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Forest Land Ownership Change in Ireland

COST Action FP1201 FACESMAP Country Report

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IN SCIENCE AND TECHNOLOGY

COST Action FP1201
Forest Land Ownership Change in Europe:
Significance for Management and Policy
(FACESMAP)

Forest Land Ownership Change in Ireland

COST Action FP1201 FACESMAP Country Report

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COST (European Cooperation in Science and Technology) is a pan-European intergovernmental organisation allowing scientists, engineers and scholars to jointly develop their ideas and initiatives across all scientific disciplines. It does so by funding science and technology networks called COST Actions, which give impetus to research, careers and innovation.

Overall, COST Actions help coordinate nationally funded research activities throughout Europe. COST ensures that less research-intensive countries gain better access to European knowledge hubs, which also allows for their integration in the European Research Area.

By promoting trans-disciplinary, original approaches and topics, addressing societal questions, COST enables breakthrough scientific and technological developments leading to new concepts and products. It thereby contributes to strengthening Europe's research and innovation capacities.

COST is implemented through the COST Association, an international not-for-profit association under Belgian law, whose members are the COST Member Countries.

Background of the project

Forest ownership is changing across Europe. In some areas a growing number of so-called "new" forest owners hold only small parcels, have no agricultural or forestry knowledge and no capacity or interest to manage their forests, while in others new community and private owners are bringing fresh interest and new objectives to woodland management. This is the outcome of various societal and political developments, including structural changes to agriculture, changes in lifestyles, as well as restitution, privatization and decentralization policies. The interactions between ownership type, actual or appropriate forest management approaches, and policy, are of fundamental importance in understanding and shaping forestry, but represent an often neglected research area.

The European COST Action FP1201 FOREST LAND OWNERSHIP CHANGES IN EUROPE: SIGNIFICANCE FOR MANAGEMENT AND POLICY (FACESMAP) aims to bring together the state-of-knowledge in this field across Europe and can build on expertise from 30 participating countries. Drawing on an evidence review across these countries, the objectives of the Action are as follows:

(1) To analyse attitudes and constraints of different forest owner types in Europe and the ongoing changes (outputs: literature survey, meta-analyses and maps).
(2) To explore innovative management approaches for new forest owner types (outputs: case studies, critical assessment).
(3) To study effective policy instruments with a comparative analysis approach (outputs: literature survey, case studies, policy analyses).
(4) To draw conclusions and recommendations for forest-related policies, forest management practice, further education and future research.

Part of the work of the COST Action is the collection of data into country reports. These are written following prepared guidelines and to a common structure in order to allow comparisons across the countries. They also stand by themselves, giving a comprehensive account on the state of knowledge on forest ownership changes in each country.

The common work in all countries comprises of a collection of quantitative data as well as qualitative description of relevant issues. The COUNTRY REPORTS of the COST Action serve the following purposes:

- Give an overview of forest ownership structures and respective changes in each country and insight on specific issues in the countries;
- Provide data for some of the central outputs that are planned in the Action, including the literature reviews;
- Provide information for further work in the Action, including sub-groups on specific topics.

A specific focus of the COST Action is on new forest owner types. It is not so much about "new forest owners" in the sense of owners who have only recently acquired their forest, but the interest is rather on new types of ownership – owners with non-traditional goals of ownership and methods of management. For the purpose of the Action, a broad definition of "new forest owner types" was chosen. In a broad understanding of new or non-traditional forest ownership we include several characteristics as possible determinants of new forest owners. The following groups may all be determined to be new forest owners:

(1) individuals or organizations that previously have not owned forest land,
(2) traditional forest owner categories who have changed motives, or introduced new goals and/or management practices for their forests,
(3) transformed public ownership categories (e.g., through privatisation, contracting out forest management, transfer to municipalities, etc.), and
(4) new legal forms of ownership in the countries (e.g. new common property regimes, community ownership), both for private and state land.

This embraces all relevant phenomena of changing forest ownership, including urban, absentee, and non-traditional or non-farm owners as well as investments of forest funds or ownership by new community initiatives, etc. Although the COST Action wants to grasp all kinds of ownership changes it has to be noted that the special interest lies on non-state forms of ownership.

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Acronyms and abbreviations

COFORD	The National Council for Forest Research and Development
CPR	Commons - forest common property regimes
DAFM	The Department of Agriculture, Food and the Marine
DEHLG	The Department of Environment, Heritage and Local Government
FAO	Food and Agriculture Organization of the United Nations
FRA	Forest Resources Assessments
FSC	Forest Stewardship Council
IFA	The Irish Farmers' Association
IFFPA	The Irish Forestry and Forest Products Association
IFORUT	The Irish Forestry Unit Trust
ITGA	Irish Timber Growers Association
NFI	National Forest Inventory
PEFC	Programme for the Endorsement of Forest Certification Schemes
REPS	Rural Environment Protection Scheme
SEAI	The Sustainable Energy Authority of Ireland
SIF	The Society of Irish Foresters
TEAGASC	The Agricultural and Food Development Authority

1. Introduction

When Ireland gained independence in 1922 approximately 1% of the land area was under forest. To address this low level of forest cover a state afforestation programme was launched. However, in an effort to protect the agricultural sector, a policy decision was made to restrict afforestation to marginal or sub-marginal agricultural land (Gray, 1963). Various planting targets were set during the first 60 years of this afforestation programme; and while these targets were generally not met, by 1980 almost 5% of the land area was under forest. The restrictions that had been placed on the type of land that could be purchased for afforestation meant that these state forests were established on impoverished soils. This limited species choice to exotic conifers, most commonly Sitka spruce (*Piceasitchensis* (Bong.) Carr.), which currently accounts for 52% of the total forest cover (Forest Service, 2013).

In 1988 Coillte Teoranta, a private limited company, was established. Its main purpose was to manage state forests on a commercial basis. It currently manages 389,356 ha of forest.

Afforestation by the private sector was minimal during much of the 20th century in Ireland. For historical reasons there was no tradition of private/farm forestry in Ireland. It has only been since the 1980s, with the introduction of European Union-subsidised afforestation grants, that private land owners, particularly farmers, have afforested their land. The level of private afforestation has grown steadily since then, peaking in 1995 when 17,353 ha were planted (Forest Service, 2007). The increase in private afforestation coincided with a decline in state afforestation and since 2001 state afforestation levels have been negligible. The shift to private afforestation also resulted in better quality land being afforested. This has resulted in increasing levels of broadleaf planting; by 2012 broadleaves accounted for 31% of the afforestation programme. The success of the afforestation programme is supported by the latest statistics from the Forest Service indicating that 10.5% of land in Ireland is now covered in forests (Forest Service, 2013).

To summarise, the past 30 years or so have witnessed a major change in forest ownership in Ireland. The State accounted for 85% of the total forest area in 1980; currently state forests account for 53.2%. The major shift to private ownership has largely been undertaken by first-time forest owners, of whom the majority are farmers. These new forest owners have little experience or knowledge of forest management; addressing this lack of knowledge and ensuring effective management of these new private forests is one of the key challenges facing the forestry sector in Ireland.

2. Methods

2.1. General approach

According to the aims of the country report which is to give a comprehensive overview of forest ownership issues in the country, a mix of methods is applied. They include a literature review, secondary data, expert interviews as well as the expert knowledge of the authors.

Data include quantitative data (from official statistics and scientific studies) as well as qualitative data (own expert knowledge, expert interviews and results from studies). A literature review explicates the state-of-knowledge in the countries and contributes to a European scale state-of-art report. Case examples are used for illustration and to gain a better understanding of mechanisms of change and of new forest owner types. Detailed analyses of the collected data and case study analyses are done in subsequent work steps in the COST Action.

2.2. Methods used

A variety of methods were used to prepare this report. First, a review of the scientific literature on forest ownership and management in Ireland was conducted. Additionally previous reports on the forest industry in Ireland including policy documents were reviewed. These were particularly useful in outlining historical trends in ownership. Statistical data were obtained from the national forest inventories and specific queries on these statistics were addressed to the national representative responsible for completing the FRA country reports. To a large extent the report relied on the expertise of the authors; all of whom are very familiar with forests and forest ownership in Ireland.

