

A needs survey for support for farm forestry

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Executive Summary

A farm woodland survey was instigated to determine the management status of woodlands and farmers' woodland knowledge in three distinct regions of Northern Ireland. A literature review of farm forestry practices and attitudes in other temperate regions was also carried out. Using both sets of information suggestions are made to enhance the Northern Irish farm woodland resource.

The species composition of woodlands was varied and differed between regions. In Mid Tyrone Sitka spruce was the dominant species, reflecting the fact that most woods in that region have been planted since 1970. In Fermanagh, on the other hand, ash and birch predominated, forming an important environmental and landscape resource. In the Lower Bann Valley, farm woods consisted of a mixture of relict hazel and oak woods, naturally regenerated birch and old plantation woods, creating a locally diverse woodland landscape with a relatively high amenity value.

The majority of woodlands required some degree of thinning and pruning in order to achieve a harvestable timber crop. Timber production, sporting, conservation, landscape and shelter were an aim of between 63 and 85% of farmers for their woodlands whereas public recreation represented a purpose for only 24% of the woods. With the exception of timber production and public recreation the farmers' aims were satisfactorily met.

Stocking of most wood was above 70% and for Sitka spruce wood as high as 95%. 85% of the woods contained good or fair stems. Yield classes mainly fell in the range of 5 to 15. Both in terms of potential stem quality and yield class Sitka spruce fared better, mostly because many of the spruce woods had recently been established.

The Forest Service and the farming press were considered to be the main sources of advice, but farmers also gained information from the press, neighbours, contractors, forest co-operatives and agricultural advisors. The vast majority of farmers had not carried out any maintenance work to their woodlands. Only in Mid Tyrone, with a substantial area of commercial plantations, had the majority of farmers carried out forestry works and, even here, most of these tree works were associated with establishment.

This report concludes that

1. The present, different, management approaches adopted for 'commercial' and 'semi-natural' woods should be amalgamated
2. A coherent woodland management methodology for all farm woodland types should be developed to ensure that they all provide some timber, enhance the landscape and bring environmental benefits. The farming community should be educated about these woodland management methods
3. The use of Sitka spruce as a preferred species for farm woodland establishment should be re-assessed
4. Farm forestry support organisations should be assessed
5. The farm forestry co-operatives should be supported and encouraged to assist in the management and marketing of farm grown timber.

1 Introduction

The farm forestry sector in Northern Ireland has been able to avail of financial support for a number of years. For most of this time, almost all of this support has been directed towards the establishment of a commercially viable timber crop. More recently, the preservation or enhancement of semi natural habitats and areas of outstanding beauty have become important, with financial inducements being made available to protect 'native' woods. Although grants for the commercial management of maturing woods have been available for some time, they have not, generally, been utilised by the farming community.

There are a number of forestry organisations established in Northern Ireland who provide support and assistance to farmers who own and wish to manage woodland. Some of these organisations, such as the forestry contractors, claim to provide a comprehensive support service for farm foresters, while others, including a number of Government Departments, provide advice, on request, to farmers. In addition to the commercial and state sectors, a number of forestry organisations have been set up and many of these provide some non-financial support and advice for farm foresters.

There have been a number of studies into the private forestry sector in Northern Ireland. Of these the report produced by Graham (1981) provided a comprehensive review of the condition of privately owned woods. Murray et al. (1987) produced a Province wide ecological survey, which included a representative sample of woods. In addition, there have been a number of post-graduate research projects that have studied aspects of privately owned woodland (e.g. Gilbertson 1969, Magurran 1981, Butler 1996).

There have been a number of research projects into the attitude that farmers have to farm woodlands. These reports (such as Edwards & Guyer 1992 and Anon. 1996) looked into the attitude that the farming community had on on-farm afforestation and on the reasons that individuals gave for deciding to plant woods on their farms. McAdam et al. (1997) assessed farmer's attitudes towards agroforestry. Recently, O'Leary et al. (2000) have looked at regional differences in attitude to afforestation in the Republic of Ireland. They found that in two case study populations, one of which with an agricultural economy, was found to be highly critical of afforestation whereas the other was broadly favourable.

The purpose of the research reported on here was to investigate the present state of management in existing, small scale, farm woodlands in Northern Ireland and to identify the woodland knowledge base within the farming community. The existing support structures for farmers who own or manage woodlands were also investigated to identify the quality and extent of the support they provided. Finally, the non-financial support structures for

farm forestry that have been adopted in other European Countries were assessed to identify best practice.

2 Methodology

2.1 Desk Review

A review of the relevant literature was carried out to provide

An historical perspective on the development of farm forestry in Northern Ireland

Summaries from previous reports on farm forestry in Ireland

Summaries from existing research into farm forestry support in other European countries

During this research, a number of libraries were visited, including those managed by Coillte in Newtownmountkennedy, DARD in Dundonald House and those held at the University of Ulster in Coleraine and at Queens University at Newforge Lane in Belfast. Internet sources were also exploited, particularly those web pages produced by organisations that provided farm forestry support in Europe. Literature searches were carried out using Forestry Abstracts, Web of Science database and the Coillte's Forestry Ireland bibliography. Finally, to support this review, a number of in-depth interviews were conducted with key personnel that were involved with farm forestry support in other European countries.

2.2 Interviews with suppliers of farm forestry support.

Forestry support organisations that provided some form of support to farm foresters in Northern Ireland were identified. A representative from each of these organisations was interviewed and their replies were recorded on to a questionnaire sheet. In addition to general background information on the organisation, the representative was asked to supply details of their organisations' aims and objectives and their management structure. The membership criteria or restrictions that are placed on those who can obtain help were also identified. Finally the type of support that was offered was listed as well as any other relevant information.

2.3 Interviews with farm foresters

Three distinct geographical areas within Northern Ireland were chosen for this survey. Two of these areas, Fermanagh / West Tyrone and mid Tyrone, coincided with the range covered by existing farm forestry co-operatives. The third area, in the Lower Bann valley, was chosen because it contained a mixture of remnant ancient woods as well as more recently established woodland plantations.

These three areas were chosen because they appeared to

provide subtly different perspectives from the farmers interviewed. In Fermanagh and West Tyrone there was a preponderance of semi natural woods, with alder, ash, birch and oak. There was also local grant support associated with Lakeland ESA that had been developed to encourage farm foresters to preserve the environmental value of their woods. In Mid Tyrone, State planting of woodlands in the sixties and seventies had employed many of the local farmers and the skills they acquired at that time enabled them to plant some trees on their farms. The result of this has been a proliferation of small conifer plantations and shelterbelts in this area of Northern Ireland.

In the Lower Bann valley, by contrast, an intimate mixture of good quality farmland and poor quality bogs or rocky outcrops has produced a patchwork of relatively intensive farming and semi natural vegetation. Many of these areas of poor ground now support woodland, either because they have never been cleared, or because woodland has naturally re-generated on them. More recent woodland establishment has tended to be dominated by broad-leaf species and appears to be aimed at providing environmental and landscape improvements rather than producing financial returns.

