives and innovation. This would encompass both geographical targeting in terms of the regional/local needs of the agricultural industry and priorities for particular habitats and Biodiversity Action Plan species.
- consider how best to establish suitable mechanisms to link agri-environmental science findings to various forms of extension. The interface between research and extension should be more open and direct, and in the funding of scientific research, account should be taken of the need for dissemination of research findings through advice provision/technology transfer. This may most usefully take the form of interactive dissemination through demonstration, discussion groups etc. Researchers need to be accessible to farmers allowing the opportunity to build relationships, e.g. by attending conferences, meetings, events and shows.

6.8 Subject to the findings and conclusions of such a working group, we anticipate the need for the following reforms to be put into place if effective farm conservation management is to be achieved in England:

- horizontal co-ordination and affiliation of information providers, preferably at a regional level;
• vertical co-ordination of AKS to ensure better technology transfer and dissemination of research findings;

• greater stimulus given to the participation of farmers in knowledge networks vertically with research organisations, horizontally with information providers and interactively with other farmers;

• much greater attention within constituent parts of the AKS to the emerging diversity of the agricultural industry. This should cover the needs of new entrants, contractors and consultants, and the implications of new land uses and developments in the agro-food sector;

• knowledge provision that fully integrates business and conservation advice.
References