3. Literature review on forest ownership in change

The COST Action national representatives aimed to review and compile information on changes in forest ownership in their countries based on scientific and grey scientific literature, including reports and articles in national languages and official statistics, formal guidance or advisory notes from official websites, etc.

The scope of the literature review is as follows:

- Forest ownership change (with a specific focus on new forest ownership types), private forest owners' motives and behaviour, management approaches for new forest owner types, and related policies and policy instruments.

The literature review consists of the following three steps: collection of all literature as defined relevant, detailed description of 10 most relevant publications, and a 1-3 pages summary according to the structure given in the guidelines. The full list of literature includes grey literature, i.e. literature not easily accessible by regular literature search methods (unpublished study reports, articles in national languages, etc.). These references are listed at the end of the report. The 10 detailed descriptions of publications are found in the Annex. The literature review contains the following questions: Which research frameworks and research approaches are used by research? What forms of new forest ownership types are identified? Which specific forest management approaches exist or are discussed? Which policies possibly influence ownership changes in the country and which policy instruments answer to the growing share of new forest owner types?

3.1. Research framework and research approaches

Research to date has generally employed national surveys of farmers with forestry to ascertain their reasons for planting and their management goals for their forests (e.g. Ní Dhubháin et al., 2010). It has additionally focussed on the knowledge of forest management among farm forest owners (e.g. Ní Dhubháin and Wall, 1999; Ní Dhubháin and Greene, 2009). Statistical modelling approaches have been adopted to examine the characteristics of farmers with forestry (Collier et al., 2002; Howley et al., 2012). Qualitative approaches in the form of interviews have also been conducted which have sought to describe these motivations in more detail (Duesberg et al., 2013). There has also been a particular emphasis on examining barriers to farmers planting forests, related to economics, policies and attitudes (McDonagh et al., 2011; Upton et al., 2014; Duesberg et al., 2014a). Financial analysis of the outcome of planting by farmers has also been conducted to examine its potential impact on farm incomes (Breen et al., 2010; Upton et al., 2013).

Research on forest owners is primarily undertaken at University College Dublin and Teagasc (Agriculture and Food Development Authority). The involvement of private, forestry and agricultural consultants in forest research also occurs but has been limited in this area of research. A dedicated funding section of the Department of Food, Agriculture and the Marine oversees forestry research funding (COFORD) and is the primary funder of forest management and forest owner research. Internal organisational funding may also be employed for forest management projects. Other national research organisations also fund forest research such as the Environmental Protection Agency but focus on other themes.

Significant findings include a lack of knowledge and experience concerning management amongst new forest owners (Ní Dhubháin and Wall, 1999; Ní Dhubháin and Greene, 2009; Ní Dhubháin et al., 2010; Ryan et al., 2012), mixed levels of interest in engaging in management, strong preferences amongst farmers to remain in agriculture rather than enter forestry (Duesberg et al., 2014b) and the significant influence of physical factors, such as soil quality, in understanding afforestation patterns and decision making by farmers (Upton et al., 2014).

Gaps in the research surround identifying the most appropriate and effective way to transfer knowledge to new forest owners, how to efficiently manage a dispersed private estate

of small plantations, how to counteract negative views of forestry in some regions.

3.2. New forest ownership types

In contrast to the situation in other European countries, forest ownership in the Republic of Ireland was dominated by the State until the end of the 20th century. This was despite the fact that at the start of that century, the entire forest estate which amounted to 105,000 ha (i.e. 1% of the land area) was in private ownership, typically located in old estates. Government policy, once Ireland gained independence in 1922, was to focus on a state afforestation programme with the aim of generating a home-grown supply of timber. Private sector involvement in afforestation was negligible and neglect of the extant private estate continued so that by 1973 when an inventory of private woodland was conducted there were only 81,000 ha in private ownership (Purcell, 1973). The low level of private afforestation was attributed by Gillmor (1998, p.11) to the "lack of forestry consciousness and knowledge; the tendency to associate forestry with the former landlord class and later with the State; the small size of farm holdings and the competition with agriculture for the scarce land resource; the state subsidies and incentives offered to agriculture; the long term commitment inherent in the conversion of land from agriculture to the very different use of forestry; the fear of detraction from entitlements to social welfare and other benefits; and the uncertainly with regards to future marketing prospects for timber".

It was not until the launch of the first round of EU funding for afforestation in 1982 (under EC Reg. 1280/80) that private sector involvement in afforestation was triggered. This scheme was targeted at farmers living in the western, more disadvantaged parts of the country with the aim of providing them with an alternative source of income. It provided up to 85% of the costs of forest establishment (Howley et al., 2012). In the initial years of the scheme uptake by farmers was low. The introduction of 100% establishment grants and a scheme in 1987 to compensate farmers for income foregone removed a major barrier to afforestation. In 1989, private planting exceeded state planting for the first time (Figure 1). The introduction of the Forest Premium Scheme in 1990 "provided the most important new incentive for forestry development in Ireland to date" (Howley et al., 2012, p. 35). This provided compensation for the agricultural income foregone and planting rates accelerated (Figure 1). However despite the increases in grant and premium rates the general trend since 2000 has been downward (Breen et al., 2010).

The historical context outlined above illustrates that there is no tradition of private ownership in Ireland and hence no "traditional" forest owner. The very small number of land owners who engaged in forestry in the 20th century were typically the remnants of the landlord class that remained following the Land Acts of the late 19th century that transferred ownership of the land from landlord to tenant. The estimated 20,000 land owners (Forest Service, 2014) who afforested land for the first time during the years 1980 to 2012, can all be classed as "new" forest owners. Differential premiums rates are payable to farmers and non-farmers. Using this information the Forest Service (2013) estimates that between 1980 and 2012 85% of the forest owners can be classed as farmers, which equates to 82% of the area afforested in this time period. Limited information on the characteristics of these owners is retained on the Forest Service database and what is known about them can be gleaned from surveys that have been conducted.

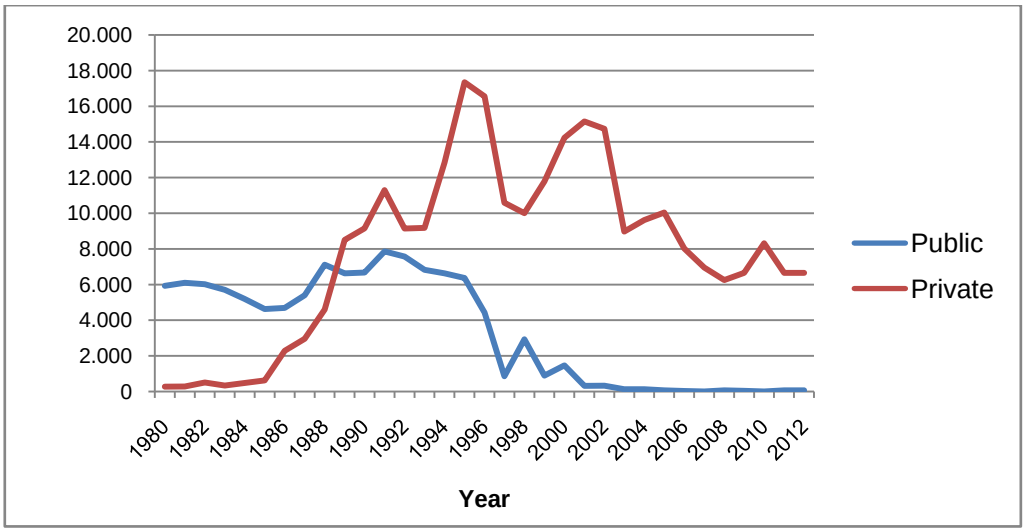


Figure 1: Public and private afforestation rates (hectares) in Ireland. Source: (Forest Service 2013)

In 1995, a survey of 108 private forest owners who had availed of grant-aid for afforestation found that many private forest owners have multiple objectives for their forests (Ní Dhubháin and Wall, 1999). Ninety percent intended to produce timber for sale. The production of timber for domestic use (e.g. for fencing or for firewood) was also a popular use for the forest (45%), as was the provision of recreation for the owner and his/her family (42%). A more recent survey of forest owners indicated that 49% had multiple objectives but that the majority of owners had timber production as an objective (Ní Dhubháin et al., 2010).