Fifty farm woods were identified in each of the target areas and the owners of these woods were interviewed. The results of these interviews were recorded on a questionnaire sheet. Information on the farm size, main farming enterprise and status was recorded to provide a background for the farm forestry. The farmers woodland knowledge was assessed by asking ten questions that were designed, not to assess the farmers knowledge of trees, rather to assess their knowledge of the types of operations required to manage a commercial wood and to identify which organisations the farming community used to supply advice. The farm foresters were then asked to list their principle aims for their woods. The criteria used to identify these principle aims closely followed those used by the Northern Ireland Forest Service to assess applicants for the Woodland Grant Scheme.

Finally, the farm woodland was assessed to ascertain its condition and its ability to meet the farmer's key aims. Results from these surveys were recorded on a questionnaire sheet. The woodland size and its main species were recorded, as was its planting date (if known) and the use previously made of the land that the wood was now growing on.

Identifying the average yield class, stocking density and stem quality within each wood assessed the potential for a saleable timber crop. The landscape impact that the wood had was assessed by scoring its visibility, species composition and outline. The woods environmental value was assessed by scoring the ground flora, mantle development and vegetation within its open spaces.

The present state of management within the wood was

assessed by scoring various management objectives against defined categories. Finally, the surveyor was asked to identify the most significant problem within the wood and to suggest the most important management operation needed to ensure that the woodland owner's principle aims were to be met.

2.4 Analysis of the data

2.4.1 Suppliers of Farm forestry Support

The results of the interviews with suppliers of farm forestry support were tabulated to identify the main areas in which these organisations provided support. This basic approach enabled organisations with very different aims and objectives to be compared. It also helped to highlight areas where support appeared to be lacking.

2.4.2 Farm Foresters

Information obtained from interviews with farm foresters and from an assessment of their woods was collated and analysed using the statistical package SPSS PC (Frude 1993). A number of key analysis were carried out using this package, including

- An assessment of the woods in relation to their species composition, geographical range, environmental and landscape impact and the levels of management evident
- An assessment of the farmers knowledge about woodland management and the effect this level of knowledge had on the management status of the wood
- An assessment of the farmers use of existing farm forestry support organisations

The results of these assessments were then collated to establish an overall pattern of farm forestry management and status.

2.5 Limitations of the data

A number of significant limitations in the data used in this research became evident as the research progressed. Some of these limitations arose as a direct result of the methodology employed. Without a definitive list of all the farmers who own woodland in the target areas, it was not possible to completely randomise the sample selected, nor was it possible to calculate the percentage of farm foresters sampled. To overcome these difficulties, an attempt was made to ensure that a geographically dispersed sample was obtained in each target area. It soon became obvious, however, that farm forestry was not evenly distributed throughout the target areas, rather, farm woods tended to be closely clustered in distinct local areas. While some of this clumping was obviously caused by underlying geographical or topographical influences (lakeshores, areas of cut-over bogs, steep slopes etc.), some clumping appeared to have resulted from the development of local tree planting traditions.

The sampling technique employed, (woods were identified by driving around the target areas) ensured that the sample

chosen was more significant in the landscape than may otherwise be the case. Because of this, less reliance has been placed on the landscape impact of farm woods than would otherwise have been the case.

A number of the farm woods sampled were in multiple ownership. These woods, mainly naturally regenerated birch woods growing on cutover bogs, were, nevertheless, important local woods and have been included in this research.

Early results of the interviews with farm foresters highlighted an almost universal lack of knowledge of the types of management operations and decisions needed to achieve their stated aims. While the exceptionally large numbers of negative replies from the farmers concerning their knowledge of woodland management devalued the detailed analysis planned, it was, in itself, an important result and will be dealt with in more detail in the discussion section of this report.

Finally, the use of a series of pre-determined descriptive aims from which the farmer could choose enabled the farm forester to choose aims that may not have existed before the interview took place. This was particularly noticeable when farmers who had inherited existing, neglected woods were interviewed. Because of this perceived problem, the results from this section have been given a lower priority than would otherwise have been the case.

3. Results

3.1 Desk Review

3.1.1 Historical perspective

As a region Northern Ireland has fewer woods than most other regions in Europe (Dick 1991). The reasons for this shortage of woodland include: population growth and the expansion of agriculture; the use of wood as a fuel, a raw material for industrial expansion and in construction; and the effects of wars and civil unrest (McCracken 1971, Kula 1988, Hall 1995). Environmental constraints, such as available mineral soils, periodic severe storm damage and unreliable natural regeneration (O'Carroll 1984) have also made a significant contribution to this scarcity of woodland, as has the grazing pressure resulting from the extensive livestock rearing that is practised in many parts of Northern Ireland (Adams 1975, Mitchell 1990a).

The legacy of English administration and the plantation of Ulster in the seventeenth century has created a farming community with relatively smallholdings and a strong attachment to their land. Forestry, in the eighteenth and nineteenth century was almost totally confined to large Anglo Irish estates and to church property (McCracken 1971). These estate woods were subjected to varying management regimes, as requirements changed from aesthetics in the 1770's (Young 1779) to short term

commercial exploitation at the end of the nineteenth century. The result of this later commercial exploitation was to practically denude Northern Ireland of its woods.

Efforts to address the shortage of timber in Ireland began in 1903 with the implementation of a series of ambitious and largely unachieved targets for State planting of exotic conifers on agriculturally marginal land (Fitzpatrick 1966, Beatty 1995). These planting programmes have increased the woodland coverage in Northern Ireland from about 2% in 1903 to about 5% in the 1990s (Beatty 1995). The economics of Irish softwood forestry in particular make it an attractive long term financial investment (Kula 1988) and this is likely to maintain planting pressure, particularly as future reforms in the Common Agricultural Policy begin to affect the viability of small farms on marginal land (Beatty 1995).

Few, if any, of the broad-leaved woodlands still extant in Ireland, and in Northern Ireland in particular, are considered 'native' (Fitzpatrick 1966, Tomlinson 1982). Nevertheless, many woodland types that are dominated by native trees have been studied. Oakwoods have been studied most comprehensively (e.g. Graham 1954, Kelly & Moore 1975, Telford 1977, Kelly 1981, Hanrahan 1997 and others). Research into ashwoods has been carried out by Kelly and Kirby (1982) and by the Department of the Environment Northern Ireland (Tomlinson 1982). Woodlands that have developed on waterlogged sites, bogs and lake margins have been studied by O'Reilly (1955), Cross (1987), Iremonger (1990) and Butler (1996). Other woodland types researched include hazel (Cooper 1984), birch, rowan, hazel (Binggeli & Rushton 1985) and yew (Mitchell 1990b).