3.3. Forest management approaches

New forest owners in Ireland are primarily farmers who have planted a portion of their land holding in the last two decades. Statistics from the Irish Forest Service suggest that 82% of the area planted since 1980 has been undertaken by farmers (Forest Service, 2013). Establishment of these forests was overseen by professional foresters as a requirement of receiving funding from the state. This frequently involved foresters managing the total process of afforestation and establishment up to year 4. The Forest Service only requires those forest owners who have broadleaf plantations in excess of 5 hectares or conifer plantations in excess of 10 hectares to submit management plans (Forest Service, 2011). These must be written by a professional forester. Input from land owners was perceived as limited which may have resulted in a disconnect between land owners and their forest (Ní Dhubháin and Wall, 1999). This may have been exacerbated for land owners who were motivated primarily by receiving the annual premium. Thus, forest policies directed at private land owners have generally taken a top down approach to date. Questions surround the interest and ability of new forest owners to undertake management of their forests directly (Ní Dhubháin et al., 2010). Given the spike in private planting in the mid-1990s the thinning of private forests is a significant concern at present. Teagasc estimates that only approximately 6,000 hectares, of the 20,000 hectares that should be, are currently being thinned annually (Casey and Ryan, 2012). A number of initiatives have been undertaken to counter this disconnect and to encourage greater engagement by land owners in the management of their forests. One approach to knowledge transfer to new forest owners has been the establishment of producer groups and cooperatives. This has been driven by local forest owners themselves with the assistance of Teagasc (Casey, 2010).

Forests in Ireland are generally managed under an intensive clearfell system with the maximisation of net present value as the primary goal. The relatively high growth rates and highly mechanised nature of harvesting in Ireland results in relatively short rotations. Management has typically followed the British Forestry Commission Yield models

intermediate thinning approach but the development of dynamic models has introduced greater flexibility into management options. However, use of yield models and forest planning has primarily been the concern of professional foresters. To date forest thinning has primarily been undertaken by contractors on behalf of timber processors and other purchasers who buy timber standing from land owners.

Afforestation and management has focused on coniferous species, particularly Sitka spruce. The proportion of broadleaves being planted has increased in recent years and research is being conducted on appropriate management of broadleaves (Figure 2). Interest in continuous cover forestry (CCF) systems is increasing. Pro Silva Ireland was established in 2000 and promotes CCF in Ireland and has encountered growing numbers of small forest owners at their field days.

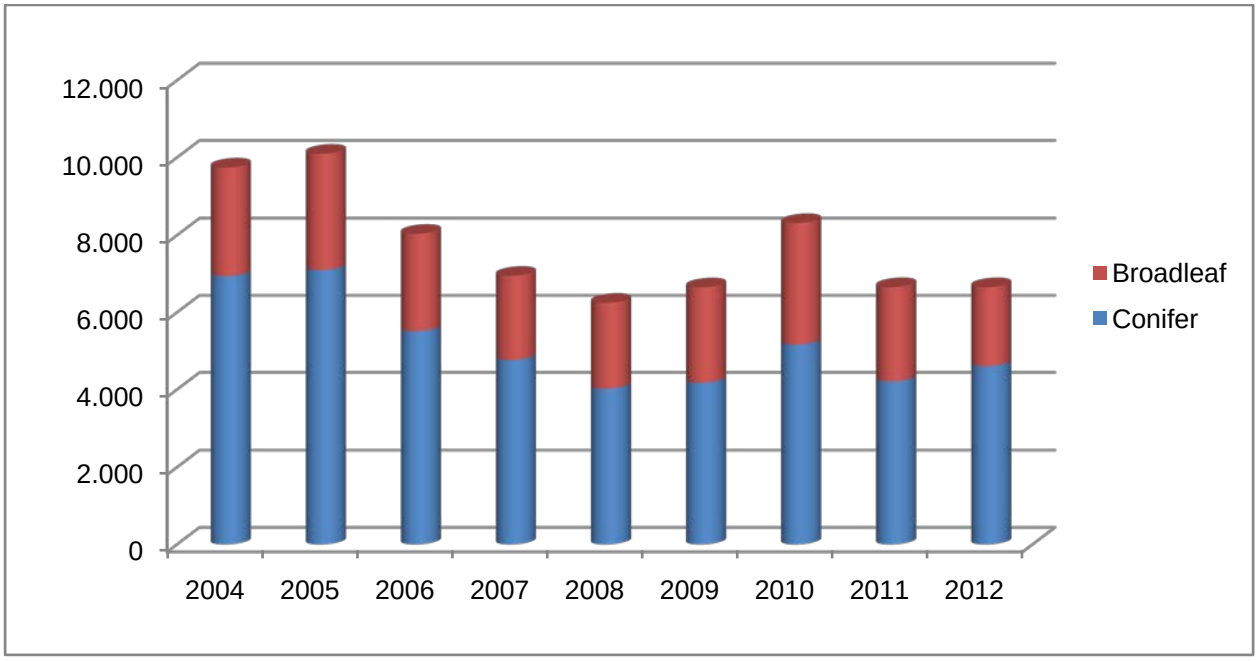


Figure 2: Afforestation rates by species type. (Source: Forest Service (2013a))

3.4. Policy change / policy instruments

The emergence of private forestry in Ireland can almost be entirely attributed to the availability of policy instruments of establishment grants and forest premiums. Eighty percent of those surveyed in Maguire (2008) indicated they would not have planted their land if grants and premiums were not available. McCarthy et al. (2003) used a panel regression model to explore the factors that influenced afforestation rates in Ireland. They found that the afforestation grant and premium payments significantly influenced the decision to afforest land. The rationale for making these financial supports available was the afforestation of land privately owned so the policy tool has proved successful. However the afforestation targets set by the Government have not been reached despite the availability of these incentives. In the Government's most recent policy document (DAFM, 2014) the failure to reach targets was attributed to a number of factors, including (a) reduced funding in 2003 which undermined confidence in afforestation for a number of years, (b) the dramatic increase in land prices, (c) the success of competing land schemes e.g. Rural Environment Protection Scheme (REPS), (d) the progressive withdrawal of Coillte from afforestation since 1997 following an adverse decision by the European Commission on its eligibility for premium payments although this was in part mitigated by the entrance of private investment sources such as pension funds and (e) constraints on land availability due to increased regulatory requirements. Recent surveys have identified cattle farmers as the

group of farmers most likely to convert land to forestry (Ryan et al., 2008) however the loss of the cattle subsidies and direct payments which were available to these farmers may have acted as a disincentive to afforestation (Ryan et al., 2014).

It is important to note that there is a requirement that the forest stands that attract grant-aid from the Forest Service must be capable of producing a commercial sawlog crop of wood where commercial wood is defined as timber suitable for industrial end use (Forest Service, 2011), which clearly reflects the major objective of the afforestation programme, i.e. timber production. The need to provide training for the new forest owners was acknowledged in Government policy (DAFF, 1996) and hence training courses are available to forest owners. These are funded by the Government and are generally provided by Teagasc and recently focus on aspects of preparing owners to thin their stands and market their timber. There are also courses to help forest owners to manage broadleaf stands. Attendance by owners is voluntary and studies have shown that the uptake is poor (Ní Dhubháin and Greene, 2009; Ní Dhubháin et al., 2010). It has been suggested (e.g. DAFF, 1996) that attendance at training courses should be a prerequisite to the receipt of the forest premium payments but this suggestion has never been implemented.

4. Forest ownership

The aim of this chapter is to give a detailed overview of forest ownership in the country. The most detailed information on the national level is often structured in different ways in different countries. In order to show the most accurate information, it was decided to use the national data sets in the country reports. In order to make this information comparable still, the information is also collected in an international format which is used in the Forest Resources Assessments by FAO. The transfer from national data sets to international definitions is, however, not always easy. This report therefore critically assesses in how far the national categories and definitions may be transformed into the international FRA data structure or in how far there are inconsistencies between them.