Most of the existing broad-leaved woodland in Northern Ireland is thought to have developed from nineteenth century plantations (Fitzpatrick 1965). Graham (1981) and Cooper (1986) have researched these plantation woods, and, in addition, many have also been surveyed by the Department of Environment for possible protection under Tree Preservation Orders.

3.1.2 Farm Forestry support in Northern Ireland

The Forest Service administer a series of grants designed to meet most of the costs of establishing new woodland on agriculturally marginal land and to provide some compensation to the farmer for loss of agricultural income. The compensation paid under these schemes is now considered to amount to about 40% of the income and support that could be expected from an agricultural crop (P. Kelly Pers Comm).

The Countryside Management division of D A R D provide financial support for farmers who are willing to exclude livestock from woods in certain parts of Fermanagh covered by the Lakeland ESA.

As part of the British Silvopastoral National Network,

DANI manages two of the sites that are sometimes used during open days to demonstrate the potential of agroforestry in Northern Ireland agriculture (McAdam et al. 1997).

3.1.3 Farm Forestry in Europe and other temperate regions

Table 3.1 summarises the organisations that provide non-financial support to farm foresters in other European countries and in New Zealand. The types of support have been separated into columns to identify patterns of support structures common to most of these countries. There is clearly a considerable variation between the different countries reviewed, often as a result of geographical, cultural or historical reasons. There are, however, a number of clear patterns that emerge. State or quasi State organisations are usually responsible for providing education and for promoting the use of locally produced timber and timber products. The State also takes responsibility for establishing and maintaining silvicultural standards, particularly where strong producer co-ops are not in place. Lobbying is usually carried out by private clubs and societies; again particularly where co-ops are not strong. Organising the purchase of materials and services, and the sale of farm grown timber, is almost universally the preserve of co-operative organisations.

Recently, farmers throughout the developed world, especially smallholders and those on marginal land, have had to consider alternative forms of income because of decreasing revenues generated by traditional forms of agriculture. Overproduction of agricultural produce has also forced a shift in production to other crops in highly fertile parts of the European Union. The main alternative to traditional farming has been wood production, usually timber production, and a number of potential schemes have been promoted depending on the amount of land and of natural resources available. The promotion of farm forestry has also been encouraged by the EU as a means of counteracting environmental damage, which has ensued from intensive crop farming (e.g. Spain, Díaz Balteiro & Romero 1995).

At the same time a number of traditional practices relating to tree crops have drastically declined in Europe. Parts of southern Europe have witnessed rapid and massive changes in human activities, vegetation and landscapes (Barbero et al. 1990, Baudry & Taton 1993, Taton et al. 1994, Debussche et al. 1999) whereas traditional systems have remained largely unaltered in other parts of central Europe (Brownlow 1995).

Three main categories of farm forestry can be recognised:

1. Plantation forestry
2. Agroforestry
3. Natural and semi-natural tree resource

Depending on the location, the climatic and edaphic conditions only one of these categories may be present whereas, elsewhere, the landscape may harbour a mixture of these landuse types.

Forest or woodland ownership is also highly variable and specific to a particular country or region. It is not just the ratio of state/private forests, which varies, but also the type of private or communal ownership. In France just over 50% of the total forest area belongs to farmers (Elyakime et al. 1998), whereas in Switzerland most of the forests are communally owned (73%), although only around 5% is owned by the central or cantonal states (Mahrer 1990).

3.1.3.1. Plantation forestry

In regions with a deficit of tree resource but extensive surplus land, the establishment of tree plantation has been promoted. These plantations may also function as shelterbelts in exposed agricultural landscapes (e.g. Britain and Ireland). These plantations tend to be state owned and are based, chiefly or solely, on a limited range of fast-growing exotic species (Savill 1986). In European lowland areas on fertile set-aside land, however, the establishment of high quality timber trees is favoured, for instance wild cherry and walnut in Italy (Ducci 1993). In New Zealand a third of the tree planting is for soil conservation (Mead 1995). In Australia much planting is carried to rehabilitate degraded land (Herbohn et al. 2000) and less than 3% of the trees planted by farmers have been for commercial timber production (Race & Curtis 1996)

3.1.3.2. Agroforestry

Where suitable land is comparatively scarcer, various types of agroforestry systems have been favoured where some form of agricultural production can be continued for some time after tree planting and, in some cases, for the whole duration of the tree crop cycle. Since the mid 1980s a number of experimental networks have been set up in western Europe, including Britain and France (Etienne & Rapey 1998, Rapey et al. 1993). With regard to the tree component of the system, it either focuses on growing very fast growing species (i.e. poplars) or high value products (e.g. cherry) (Gijsbergs 1995). In other parts of the world tree species may be planted for their fruits and nuts or as a source of woodfuel (Herbohn et al. 2000). In southern France agroforestry is seen as a valuable alternative to fallow or to forestry plantations on agricultural land (Dupraz 1994). Agroforestry is also viewed as a cheaper option to establish to forestry plantations. In some instances, trees are established purely on environmental grounds. In Western Australia agroforestry systems are established to control land degradation (i.e. dryland salinity caused by shallow-rooted crops and exotic pastures, Scott 1993).

3.1.3.3. Natural and semi-natural tree resources

In some regions a substantial tree resource is commonly found in natural forests, formerly logged forests, abandoned fields or grazing land, or in the form of hedges and shelterbelts. Timber resources are thus available but often these resources are not readily harvestable to produce a timber crop and associated income. Here, novel management strategies have to be developed in order to

foster a valuable crop.

a. natural forests

In some Canadian private forests no management or harvesting has occurred in the past and new processing facilities have created a market for timber. Farmers are now seriously considering timber harvesting as a new source of income (Salkie et al. 1995). Such untouched timber resources have of course long been exploited in western Europe, but many harvested forests are sustainably managed and much effort is made to enhance tree quality and yield (e.g. oaks in Hungary, Solymos 1993).

b. traditionally logged forests and woodlands

Farm forests in the rural areas of Finland provide a substantial share of incomes but farmers' revenue has been affected by EU membership via lower agricultural prices. Thus, revenue from forest harvesting has become relatively more important and therefore farm forestry requires greater attention and investment.

Formerly logged, but degraded, forests and woodlands could be rehabilitated.

c. abandoned traditional cropping systems

Fruits of sweet chestnuts used to be the basis of the local economy in parts of southern Europe, including southern France (Arnaud et al. 1997). The rehabilitation of these abandoned groves is been considered, but much research remains to be carried out before an economically viable management system can be set up.

d. coppicing

Throughout Europe coppicing used to be a very significant form of forest management and although large areas of former coppice remain only a small proportion is still managed (Peterken 1993). Often coppiced areas were established in favourable sites. For instance, in some parts of Spain, chestnut coppice was established uphill on moisture sites, whereas on drier sites high forest of chestnut was favoured (Rubio et al. 1997).

e. pasture woodland

In some regions some types of pasture woodlands, for instance the Dehesas (sparse oak woodland over pasture and cropland) in Spain, cover huge areas (Carruthers 1993). These systems used to have great economic importance but have been in a state of decline and vegetation has rapidly changed with an increase in trees and bushes (Gomez-Limon & Fernandez 1999). However, they do have environmental and social values and the challenge is to find a way to translate all these benefits into financial incentives.

f. animal husbandry

Traditional, but often long-abandoned, systems of integrating pig and poultry productions with forestry practices are been reconsidered for traditional food production (Brownlow et al. 1993, Carruthers 1993).