4.1. Forest ownership structure

4.1.1. National data set

The total forest estate in Ireland is 731,652 hectares of which 53.2% is publicly owned (Table 1). Public forests are defined in the National Forest Inventory (NFI) as all state owned forests (Forest Service, 2007). Coillte Teo (the Irish Forestry Board) accounts for almost all of the publicly owned forest. The remainder of the public forest estate is managed by the National Parks and Wildlife Service and comprises a number of National Parks and conservation forests managed primarily for amenity and conservation purposes. A number of local authorities (e.g. City and County Councils) also manage some amenity forests, the area of which is extremely small. Almost 47% of the forest estate is in private ownership. A National Forest Inventory was conducted in Ireland for the first time in 2007 (Forest Service, 2007). A second inventory has recently been completed (Forest Service, 2013).

The NFI distinguishes two types of privately owned forests; private (grant-aided): this is privately afforested land which was in receipt of financial subsidies in the form of establishment grants and/or afforestation premium payments since 1980; and private (other) these are non grant-aided plantations) (Forest Service 2007).

Table 1: Forest ownership in Ireland

Ownership	Area (ha)	%
Public	389,356	53.2
Private (grant-aided)	212,202	34.0
Private (other)	93,742	12.8
Total	731,652	100

Source: Ireland's NFI 2012.

4.1.2. Critical comparison with national data in FRA reporting

The NFI data are used to produce the FRA report and similar ownership definitions are used in both reports. The NFI was conducted in 2007 and in 2012 hence some interpolation and extrapolation is used to give the figures for the FRA years, i.e. 2005 and 2010. From the 2015 report onwards private ownership data will be separated into area owned by individuals and areas owned by businesses. The 7 year gap in the data shown below explains the difference in the areas recorded; in Ireland afforestation of agricultural land occurs annually, hence the area in private ownership has increased since 2005. There has been a slight decline in the area in public ownership as forest land is sold.

FRA 2010 Categories	Forestarea (1000hectares)	
	2005	2012
Public ownership	400	389
Private ownership	295	342
...of which owned by individuals	n.a.	n.a.
...of which owned byprivatebusinessentities andinstitutions	n.a.	n.a.
...of which owned by local communities	n.a.	n.a.
...of which owned by indigenous/ tribalcommunities	0	0
TOTAL	**695**	**731**

4.2. Unclear or disputed forest ownership

There are no situations where ownership is unclear or disputed.

4.3. Legal provisions on buying or inheriting forests

4.3.1. Legal restrictions for buying or selling forests

There are no legal restrictions on buying or selling forest, however if the forest is currently attracting a premium payment and if the new owner wishes to receive this premium, he/she must undertake to continue to manage the forest for the rest of the forest premium period. Premiums are paid for 20 years if the owner is a farmer, non-farmers receive premium payments for 15 years.

Felling is controlled under the 1946 Forestry Act (currently being revised). A general felling licence is required to carry out thinning operations and lasts for a period of five years. A limited felling licence is required to clearfell a forest and replanting of the cleared area is a condition of the limited felling licence. Hence once a piece of land is afforested and becomes a forest it must remain a forest.

4.3.2. Specific inheritance (or marriage) rules applied to forests

There are no specific inheritance rules that apply to forests.

4.4. Changes of the forest ownership structure in last three decades

4.4.1. Changes between public and private ownership

There has been a major change in ownership over the past three decades. In 1980, 15% of the estate was in private ownership (Forest and Wildlife Service, 1980). As a result of the afforestation programme referred to elsewhere in this report, private afforestation has increased since 1980 so that in 2012 47% of the forest estate is now privately owned (Forest Service, 2013).

4.4.2. Changes within public ownership categories

Up until 1988 the Forest Service was responsible for the management of the State forests as well as acting as the regulatory authority for forestry in Ireland. With the passing of the 1988 Forestry Act Coillte Teoranta – The Irish Forestry Board Limited- was established to take over the ownership and management of state forests with the aim of managing these on a commercial basis. Coillte is a semi-state company with two shareholders – the Minister for Forestry and the Minister for Finance.

4.4.3. Changes within private forest ownership

As highlighted elsewhere a significant proportion of the private estate has been

established in the past 30 years (212,202 ha), hence the owners of this area are all "new owners" and are predominantly farmers (82%). It is not known who owns the remainder of the private forest land (i.e. private other) but in the authors' experience it is likely that they are made up of forestry companies and investment companies as well as relatively large land owners on whose land there has been trees for a long period of time. It could be said that the latter group represent traditional forest owners; they are, however, very few in number.

4.4.4. Main trends of forest ownership change

Across Europe, the following drivers for ownership changes have been identified in the COST Action:

- Privatization, or restitution, of forest land (giving or selling state forest land to private people or bodies)
- Privatization of public forest management (introduction of private forms of management, e.g. state owned company)
- New private forest owners who have bought forests
- New forest ownership through afforestation of formerly agricultural or waste lands
- Changing life style, motivations and attitudes of forest owners (e.g. when farms are given up or heirs are not farmers any more)

In Ireland there are only two key trends in ownership. As outlined previously through the formation of Coillte Teo in 1988, public forest management essentially became privatised in 1988; however it is likely no further changes will be experienced in this regard. In 2011 the government indicated that it was considering the possibility of selling off the harvesting rights to some of the State forests to private people/bodies; however, in 2013 it was decided that this would not happen in the foreseeable future.

The other key trend is the emergence of new forest ownership arising from the afforestation of agricultural land. This has been very significant in Ireland resulting in 261,290 ha being afforested or approximately 3% of the land area since 1980. The Government is still committed to an afforestation programme and the latest government policy document (DAFM, 2014) reiterated the commitment to an afforestation programme of 10,000 ha per annum to the year 2015 and 15,000 per annum thereafter to the year 2045. Hence this trend in ownership is likely to continue for the foreseeable future.

Trends in forest ownership: New forest ownership through…	**Significance***
• Privatization, or restitution, of forest land (giving or selling state forest land to private people or bodies)	0
• Privatization of public forest management (introduction of private forms of management, e.g. state owned company)	*3*
• New private forest owners who have bought forests	0
• New forest ownership through afforestation of formerly agricultural or waste lands	*3*
• Changing life style, motivations and attitudes of forest owners (e.g. when farms are given up or heirs are not farmers any more)	*0*
• Other trend, namely:	

** 0 (not relevant); 1 (to some extent); 2 (rather important); 3 (highly important)*

CASE STUDY 1: NEW FOREST OWNERSHIP THROUGH AFFORESTATION

John Murphy is a livestock farmer based in North-west Cork. He and his wife own the 40 hectare farm. The farm enterprise is mainly dry stock cattle. In 1990 John and his wife made the decision to afforest a 8 hectare section of their farm. The quality of the land in this section of this farm was poor and too wet to allow cattle on. The attractive premiums that were available at the time meant that this piece of ground which had not been generating agricultural income could now be put to financial use. John contacted a forest management company based in the area. The professional forester working for the company indicated that he would apply for grant-aid and the premium and undertake the establishment work. In return the company would receive the grant. The forester recommended that Sitka spruce be planted. Since the crop was established John received an annual premium until 20 years after establishment. He has never visited his forest and has no idea what state it is in. The professional forester has also had nothing to do with the forest for 16 years. Now that he is no longer in receipt of income from the forest the farmer is wondering what to do. He is aware that in a forest owned by his neighbour a machine is removing some of the trees which are then being sold to a local sawmill. He plans to investigate the option of harvesting his stand further.