3.1.4 Socio-economic aspects of farm forestry

As farming is a traditionally conservative and economically sensitive sector, a number of investigations have been carried out to investigate farmers' attitudes and understanding of forestry and the economic viability of farm forestry. In the eastern USA the uses of woodlands by

dairy farmers and their knowledge of woodland management was found to be highly variable (Teel & Lassoie 1991). Similarly the income derived from woods varied greatly (Lassoie et al. 1991). To facilitate the development and implementation of agroforestry schemes changes in Co-operative Extensions programmes were thought to be desirable.

A number of studies on farmers and public's perception of woodland, and forest resources and management have been carried out in Europe. In Finland few farmers have afforested some of their land and few intend to do so in the future despite government policy to encourage afforestation (Selby & Petajisto 1995). In this study farmers' favoured alternatives to agricultural overproduction included extensification and short-term non-food products.

Farmers, managers and the public have a different perception of the Spanish Dehesa's landscape, with the latter two groups favouring denser vegetation (Gomez-Limon & Fernandez 1999).

Whenever plantations of exotic species are established in traditional pastoral systems, like with *Pinus radiata* in Spain (Olarieta et al. 1995), investigations are instigated to determine how these plantations will fit within the farming system. In some instances, none of the silvicultural operations planned following the establishment of forestry plantations were ever carried out (e.g. Spain, Zavala & Marcos 1993) and new plans must now be drawn to manage these crops.

In the majority of instances, support schemes are imperative in order to help farmers to shift from food crops to wood production. These usually take the form of financial support, but support to obtain and learn new skills is often essential to achieve the desired transition from agriculture to forestry. In Switzerland subsidies are available to all forest owners and are given for a. forest silviculture and b. protection against natural catastrophes (Anon. 1998). In New Zealand there are almost no government incentives and the Farm Forestry Association is the major extension organisation whilst a local university provide both teaching and research (Mead 1995). In Australia the lack of a link between private small-scale growers and industry has been identified as an important impediment to farm-forestry and no viable industry has emerged (Race & Curtis 1996, 1999). The Australian governments' Farm Forestry Program was found to be lacking a systematic approach to develop farmer's knowledge and skills (Race & Curtis 1996).

Gairdner (1993) has outlined the changes in farm forestry incentives in the Irish Republic. In the early 1980s these were pretty ineffective until major additions to the level and range of support were made, although incentives to plant broadleaf's remained limited. He also pointed out that the increase grant-uptake also resulted in negative environmental impact (i.e. loss of important habitats) and

Table 3.1 Summary of results of interviews with spokesmen from organisations involved in providing support and advice to farm foresters.

Name	Organisa- tion type	Key aims	Memb- er- ship	perio- dicals	Farm walks	semi- nars	Tele- phone support	Farm visits
Premier Woodlands	Contractor	Establishment, maintenance & management of woodland	NA	No	Yes	Yes	Yes	Yes
Greenbelt Forestry	Contractor	Establish & manage plantations	NA	No	No	No	Yes	Yes
Scottish Woodlands	Contractor	Promote private forestry by encouraging uptake of woodland grant scheme	NA	Yes	No	No	Yes	Yes
Farm Relief	Contractor	Establish woodland under the woodland grant scheme	NA	Yes	No	No	Yes	Yes
Farm Woodlands	Contractor	Develop and manage plantations for clients	NA	No	No	Yes	Yes	Yes
Blakenson Houston Estate Co	Contractor	Provide a professional forestry service to clients	NA	No	No	No	Yes	Yes
Royal Forestry Society	Charitable organisation	Furthering all aspects of forestry, Pressure group for forestry issues	92	Yes	Yes	Yes (England)	No	No
Ulster Timber Growers	Loose Group supporting forestry	Representative voice and umbrella organisation for its members. Lobbying in regard to timber certification, policy issues etc.	85	No	Yes	Yes	No	No
Society of Irish Foresters	Professional body	Provide professional standards of practice in forestry. Support education and general awareness of forestry	50	Yes	Yes	Yes	Yes	No
Woodland Trust	Charitable organisation	To protect ancient woodland Create additional woodland Increase biodiversity within woods To encourage public awareness and enjoyment of woodlands	300-400	Yes	No	Yes	Yes	No
NI Forest Service	Government Agency	Extend area of woodland Promote supply of local wood Promote access & use of woodlands Protect and preserve forests Provide financial support for private woodlands	NA	Yes	Yes	Yes	Yes	Yes
DARD Countryside Management Division	Civil Service	Develop environmental sustainable farming practices Conserving landscape & heritage features Help to produce a countryside rich in wildlife and free from pollution	NA	Yes	Yes	Yes	Yes	No
Environment & Heritage Service	Government Agency	Protect & preserve man-made and natural habitats	NA	Yes	No	Yes	Yes	No
Mid Tyrone Forestry Co-op	Farm forestry co-operative	Provide support for farmers who own or manage woodland Encourage and support farmers to manage woods Assist farmers to maximise income from woodland through Co-operative sales and purchasing	50	No	Yes	Yes	No	Yes
Lakeland Timber	Farm forestry co-operative	Provide support for farmers who own or manage woodland Encourage and support farmers to manage woods Assist farmers to maximise income from woodland through Co-operative sales and purchasing	30	No	Yes	Yes	No	Yes

that reconciling high productivity with environmental concerns in private forestry would inevitably increase complexity and cost.

3.2 Farm Forestry Support Organisations

Spokesmen from sixteen organisations were interviewed to identify what support these organisations gave to farmers who own or manage woodland. Three broad groups of organisations were identified. These were:

1. Forestry consultants or contractors
2. Forestry support organisations
3. Governmental organisations

A summary of the results of these interviews is included in Table 3.1.

Consultants and contractors provided on-farm support visits to their clients, as well as providing a back-up telephone support to clients and, usually, others who had a general query about forestry. In all cases, the woodland establishment grants were seen as central within their organisations, helping to fund most of the work they carried out for their clients. Most forestry contractors provided a maintenance service for their clients, particularly during the early establishment years of a commercial forestry crop. The contractors and consultants that were surveyed all claimed that they would offer support and advice on the management of existing, maturing, woodland if asked, but that this did not constitute an important part of their work.

Two of the forestry contractors interviewed produced regular periodicals for their clients and two claimed to organise and run seminars. One company (Premier Woodlands) ran a number of farm walks to promote forestry.

The forestry support organisations provided a range of services for their members, depending on their stated aims. Some, like the Woodland trust and Conservation Volunteers, tended to support woodlands primarily to encourage the conservation of habitats. Others, like the Royal Forestry society and the Ulster Timber Growers, acted as spokesmen for forestry interests, while the Society of Irish Foresters maintained professional standards within the forestry sector. The two farm forestry co-ops, while supporting and encouraging their members in farm forestry, also tried to encourage them to manage their woods and provided their farmer members with assistance in the purchase of services and in the sale of timber. Between them, these forestry support organisations provided a wide range of forestry support, including periodicals, farm walks, seminars, telephone support and farm visits.

Of the three government organisations that had a responsibility for farm woodland, all appeared to have broadly similar aims of protecting and preserving woodland habitats or features. The Forest Service had, in

addition, a remit to extend the area of woodland in Northern Ireland and to encourage the commercial production of timber. They were also able to provide financial support for private woodlands. All three government organisations provided written promotional material for farm foresters, provided telephone advice and assistance and organised seminars. Only the Forest Service carried out farm visits, particularly with regard to an application for grant assistance, but even this organisation did not, normally, provide advice and assistance on the management of maturing woods.

3.3 Farm forestry

3.3.1 Farm information

The average size of a farm that contains woodland was 104 acres, with a range of from five to over 800 acres. Some of the smaller farms were associated with old Rectories, many of which still appear to possess visually significant woods. While this farm size is only slightly larger than the average farm size in Northern Ireland, (at 86.5 acres (***)), the inclusion of a number of very small 'farms' in the survey suggests that this difference may be significant and that larger farms are more likely to be able to support an area of woodland.

There was a wide range of farm enterprise types and a range of farmer's age within the sample; both appear to be representative of the farming community. Only 33% of the farmers sampled were full-time, compared with 57% within the Northern Irish farming community. This difference appears to be, in part, the result of the interviewer contacting an older, retired, generation that knew more about the farm woods, and partly because of the inclusion of very small 'farms' within the survey.

3.3.2 Farm woodland information

Almost 50% of the woods surveyed were below 2.0 acres, while 30% were larger than 5.0 acres. The average size of a farm wood at 5.85 acres. The farm woods surveyed amounted to 5.6% of the farms that contained them, a figure that equates closely with the present woodland cover in Northern Ireland.

There were clear differences in main species composition between the three areas sampled. In the Bann Valley birch was the most common species, dominating old cutover bogs. Oak and beech were also important, as were other species like sycamore and hazel, growing in old plantations or in relict ancient woodland sites. Spruce, larch and pine only accounted for 20% of the farm woods surveyed.

Ash and birch dominated the farm woods in Fermanagh, forming semi-natural woodland, often with a high ecological and landscape value. Oak and beech woods were less common. More recent plantation forestry was more evident than in the Bann Valley, with spruce, pine and larch accounting for 42% of the woods surveyed.

Table 3.3. The dominant tree species within farm woods in the Lower Bann Valley, Fermanagh and in Mid Tyrone, expressed as a percentage of woods surveyed.

Species	Bann Valley	Fermanagh	Mid Tyrone
Spruce	12	24	60
Oak	10	8	10
Beech	12	0	6
Ash	10	30	2
Larch	6	14	8
Birch	32	22	0
Pine	2	4	4
Fir	2	2	0
Other	14	6	10

The mid Tyrone farm woods were dominated by plantation forestry species like spruce, larch and pine that, between them, accounted for 72% of the woods surveyed. While this, in part, highlights the topographical conditions prevalent in mid Tyrone, it also suggests that a recent local tradition of farm forestry has developed in this area, and condition of the trees. Dates after 1950 were, generally, supplied by the farm owner.

Fifty percent of the farm woods surveyed were more than fifty years old. These were concentrated in Fermanagh (where semi-natural woods were dominant) and in the Lower Bann Valley (where ancient woods and plantations were important). In Mid Tyrone, on the other hand, most of the plantations were less than 30 years old, again supporting the contention that farm woodland is a relatively recent phenomenon in this area.

Table 3.4. The planting date of farm woodland in the Lower Bann Valley, Fermanagh and in Mid Tyrone expressed as a percentage of total woods in each area. Dates before 1950 were estimated from the age and condition of the trees. Dates after 1950 were, generally, supplied by the farm owner.

Planting Date	Bann Valley	Fermanagh	Mid Tyrone
Before 1900	40	54	10
1900 to 1950	26	12	10
1950 to 1960	10	4	8
1960 to 1970	6	2	2
1970 to 1980	8	12	20
1980 to 1990	6	6	20
1990 to 2000	4	10	30

3.3.3. Most significant need

Only 12.7% of the farm woods surveyed were judged not to require immediate action to ensure that the farmer's aims were met. Thinning (26%) and re-stocking (25.5%) were the most common requirements, followed by fencing (12.7%) and pruning (9% this section included the cutting of inspection racks in conifer plantations and the removal of ivy in old 'estate' woods). Other requirements, like drainage, fertiliser applications and weed control, were not significantly lacking in most of the woods surveyed (although problems with drainage had caused an immediate requirement for re-stocking in a number of instances).

A lack of thinning and pruning were the most common problems associated with the farm woods surveyed. Three species, spruce, ash and birch, were associated with a need for thinning, while the hardwoods and larch would have

benefited from pruning. Interestingly, most mature larch plantations did not require thinning and, almost uniquely amongst the species grown by farmers, appeared to produce a commercially attractive crop for them.

Almost one third of the woods surveyed were ready to be felled, either because they contained a commercially valuable crop or they were beginning to suffer from windblow. Spruce, in particular, appeared to be prone to windblow, (accounting for 53% of the cases surveyed). Drainage problems were associated with windblow and were a problem with spruce, ash and birch woods.

Access was generally acceptable for the management operations considered necessary and weed control was only rarely seen as a problem on young plantations or because of invasion of rhododendron or laurel.

Table 3.5. The management status of farm woods in the three areas surveyed. The columns numbered 1 to 3 represent the percentage of surveyed woods that fell within the condition described on the survey sheet (a copy of which is included in Appendix 1). Category 1 indicates a satisfactory condition, while Category 2 indicates that some remedial action is required. Category 3 indicates that a lack of appropriate action has resulted in the wood being damaged.

	Category1	Category2	Category3
Thinning	41.8	41.5	6.7
Pruning	47.8	50.7	1.5
Grazing	74.6	18.7	6.7
Felling	67.2	32.8	0
Coppicing	88.8	11.2	0
Windblow	62.7	23.1	14.2
Drainage	69.4	26.1	4.5
Access	77.6	20.9	1.5
Weed control	88.1	10.4	1.5

Table 3.6. The landscape and environmental impact of farm woods in the three areas surveyed. The columns numbered 1 to 5 represent the percentage of surveyed woods that fell within the condition described on the survey sheet.