CASE STUDY 2: NEW FOREST OWNERSHIP THROUGH AFFORESTATION
In 1989 James O'Sullivan encouraged his father to plant 10.5 ha of marginal agricultural land away from the farm. His father was unsure due to the permanency of the land use change but felt on balance that that land was "of no other use". James would freely admit that they were looking no further than the grant at the beginning when they planted the Sitka spruce crop. A further 1.5 ha of Sitka spruce and ash were planted in 1994.Following advice from the forestry company and Teagasc, it was decided that the 1989 crop was fit for thinning in 2010. The crop was sold standing and approximately 350 tonnes were harvested from the site. The successful and profitable thinning of this crop prompted James to consider further planting. James felt that planting broadleaves "was better for the environment in the long run and better for my pocket in the short term". James also felt that planting broadleaves close to the house would leave the farm in a better condition for the next generation, so he planted 5.6 ha and 4.5 ha of oak, ash and birch in 2011 and 2012 respectively. His only regret is that he did not plant more twenty years ago!!

4.5. Gender issues in relation to forest ownership

A survey of a small number of forest owners estimated that 83% of forest owners are male (Greene, 2006). Experts from the Forest Service indicate that it may be possible to access data on ownership by gender for the portion of the private estate that has been grant-aided (since 1980).

4.6. Charitable, NGO or not-for-profit ownership of the forests

This section is concerned with forests owned by organisations such as conservation and heritage NGOs, self-organised community-based institutions and other philanthropic ("Characterized or motivated by philanthropy; benevolent; humane" OED) organisations. The management objective for these forests is usually to deliver social or environmental aims with maximisation of financial or timber returns as a secondary concern. Most owners are corporate and may invoke at least an element of group or participatory decision-making on management objectives and high ethical standards. It is possible for such ownership to be entirely private. However, the provision of public benefits (services (e.g. biodiversity, amenity, recreation etc.) which are free for everyone to enjoy or provide benefits to local communities (employment for disadvantaged people etc.) are sometimes recognised in the form of charitable registration. This in turn puts restrictions on the rights of the owners to use profits and to dispose of assets in exchange for tax exemptions and access to charitable funding.

Forests owned by …	Yes	No	Uncertain
• Foundations or trusts	X		
• NGO with environmental or social objectives	X		
• Self-organised local community groups			
• Co-operatives/forest owner associations		X	
• Social enterprises			X
• Recognized charitable status for land owners			X
• Other forms of charitable ownerships, namely:			X

Foundations / Trust

There are some private forestry trusts/foundations in existence. Some of them are family situations, to manage/hold inheritances. Another example is The Paul O'Dwyer Forestry Fund which planted approx 40 ha of grant-aided forest to help finance the Cheshire Retirement Home in Bohola, Co Mayo. The Irish Forestry Unit Trust (IforUt) was established in 1994 to facilitate investment in forestry by institutional investors. It currently manages 14,000 ha, some of which was purchased from private forest owners, some of which it has leased from Coillte.

NGO

The area owned or managed by NGOs is very limited. Balrath wood, Co. Meath, is managed by the Tree Council of Ireland as an outdoor classroom.

Co-operatives

Forest owner associations and co-operatives exist in Ireland but they don't own the land. Ownership of the forest land remains with the members of Forest Owner Groups (these are dealt with in section 5.2).

CASE STUDY 3: BALRATH WOOD – EXAMPLE OF NGO MANAGED WOOD

Balrath Wood is owned by Coillte but has been restored by an NGO "The Tree Council of Ireland" as part of their "outdoor classroom" project aimed at Irish school children and their teachers. The Tree Council, Coillte, Balrath Wood Preservation Group and Meath County Council all collaborate in the project which is part-funded by the Forest Service. There is a nature wood, developed as an outdoor classroom for teachers.

4.7. Common pool resources regimes

Commons - forest common property regimes (CPR) are resource regimes where property is shared among users and management rules are derived and operated on self-management, collective actions and self-organization (of rules and decisions). Examples of traditional CPR regime are pastures, forest land communities in Sweden, Slovakia, Romania Italy and other European countries or irrigation systems in Africa or Asia. The number of new common property regimes is growing and it is challenge of this Action to transfer knowledge and skills of traditional CPRs to new CPRs and vice versa. Example of new CPR regime is community woodlands in UK, established in last 20 years mainly in Scotland, Wales. Our interest in" traditional" and "new" common pool resources regimes (CPRs) in European forest, is based on the understanding that robust resource regimes are critical for sustainable forest management regardless of the property rights. Ongoing practice shows that local land users (without ownership share) leased use agreement may also be CPR regime if they have the rights to determine management rules typical for commons (e.g. self-organisation and shared rights and responsibilities). Thus proper rules on management (harvesting, decision making and conflict resolution mechanism, cost/benefit sharing, sanctioning etc) are key for sustainable use of CPR regimes.

There are no forest common property regimes in Ireland. As outlined elsewhere in this report historically there has been limited private forest ownership in Ireland and it is only in the past three decades that private land has been afforested. Commonage refers to grazing lands in Ireland that are jointly owned as well as to other lands (not necessarily jointly owned) over which two or more farmers have grazing rights. Hence for such common land to be afforested, where owned, would require the agreement of all the owners. This has yet to happen and is unlikely to happen.

5. Forest management approaches for new forest owner types

The Action is interested if there are any new forest management approaches that specifically address new forest owner types, or that could be particularly relevant for new forest owner types. We are aware that there is not much awareness for this and that there is not much literature available, however, we are convinced that this is an issue: if owners have different goals for their forests there must be new kinds of management, if they have not the skills any more to do it themselves then there must be new service offers, etc. There are assumingly implications in silviculture, technology, work organisation, business models, etc. Such new approaches may be discussed under the key word of new ownership types but often not.

5.1. Forest management in Ireland

The Forest Service, Department of Agriculture, Food and the Marine is tasked with regulating forest management, overseeing and distributing financial supports and promoting forestry in Ireland. The Forestry Development Department of Teagasc, the Agriculture and Food Development Authority, undertakes extension and research services.

Commercial state forests are managed by Coillte, the Irish Forestry Board, and are certified by FSC and are currently in the process of being certified by PEFC. Coillte has also entered partnership schemes with some small land owners, primarily farmers, where the establishment and management of the forest is undertaken by Coillte on land owned by the farmer and timber profits are shared. This partnership lasts the full rotation (typically c.40 years). Management in the partnership scheme is according to management plans drawn up by Coillte. Public forests also include National Parks and conservation forests which are managed by the National Parks and Wildlife Service for primarily amenity and conservation purposes. A number of local authorities (e.g. City and County Councils) also manage some amenity forests and these are also classed as public forests.

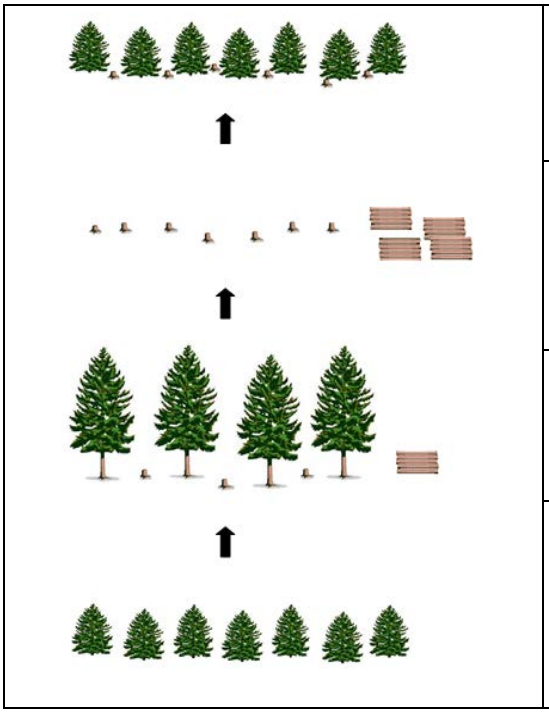
Private forests can be divided along a number of lines. The largest group of private owners are farmers who have planted some of their land holding. These forests were established under the supervision of professionally trained foresters, which is a requirement of attaining grant-aid. A further requirement of receipt of grant-aid is that a management plan should be drawn up by a professional forester but this currently only applies to those owning plantations which are 10 hectares or greater or those owning broadleaf plantations which are greater than 5 hectares. This plan only covers the 20 year period following the establishment of the plantation (i.e. the period for which the forest owners receive subsidies). Despite this requirement, significant uncertainty surrounds the issue of management of these new forests. Private owners have displayed high levels of interest in undertaking harvesting and timber sales themselves and this is reflected in large turn-outs at field days and contacts with extension services. Yet this interest does not always translate into action it is estimated that only approximately 6,000 hectares, of the 20,000 hectares that should be, are currently being thinned annually (Casey and Ryan, 2012).

A typical rotation and associated management is outlined in Figure 3. Very few private forest owners have had their forest and management certified. A significant minority of the private estate is owned and/or managed by trusts on behalf of individual or institutional investors. Management of these private investment forests is undertaken by forest management companies on a long term contract. Although some of this area is SFM certified the primary goal is one of profit maximisation, and rotations and harvesting reflect that. Some other small, individual investors own forests in Ireland but this area is unknown but it is common for such individuals to employ forest management companies for specific management interventions.

Currently a new Forestry Act is being considered by the Irish Government. One of the elements of this new Act is the

requirement for all forest owners to submit a management plan to the Forest Service. This Act has yet to be approved by Parliament but reflects the emphasis the Irish government is placing on the management of private forests.

The Irish Farmers' Association (IFA) represents the interests of farmers, including private forest owners, throughout the country and currently has over 88,000 members and 946 branches. It has a dedicated forestry section, IFA Farm Forestry, for the past twenty years which represents farmers with forests in Ireland. It currently has approximately 5,000 active members. In addition, the Irish Timber Growers Association (ITGA) represents the interests of private forest owners in general.The ITGA was formed in 1977 to support the development and expansion of private sector forestry in Ireland and to represent and inform woodland owners. It is now the recognised national representative body of private woodland owners in Ireland. The Association is particularly concerned that private plantations achieve their maximum potential by the implementation of good forest management practices throughout their rotation. Both of these associations primarily act as lobby groups; they are not directly involved in the production of forestry plans; nor are they directly involved in organising harvesting and sales as is the case with forest owner associations in other countries.



Year 20-45 Forest management company or consultant employed to manage thinning or clearfell harvesting. Timber sold standing and operations undertaken by contractor.
Year 4-20 Some management interventions may be undertaken by land owner such as pruning or cutting inspection paths.
Year 1-20 Annual premium paid for 20 years for farmers or 15 years for non-farmers
Year 1-4 Four year contract with forestry company for establishment of forest. Grant linked to establishment of plantation in year 4 (25% of grant withheld up to this point). Shaping of broadleaves is mandatory but grant-aided.

Figure 3: Typical management cycle for single rotation in Ireland (by authors)

5.2. New or innovative forest management approaches relevant for new forest owner types

The most significant development in the last decade has been the formation of forest co-operatives and producer groups, where groups of private forest owners, farmers in particular, meet on a regular basis to discuss forest management and organise forest management operations on a communal basis. The first of these producer groups was established in 2005 and at present, there are 26 such groups in operation around Ireland (Figure 4) with over 1,900 members. The focus of the producer groups is on encouraging forest owners to actively manage their stands with a particular emphasis on working together to thin them. This is achieved by encouraging forest owners who have forest stands that are due to be thinned at the same time and that are close to each other to "cluster" the forests together. This would make the thinning

operation more attractive to harvesting contractors and all would benefit from economies of scale. The legal structure varies in the producer groups. Some are co-operatives, e.g. the Donegal Woodland Owners Society Ltd (DWOSL), and members of this co-operative must own forest land in Co. Donegal. Each member owns one share in the Society, irrespective of the size of their woodland. The DWOSL has been in operation since 2008. It aims to maximise returns to forest owners through good forest management services and to add value locally to its members' timber, thus creating sustainable employment from their members' forests (Teagasc, 2012). DWOSL provides a range of services for its members, including forest maintenance and administration work, timber marketing and firewood sales, field days, study trips, newsletters and farm machinery hire. DSOWL has entered the Energy Supply Contract (ESCo) market and has targeted private nursing homes and other large building owners to supply heat through the installation of wood gasification boilers (DWOSL, 2012).

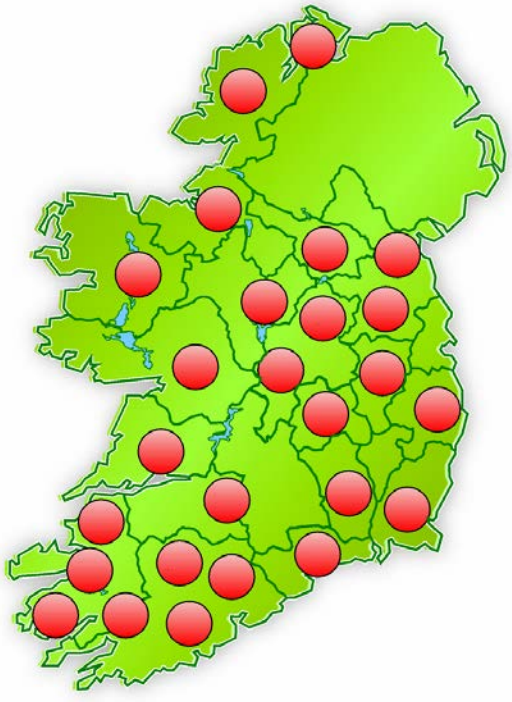


Figure 4: Location of producers groups (Teagasc, 2013)

The isolation of farm forest owners speaks to the lack of a strong forest management culture in Ireland, where farmers see afforestation as a scheme rather than an investment (Malone, 2008). This is borne out by Ní Dhubháin et al. (2010) who found that only 11% of farm forest owners they surveyed viewed their forest as an investment. The same survey also found that while 72% of respondents planned to thin their forest, only half of these forests were suitable for thinning. This shows the clear need for farm forest owners to cooperate in terms of knowledge dissemination, up-skilling and cost-sharing so the best economic return from the asset is realised at maturity. In this context, a significant challenge facing new forest owners is developing knowledge and skills to manage and understand what is, for many, a new land use.

Forest harvesting operations present challenges to forest owners in Ireland due to the lack of traditional forestry knowledge. Participants at a forest thinning demonstration in 2009 were surveyed as to a) their level of knowledge of thinning before attending; b) after attending and c) whether they intended to carry out forest management operations having attended. Analysis of a retrospective pre-test questionnaire showed that participants significantly increased their level of knowledge on thinning. Many participants also stated their intentions to carry out management operations. Two years later, a phone survey was conducted to ascertain whether they had carried out these operations. Only 8% had thinned their forests. Of those who hadn't thinned, 58% of the forests were not ready, 21% of owners were in the process of thinning and 16% were unsure/didn't know. Even though participants confirmed that they found the demonstration "useful" and "informative", 58% of those who had not thinned felt they needed further advice on thinning and many revealed that they had forgotten much of what they had learnt at the demonstration. It is concluded that one-off events, may not be sufficient to ensure technology/practice adoption and that subsequent targeted follow up may be needed to encourage practice change amongst Irish forest owners (Ryan et al., 2012).

Although the clearfell system is by far the most commonly practised form of silviculture in Ireland there is increasing interest in continuous cover systems. This is reflected in large attendance at open days organised by Pro Silva Ireland directed at farmers.

5.3. Main opportunities for innovative forest management

Knowledge transfer will continue to be a significant driver of innovation amongst new forest owners. The expanding biomass industry has also led to the organisation of forest owners through producer groups. The increasing emphasis on forest ecosystem services has the potential to lead to the development of payments for ecosystem services schemes (PES) and the diversification of management objectives. Previous schemes have been developed to enhance the recreational or environmental benefits of forests (e.g. Forest Recreation Scheme, The Forest Environmental Protection Scheme, Native Woodland Scheme, Neighbourwood Scheme).