	1	2	3	4	5
Visibility	0.7	8.2	51.5	36.6	3.0
Species composition	60.5	29.1	10.4		
Outline	56.7	26.1	17.2		
Ground flora	28.4	22.4	26.9	22.4	
Mantle development	46.3	20.1	33.6		
Open space species	21.6	17.9	8.2	42.5	9.7

3.3.4. Landscape and Environmental impact

Most of the woods surveyed were visible (Table 3.6), either from minor roads (Column 3) or from busy roads (Column 4). This observation is, in part, due to the method adopted for identifying sites and may not accurately describe the true pattern of farm woods in Northern Ireland.

Species composition and woodland outline were judged for their acceptability in the local landscape and for their contribution to biological diversity. Under these criteria, non-native conifers were judged not to be as acceptable as native hardwoods. Most of the woods that scored poorly in this section (Column 3) contained spruce. A lot of farm woodland has been planted on individual fields and their rectangular shape and relatively small size meant that maturing spruce plantations tended to look incongruous in the landscape.

Just over 50% of the woods surveyed had some woodland ground flora (Columns headed 1 & 2). Conversely, 22% had bare ground under their canopy, either because of deep shade (in un-thinned spruce plantations) or because of damage by grazing animals. The development of a mantle was likewise adversely affected by grazing, being found mostly on maturing plantations where animals had been excluded from the sides of the wood.

A wide variety of species were associated with open

spaces within the woods. In general, however, the pre-existing vegetation tended to dominate younger woods (species rich grass, Column 1, species poor grass, Column 2 or ericaceous shrub, Column 3). In older woods, woodland species tended to dominate (Column 4) as the mechanisms of natural re-generation began to develop.

Most of the woods surveyed had the potential of producing a commercial timber crop, particularly if ash and birch were considered to have this potential. While 87% of all the woods had a stocking density of more than 70%, the figures for spruce plantations were better, with more than 95% of them achieving a stocking density of more than 70%. Spruce plantations have been planted mostly for the commercial production of timber, whereas deciduous woods are often planted, or maintained, for their ecological and landscape interest. Because of this difference in emphasis between these two types of farm woods, it may not be the case that spruce is, inherently, more likely to produce a better stocking density than other species.

The potential quality of the timber growing within the farm woods surveyed was also acceptable, with 85% of the woods containing good or fair stems. No spruce plantations were considered to contain mainly poor or unsaleable timber, although a number of the older plantations had suffered badly from windblow.

Table 3.7. The stocking density, stem quality and yield class of the principle tree species in the farm woodland, expressed as a percentage of woods surveyed. Stem quality was judged to be good (scored 1) fair (scored 2) poor (scored 3) or un-saleable (scored 4). The stocking density, stem quality and yield class of the woods dominated by spruce is also shown.

Stocking Density	All Woods	Spruce
Less than 50%	5.2	2.3
50-60%	7.5	2.3
60-70%	16.4	11.4
70-80%	33.6	27.3
80-90%	20.9	27.3
More than 90%	16.4	29.5
Quality	All woods	Spruce
1	50	72.7
2	36.6	27.3
3	10.4	0
4	3.0	0
Yield class	All woods	Spruce
Less than 5	19.0	0
5-10	41.0	13.6
10-15	31.0	70.4
More than 15	9.0	16.0

Yield class production followed a similar pattern to that of stocking density and stem quality, with spruce plantations fairing better than average. Some of the older oak and beech woods were considered to have a low yield class, as were hazel woods. Ash and birch appeared to be the fastest growing common hardwood species encountered.

3.4. Farmer woodland knowledge

The most popular aims for farm woodland were for conservation and landscape improvement. These laudable aims do not carry an economic cost and may have been used by a few of those farmers interviewed to explain why they still retained otherwise un-productive land on their farm. It seems likely, however, that many in the farming community are aware of environmental and landscape issues and were actively preserving habitats where this was financially possible (Table 3.8).

Shelter and sporting (chiefly rough shooting) were considered important by three-quarters of those farmers

interviewed; more than those who considered timber production an important aim. This again highlights that timber production was not, necessarily, considered the prime aim of farm woodland management. Public recreation was not an important aim for most farmers, only those who had diversified their farming enterprise into tourism, or those who owned lakeshore woodland considered the public's need for recreation important.

About 60% of the woods surveyed met the specific aims of their owners, with most of the rest almost meeting their aims. Conservation and landscape aims were not met in almost 10% of cases, principally because spruce plantations of inappropriate dimensions had replaced what would have been a diverse habitat. Five percent of the woods surveyed would not produce a profitable timber crop, because of in-appropriate species mixes or because of premature windblow.

The questions 'what management operations have been carried out in the last five years' and 'what needs to be

Table 3.8. Percentage of farmers surveyed who claimed specific aims for their woods (Column 2) and the percentage of all the farm woods that fully met their owners specified aims (Column 3), barely met their owners specified aims (Column 4) or failed to meet their owners specified aims (Column 5).

Aims	%	Well met	Barely met	Not met
Tree production	63.5	28.4	29.9	5.2
Public recreation	24	13.4	10.4	0
Sporting	75	43.3	30.6	0.7
Conservation	84	45.5	28.4	9.7
Landscape	85	49.3	23.9	9.7
Shelter	74	48.5	25.4	0

done in the next five years' were not answered well, with respondents either claiming that no work had been carried out, or that 'maintenance' work had been undertaken. Because of this, and because of the list of generally negative answers often obtained early on in the interviews, these questions were dropped from the interviews.

When the farm foresters were asked 'when will your wood be ready for harvesting' 58% of the respondents did not know. This group contained many farmers who owned relict ancient or semi-natural woods, or who did not consider commercial timber production an aim for their woods. 38% of the farmers considered that their woods would be ready for harvesting within 40 years. Generally, estimates for date of final harvesting appeared rather optimistic when the woods were subsequently inspected.

Only 14% of those interviewed provided an estimate for the amount of timber, per acre that their woods would produce at final harvest. Five percent believed that they would get 500 tonnes per acre, suggesting that promotional effort by forestry contractors and other organisations is creating a rather optimistic expectancy amongst the farming community.

Only 27% of those questioned had considered how they would sell their timber. Thirteen percent thought that they would sell to a sawmill, while eleven percent thought that a forestry contractor would buy their timber and only three percent considered co-operative marketing as an option. This later result indicates that much more effort is needed from the co-operative movement if co-operative selling is to become a reality. Interestingly, a number of the farmers questioned had attempted to sell timber recently, and all of them had failed to do so.

Eighty four percent of the farmers questioned did not know how much money they would receive from their timber, however, nine percent thought that they would get £5,000.00 per acre. This suggests again that some members of the farming community have rather raised expectancies about the commercial attractiveness of timber production.

Almost 85% of the farmers questioned did not belong to any forestry organisation, while ten percent belonged to the local farm forestry co-operative and six percent belonged to other organisations, chiefly concerned with conservation. The relatively high percentage of co-operative members questioned may indicate some personal knowledge by those who carried out this survey.