5.4. Obstacles for innovative forest management approaches

New forest owners lack experience of forest management, which may limit their willingness to adopt new approaches. Although new owners may exhibit interest in managing their forests, as reflected in attendance at knowledge transfer events, a lack of knowledge and experience may inhibit their ability to engage in management themselves. Ryan et al. (2012) interviewed forest owners during a thinning knowledge transfer event and two years afterwards. They found that owners described the event as useful and had indicated an expectation to thin their forest only 8% had actually done so two years later. However, 58% had cut their inspection paths which would suggest that the development of effective knowledge transfer may be a slow but successful process.

The regulatory and financial support systems are designed around specific management techniques and lack flexibility to support the adoption of new silvicultural systems. Environmental designations are impacting on afforestation and harvesting in specific areas but do not act as an obstacle to innovation per se. These designations may act as drivers of change if acceptable management strategies could be designed that satisfy conservation and land owner goals.

CASE STUDY 4: THE CLARE WOOD ENERGY PROJECT

County Clare, in the west of Ireland is one of the most highly afforested counties. A report was published in 2004 which outlined the potential markets for wood in the County (PTR, 2004). The report highlighted the amount of early thinning that would be conducted in the coming years and that the low value of pulp wood from forestry thinnings meant that only local markets for timber could be reached profitably. The report identified the potential for local energy needs to be met by using forestry thinnings to feed bioenergy plants, thus addressing both the supply of low value wood and the growing demand for biomass for energy. In 2005 the Forest Service funded the establishment of the County Clare Wood Energy Project which is co-managed by Clare Leader and Teagasc. The project led to the successful installation of a total wood chip boiler capacity of 2.5 MW in a range of local buildings (a hotel, county council offices, nursing home, factory and swimming pool). Chip was sourced from local, private forests and processed by a heat entrepreneur, who was also assisted by the project. Demand for chip was estimated at 2,000 tonnes per year which requires the first thinnings of 175 ha per year. In recent years Teagasc has assisted with the clustering of owners based on management needs to build economies of scale in both the management of forests and the harvesting of timber. The project has successfully brought together new forest owners to manage their forests actively and in collaboration. In addition to the formation of new local industries, this has resulted in the development of significant knowledge levels amongst new forest owners.

CASE STUDY 5: JOHN KENNY, FAIRYMOUNT FARM, TIPPERARY

John Kenny is a sheep and horse farmer who owns approximately 150 hectares of land in the mid-west of Ireland. Over the last two decades John has established a number of conifer and broadleaf stands on his land and manages them for multiple objectives. The farm also has three self-catering cottages and one of the goals of establishing the forest has been to enhance the amenity value of his land. Such multi-purpose management is unusual in Ireland and highlights the potential for new forest owners to diversify their forest management goals. John has built paths and facilities in his forests and charges an entrance fee to users. This has created an additional source of income from his forest, which will not produce timber for a number of years. Private forest owners are not legally obliged to allow public access to their forest (i.e. there is no everyman's right in Ireland) and access to private forests can be a contentious issue in Ireland. This farm, forest and tourism enterprise is an example of innovative forest management that has been initiated by the land owner and could be used as a template for other new forest owners in Ireland.

6. Policies influencing ownership development / Policy instruments for new forest owners

Policy and ownership are related in various ways: Policies directly or indirectly influence ownership development or even encourage or create new forms of ownership; and policy instruments are emerging that answer to ownership changes, including instruments addressed to support new types of owners e.g. through advisory services, cooperative or joint forest management, etc.

6.1. Influences of policies on the development of forest ownership

Coillte was established under the Forestry Act 1988. It is a private limited company registered under and subject to the Companies Acts 1963-86. All of the shares in the company are held by the Minister for Agriculture, Fisheries and Food and the Minister for Finance on behalf of the Irish State. The Board of Directors is appointed by the Minister for Agriculture and Food. When established, it acquired ownership of the State's forests and its purpose is to commercially manage these forest assets (www.coillte.ie).

Irish forest policy is outlined in “Growing for the Future – A Strategic Plan for forestry” which was published in 1996 (DAFF, 1996). The key aim of the policy was to expand forest cover from 8% (in 1996) to 17% by 2030; by supporting the afforestation of 25,000 ha annually from 1996-2000; thereafter the target was 20,000 ha per annum until 2030. The rationale was that 17% forest cover would generate a critical mass of timber (i.e. 10 million m^3 per annum) that would sustain a competitive timber industry. This increase in forest cover was to be achieved in accordance with the principles of sustainable forest management. The key instrument through which this policy aim of increased afforestation was to achieved was the provision of incentives to land owners to convert land to forestry in the form of an establishment grant (covering 100% of the costs of establishing the plantation) and tax-free premiums. EU co-funded grants had been available since 1980; premiums since 1990. The afforestation grant which covers the cost of establishment is paid in two instalments; one on successful completion of the initial site operations and accounts for 75% of the costs; the second, 4 years after the plantation has been established (25%). In addition those afforesting land receive a forest premium paid annually for 20 years to “bridge” the gap between the initial investment in converting land to forestry to the time when the first income is received from forests, typically year 20 when the forest is thinned for the first time. The first premium payment is made in year 1. This policy to provide support for afforestation has had a major bearing on the development of forest ownership as it has led to the emergence of a new form of owners, “the farmer”. Since 1980, almost 20,000 land owners (the majority of whom are farmers) have afforested land. For almost all it was the first time for them to do so, hence they are all “new” forest owners. The forests established under this afforestation programme are all in the form of plantations. The Irish Government also provides grant-aid for the establishment of native woodlands under the Native Woodland Scheme. This scheme is biodiversity oriented and has been availed of by a very small number of land owners.

There are no specific policy instruments that stimulate the privatisation, decentralisation, or nationalisation of forests (e.g. pre-emption rights). Similarly there are no regulations related to inheritance rights with an effect on creating smaller parcels or hindering such a development. Further there are no policies creating new legal forms of ownership. A small part of the Coillte forest (no more than 14,000 ha of forest) has been leased to The Irish Forestry Unit Trust (IforUt) which manages the forest on behalf of institutional investors.

Part of the reason for the lack of such policy instruments is that private forest ownership is a new concept in Ireland, emerging only in the last thirty years. Another “change in ownership” came about with the quasi privatisation of state forestry when Coillte Teo was established described above. In 2011 there was a Government plan to sell off the

harvesting rights to some of Coillte's forests; however there was significant public opposition and the sale did not occur.

6.2. Influences of policies in forest management

The Irish Government is committed to ensuring that all forestry development complies with the principles of sustainable forest management. There is a number of means by which the Forest Service ensures that this is the case. First it is important to note that effectively all private forests in Ireland established since 1980 attracted financial support from the Forest Service; this fact gives the Forest Service control over how the forests are established and how they are managed until the point when the premium is no longer payable. Those receiving grant-aid under the afforestation scheme must establish plantations and must adhere to the guidelines/rules relating to sustainable forest management outlined in the documents described below:

a) The Irish National Forest Standard (Forest Service, 2000a) – in which the criteria and indicators relating to the national implementation of SFM in Ireland are outlined. In it qualitative and quantitative measures are described which progress towards the practice of SFM is monitored in Ireland. While the national standard is not a certification standard, it does identify appropriate practices and provides a basis for certification;

b) The Code of Best Forest Practice (Forest Service, 2000b) – outlines the appropriate manner in which all forest operations should be carried out to ensure the implementation of SFM;

c) A suite of six mandatory environmental guidelines relating to water quality, landscape, archaeology, biodiversity, harvesting and forest protection.

Payment of grant-aid will only be made when the entire plantation is up to the required standard and complies with the guidelines above. The Forest Service carries out random forest inspections and if plantations are not managed in accordance with the rules of the schemes, premiums may be withheld or reduced and penalties may be applied.

All grant beneficiaries must submit a Forest Management Plan covering the period from Year 5 following plantation establishment to Year 10 for:

a) plantations which are 10 hectares or greater;

b) broadleaf plantations which are 5 hectares or greater.

When plantations are 10 years old, and before payment of the 11th and subsequent premiums, a Forest Management Plan for Year 11 to Year 20 must be submitted to the Forest Service detailing proposed management from year 11 to year 20. Due to limited staff resources it is not possible for the Forest Service to check whether the operations outlined in the management plan have actually being undertaken.