When they were asked 'what forestry organisation they would consider joining' 72% of the farmers questioned answered that they would not join (Table 3.9). Twenty five percent said that they would join a local co-op if one existed. While the interviewers did not personally indicate their interest in farm forestry co-operation before this question was asked, they did state that were acting on behalf of UAOS Ltd and this information might have influenced the results obtained. Only three percent indicated they would join another organisation, all of which were conservation orientated.

Of those farmers who would ask advice on forestry, the Forest Service were considered by most to be the preferred choice, particularly in Tyrone and in the Lower Bann valley (Table 3.10). In Fermanagh the agricultural advisor was considered an important source of advice, particularly

Table 3.9. The organisations that the farm forestry owners questioned in this survey considered their main source of advice on forestry.

	All	Lower Bann	Fermanagh	Mid Tyrone
Forest Service	42%	46%	32%	50%
Co-op	10%	0%	8%	18%
Other	21%	12%	30%	18%
None	27%	42%	30%	13%

Table 3.10. Recent contact between farm foresters and the main sources of forestry information in Northern Ireland, expressed as a percentage of farmer interviews

	Never	Once	Recently	Often
Forest Service	50	8	30	12
Agricultural Advisor	77	9	12	2
Contractor / Consultant	77	0	20	3
Forest co-operative	74	0	15	11
Forestry societies	91	3	3	3
Press	50	2	32	17
Neighbours	68	3	20	15
Others (Conservation groups)	91	0	6	3

since the grants associated with the Fermanagh Lakes ESA were introduced. The farm forestry co-operatives had made more impact in Mid Tyrone than in Fermanagh. Of the other organisations cited, forestry contractors (in particular Premier Woodlands) and conservation groups were considered important. No other forestry support organisation was cited as a source of advice by those interviewed.

The Forest Service and the farming press were the most usual sources of forestry advice used by the farmers interviewed. Neighbours, forestry co-ops, agricultural advisors and forestry contractors were also regularly cited. The forestry societies and others, such as the conservation groups were much less likely to be used. When asked about the perceived quality of advice given, neighbours fared relatively badly, with 35% giving wrong or misleading information. Interestingly, both the Forest Service, the agricultural advisors and contractors were not always perceived to give good, easily understood advice. Fifteen percent of those who used the Forest Service for advice were not satisfied, either because the foresters did not appear to be interested in older woods, or because they

had originally advised that spruce could be planted on plough ridges cut into deep peat and were now suggesting that this approach was wrong. Twelve percent of respondents considered that agricultural advisors had a limited knowledge of forestry while a similar number considered that advice from forestry contractors was given to promote and support their own business activities. Advice given by the farming press and by the farm forestry co-operatives was considered to be satisfactory.

More than three quarters of the farmers interviewed in the Lower Bann Valley and in Fermanagh had not carried out any forestry maintenance works in the last five years, indicating that native woodland is not now considered suitable for management operations (Table 3.11). Even in Mid Tyrone, which was dominated by 'commercial' plantations, over 40% of these woods are not managed. More than half of maintenance work carried out on farm forests was as a result of an establishment contract, while the remainder was carried out either by family labour or as a result of a one off contract. Only one farmer, in mid Tyrone, had a regular maintenance contract for his maturing plantation.

Table 3. 11. Type of contract entered into by farm foresters when recent forestry works have been undertaken (expressed as a percentage of farmers interviewed).

	All	Bann	Fermanagh	Tyrone
None	63.4	78	76	40
Family labour	9.7	12	6	12
Establishment contract	16.4	6	12	28
Maintenance contract	0.7	0	0	2
One-off contract	9.7	4	6	18

4. Discussion and Recommendations

The farm woods in Northern Ireland combine with the extensive hedgerow network to create the impression that this province is relatively well wooded. The sheer number of these, often tiny, woods create a mosaic of semi natural habitats that vastly increase the biodiversity of our countryside. Contrary to widely held views farm woods do provide useful, if sporadic income for the farming community, either at times of National crisis (Wars, fuel shortages etc.) or, more recently and short sightedly, through agricultural improvement grants.

The following paragraphs are structured to include a short recommendation as a sub-heading, followed by an explanation and justification of that recommendation.

4.1 Remove the separate management approach presently adopted for 'commercial' and 'semi-natural' woods

It is clear from the research presented here that farm forests contains a very diverse range of woodland types. These can, however, be split into two main groups

1. Woods that contain mainly exotic conifers that have been planted to produce a commercial timber crop.
2. Woods that contain mainly deciduous species that have been retained or planted mainly for landscape or environmental reasons.

It is also clear that this division is often central to the approach adopted by farm forestry support organisations, with commercial conifer plantations not considered environmental or landscape assets and deciduous woods not considered to have any commercial value.

In much of the rest of Europe, however, the division between native 'non-commercial' and exotic 'commercial' farm woods does not exist. Of the dominant species encountered in the farm woods surveyed in Northern Ireland, only hazel is not considered normally

commercially viable, and even this produces very high financial returns where it is managed to produce faggots. The separation between these two woodland types is very deeply entrenched in Northern Ireland, particularly within the Government support organisations. There are forestry support grants available within the Fermanagh ESA designed only to protect the biodiversity of the woods, while the effect of the administration of the Farm woodland grant scheme has been to practically exclude existing, maturing woodland from receiving grant assistance. Other grant structures, designed to reduce intensive grazing, have encouraged most farm woods to be re-classified as 'rough grazing' and have effectively precluded them from receiving grants for improving their structure and commercial potential.

The effect of this separation between 'commercial' and 'native' has been to ensure that native woods have remained valueless to the farmer. This, and the refusal of successive administrations to introduce legislation to control the felling of these woods (through felling licences) has meant that many have been destroyed in the last thirty years, as farmers try to increase the financial viability of their relatively small farms. Where a similar separation between 'commercial' and 'native' has been allowed to develop in other parts of Europe (Peterken 1993), the native woodlands have also been lost in the last thirty years.

Farm woodland provides at least three distinct functions within Northern Ireland. All woods are all capable of producing some form of financial return from the sale of wood or wood products, they all have an impact in the local landscape and they all contribute to the ecological diversity to our countryside. Failure to adequately take into account any one of these three functions within the management structure of a wood will result in some financial loss, either to the woodland owner, through loss of timber sales, or to the local community, through reduced tourist potential or depressed property prices. It is clear from the results presented here that the present farm forestry support structures are not supporting these three woodland functions in individual woods. For farm forestry to become a viable, long term and attractive alternative to traditional farming enterprises, it will be important that a more holistic approach be developed with regard to their management. For this to occur, clear guidelines will be needed to ensure that all those involved in supporting or encouraging farm forestry aim to enhance the total economic functioning of woods in all cases

4.2 Develop a coherent woodland management methodology for all types of farm woods and educate the farming community about these methods

In many of the other European countries assessed, there was a clearly defined traditional method for managing their native woods. These management systems were well understood by the farm foresters and, although they may not have had a detailed knowledge of, or skills in, forestry,

they knew what operations were required to produce an acceptable timber crop. They also knew the difference between a job well done and a poorly executed contract.

In Northern Ireland, by contrast, no standard procedure exists. Even with Sitka spruce crops, there have been a number of radical changes in the standard methods employed in planting and managing these trees. These changes have included the move to mound planting and whether or how the woods should be thinned. The situation with hardwoods is more confusing for the farmer, with different advisors, often from the same Department, demanding different, and mutually excluding, management operations before forestry management grants were paid out.

While it is recognised that such changes and differences in opinion may only indicate the practical results of on-going research, they have had a serious effect on the farming community. The long-term effect of establishing small scale Sitka spruce plantations on plough ridges in deep peat is now very evident, particularly in Mid Tyrone where most of the older plantations have been devastated by windblow. The almost total absence of thinning, pruning or re-stocking within broadleaf woodlands can be attributed to the absence of an agreed method for carrying out such operations.

In the Irish Republic, the farm forestry grant structure is being developed to include payments for specific management operations like shaping, high pruning and the provision of access paths. These additional grants are creating a commonly agreed and widely understood methodology for managing woodlands through to felling. For farm forestry to start to provide some financial returns for the farming community in Northern Ireland, and therefore for it to become a valued and protected asset, the farming community must be similarly educated in the types of forestry operations that need to be carried out in their woods.

There are a lot of organisations that can and do provide support for farm forestry in Northern Ireland. Most of these organisations are focused on very specific aspects of woodland management such as conservation, woodland establishment, commercial timber production and lobbying. Between them, these organisations provide a wealth of information to the farming community. The farm foresters interviewed were reasonably well aware of many of these sources and used them on a fairly regular basis. Unfortunately, all this available and accessed information did not translate, in any way, into farmer woodland knowledge. The research presented here was designed to assess existing farmer knowledge and cannot be easily reinterpreted to provide explanations for why the available information on farm forestry is not being translated into farmer knowledge. Some additional research into this apparent failure to adequately inform the farming community about forestry, and into the role that the Agricultural Colleges could play in educating the farming

community in woodland management techniques, may be beneficial.

4.3 Re-consider Sitka spruce as a suitable species for present farm woodland afforestation schemes

Sitka spruce has dominated plantation forestry in Northern Ireland for most of the last one hundred years. It is fast growing and productive, particularly on upland sites (Fitzpatrick 1966). It is also remarkably easy to establish and, because of this, has become a firm favourite with forestry establishment contractors. Unfortunately, Sitka spruce is not, generally, windfirm, nor does it seem to respond well to nutrient deficiencies as the crop matures. Sitka spruce is usually presented for sale in large, or very large lots from state owned and managed plantations to a wood processing industry geared up to handle these large lots. Farm grown Sitka spruce, on the other hand, is often presented in small, non-managed plots that have relatively poor access. It is also very difficult to assimilate Sitka spruce into many local landscapes, particularly when it is planted in relatively small, angular fields. While almost all of the younger spruce plantations surveyed appeared attractive and in good condition, this was not the case in the older plantations, almost all of which were suffering from damaging windblow. A comparison with mature spruce plantations and mature larch plantations suggested that, under the current lack of management conditions, larch, and even Scots pine, were much more likely to produce an attractive and valuable farm wood than was spruce. This suggests that care should be taken to ensure that spruce is not favoured in future planting proposals, particularly where it is likely that woodland management will not be carried out after the establishment phase of the plantations life.

4.4 Re-assess farm forestry support organisations

The individual roles of the forestry support organisations meant that most were limited in their scope. Within the Government organisations, the apparent separation between the Forest Service, providing information on establishing farm woods and the Country Management Division, providing information on established woods dominated by native species, created a situation that the farmer needed to contact more than one individual for advice on forestry grants. Amongst the charitable organisations, the Woodland Trust and the Conservation Volunteers were clearly focused on the environmental benefits of woodland, while the Royal Forestry Society was considered by some to be somewhat elitist. Although the Ulster Timber Growers' close relationship with forestry contractors gave them an advantage when lobbying, it clearly limited their appeal to a cautious farming community, particularly as the first point of contact with this organisation was usually through the offices of a well known forestry contracting firm.

The farm forestry co-operatives have developed a surprisingly good position within the wood owning

farming community served by them, despite their continued failure to receive financial support. They are seen to be on the farmers' side when he is dealing with government agencies or contractors and their existence has encouraged competition and quality control in farm forestry contracts. For this relationship between the farmer and his farm forestry co-operative to develop, it is very important that the co-ops are not linked to commercial organisations.

4.5 Support the farm forestry movement and encourage it to assist in the management and marketing of farm woodland

There are certain areas within the farm forestry market that appear to be functioning. It is possible for a farmer to contact a forestry contractor or the Forest Service and get assistance with establishing a forestry plantation. In general, this establishment phase of the woodland works reasonably well, without too many problems. Once the woodland is established, however, support for the management of a wood, to produce timber, is not being accessed by the farming community. The result of this is that the investment in small-scale farm forestry is being lost, with poorly finished timber trees being produced. These poorly grown trees can then only be sold either when there is a severe shortage of timber from other, reliable sources or at a price that does not even cover the cost of felling or re-stocking. Unfortunately, once their financial viability is removed, farm woods are very likely to be neglected or destroyed.

The responsibility of managing maturing woods so that they provide some form of financial return to their owners, and the subsequent sale of mature timber, is seen as a priority for the farm forestry co-operative movement in the rest of Europe. These organisations are able to co-ordinate individual farmers and to encourage them to group tree maintenance operations from a number of individual farms into a sizeable contract that can then be subjected to competitive tendering. The co-ops can also assist with the presentation of timber parcels for sale and can, hopefully, create a market for farm grown timber in Northern Ireland.

Unfortunately, in Northern Ireland, the lack of a farm woodland tradition now means that the whole process of establishing and maintaining a market for farm grown timber is not likely to be self-financing. As in all sustainable forestry operations, it will be many years before a positive cashflow is established that is large enough to sustain the cost of organising a market that can produce that positive cashflow. While it is recognised that there are already some sources of finance that a farm forestry co-operative could obtain to support its services (farmers contributions, portions of woodland management grants etc), additional financial support will be required, principally to establish a farm forestry co-operative network and its associated market structures. One source for this financial support may be to allow the co-operative societies to become involved in the education and training

of the farming community in farm forestry. Such an approach would ensure that the training that the farmers received was given within the supporting and, hopefully, reinforcing structure of their local, farmer-owned, organisation. Re-directing such support away from the farm forestry co-operative movement and towards organisations whose principle aim is to lobby on their members' behalf may have important implications in the future development of the farm forestry sector in Northern Ireland.

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