The application for grant-aid and the associated management plans must be completed and "signed off" by a registered forester. A registered forester is a professional forester who is on the list of registered/approved foresters that is retained by the Forest Service. These individuals are professionally qualified foresters, who hold professional indemnity insurance and have completed a declaration committing themselves to adherence to the various grant scheme rules and environmental requirements, and to best forest practice.

Once the stand reaches 20 years of age (i.e. once the owner has ceased to receive payments) there is no requirement to manage it in any particular way. However harvesting is governed by law and under the 1946 Forestry Act those involved in tree felling/harvesting must apply for a limited or general felling licence. Conditions will be attached to the issuing of this licence including complying with all Forest Service guidelines on harvesting etc as well as a replanting requirement.

As part of new legislation currently being drafted a requirement that all forest owners have management plans prepared is being considered. As this legislation is currently being debated in Parliament it is not yet known whether this will be enacted.

In summary there is control exerted on the early management of private plantations with forest owners required to follow guidelines

etc and submit management plans. There is an underlying assumption that forest owners will have timber production as an objective, indeed it is a requirement of receipt of grant-aid that the land being afforested must be capable of producing a commercial crop of timber. However owners are not required to harvest timber.

If sites are in environmentally sensitive areas such as those designated under Natura 2000 there may be restrictions placed on the activities that can take place including harvesting. However there is no compensation paid to these owners with respect to these restrictions.

6.3. Policy instruments specifically addressing different ownership categories

As outlined elsewhere in this report the 18,000 or so private forest owners in Ireland are all "new" forest owners. In the 1980s the Forest Service still had an extension role and would have advised new forest owners as to what species to plant and what early management to undertake in their forests. As the numbers afforesting expanded, the need to provide training for the new forest owners was acknowledged (DAFF, 1996) and hence training courses are available to forest owners. These are funded by the Government and are generally provided by Teagasc (The Agricultural and Food Advisory Service) and recently focus on aspects on preparing owners to thin their stands and market their timber. There are also courses to help forest owners to manage broadleaf stands. These courses are advertised on the Teagasc website, popular press and forestry related newsletters. Those farmers that are listed on the Teagasc database (i.e. client list) are also notified of these courses. Attendance by owners is voluntary and studies have shown that the uptake is poor (Ní Dhubháin and Greene, 2009; Ní Dhubháin et al., 2010). It had been suggested (e.g. DAFF, 1996) that attendance at training courses may be a prerequisite to the receipt of the forest premiums but this suggestion has never been implemented.

Teagasc receives support from government to promote afforestation. It does this by providing advice to those interested in afforesting and advice and training to new forest owners. It has been to the forefront of encouraging and facilitating the establishment of producer groups. Teagasc initiated a project in 2008 to encourage the establishment of producer groups; there are currently 26 in operation. These consist of groups of 20 or so forest owners working together to thin their plantations (Casey, 2010). The producer groups do not receive any specific direct support from the Government, however, Teagasc provides advice and support to new forest owner groups, particularly at the early stages of group formation. In the past the Government has provided some financial support to organisations such as the Irish Timber Growers Association, however there are no specific policy instruments in place to stimulate associations of small forest owners.

6.4. Factors affecting innovation in policies

Since gaining independence in 1922, forest policy in Ireland essentially consisted of a series of afforestation targets, initially for strategic reasons to ensure an adequate domestic supply of home grown material. It was not until 1996 that the first forest policy document was published, i.e. Growing for the Future. In it more ambitious targets for afforestation were set; the objective being to reach a critical mass of timber production (i.e. 10 million m^3 per annum) that would sustain a competitive timber industry. A further driver to the production of this policy was the international commitment to adopting the principles of sustainable forest management.

Forest policy in Ireland has recently been revised and a new policy document published. The driver for the revision of State forestry policy was the need to "take account of the critical role of forestry in relation to climate change and its importance to construction, bioenergy, biodiversity and its potential to deliver long-term employment in other downstream industries e.g. eco-tourism, furniture, crafts etc.

The process of developing this policy involved stakeholders from all forestry sectors including: Irish Timber Growers Association (ITGA), Coillte (The Irish Forestry Board), forest companies, the National Council for Forest Research and Development (COFORD), the Irish Forestry and Forest Products Association (IFFPA), the Society of Irish Foresters (SIF), Teagasc, the Irish Farmers Association (IFA) and Crann, from the environment sector: Environmental Pillar of Social Partnership/An Taisce, and from government departments and bodies: the Department of Environment, Heritage and Local Government (DEHLG), the Department of Finance, DAFM, the Sustainable Energy Authority of Ireland (SEAI).

The main outcome of this review was to reiterate the need to continue with the afforestation programme and a target of 10,000 ha per annum to the year 2015 and 15,000 per annum thereafter to the year 2045 was set. Hence this trend in ownership is likely to continue for the foreseeable future. Similar policy instruments to those used previously will be used to help achieve this target; grants and premium payments continue to be available for those wishing to afforest their land. From 2015 onwards changes will be made to the payment structure; premium payments will be for 15 years rather than 20, however the total value of the payments will remain the same in an effort to further incentivise land owners to afforest. In addition, to ensure the sustainable management of the forest resource a new scheme for the preparation and collation of management plans was recommended in the review; reflecting this, the new Forestry Act includes provision for forest management planning.

7. Literature

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8. Annexes

8.1. Tables with detailed description of 10 most important publications

SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Howley, P (2013) *Examining farm forest owners' forest management in Ireland: The role of economic, lifestyle and multifunctional ownership objectives*. Journal of Environmental Management 123: 105-112.**
English language summary/abstract	Using a nationally representative survey of 263 farm operators in Ireland, this study develops a typology of private forest land owners' objectives for forest ownership. It is important to understand farmers' forest ownership objectives as this will enhance economic analysis in general, but also to formulate more effective policies that take into account the range of motivational profiles of land owners. Using principal component analysis, three core motivations for forest ownership are identified representing economic, lifestyle and multifunctional benefits. Using a binary logistic regression model these ownership objectives were found to have a significant impact on farmers' forest management. For instance, farmers with relatively stronger economic motivations for forest ownership were found to be much more likely to harvest thinnings whereas the opposite was true of those with more lifestyle orientated objectives. In order to tailor policy at groups with different forest ownership objectives it will be important to be able to identify them through more easily observable owner and property characteristics. This study through multivariate regression analysis found factors such as age of the farm operator, land quality, system of farming, off farm employment and environmental attitudes were related to farm forest owners' ownership objectives. The study concludes that a better understanding of the heterogeneity in farmers' forest ownership objectives will enable policymakers to tailor incentives that more closely align with the diverse motivational profiles of different groups of landholders.
Language of the study/publication	English
Type of organization conducting the study	Public Research Insitiute
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology
Methodical approach	Household survey, PCA
Thematic focus	motives and behaviour of ownership types
Main results should be given here if not yet included in the summary.	
Weblink	

SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Ní Dhubháin, Á., Maguire, K., Farrelly, N. (2010*) The harvesting behavior of Irish private forest owners. Forest Policy and Economics*, 12(7). 489-544.**
English language summary/abstract	The Irish government has an ambitious plan to increase the forest cover in Ireland from 10% to 17% by the year 2030 and in doing so achieve a competitive scale of timber production. Substantial financial incentives are available to encourage land owners, especially farmers, to plant. To achieve the desired scale of timber production, the plan assumes that grant-funded forests will be managed and harvested in a similar way to State forests. This study set out to determine the objectives of private forest owners for their forests and to establish whether they planned to thin their stands. It also looked at the factors influencing a private forest owner's decision to harvest and the role that extension plays in this process. A survey of 120 private forest owners who had afforested land since 1980 was conducted in 2007. The study found that while most forest owners hoped to produce timber from their woods many of them either planned to use the timber themselves or were unsure as to whether they would put it on the market. Availing of extension activities significantly increased the likelihood that an owner would thin his/her stand. However, the study raised concerns as to whether owners were making the correct silvicultural decision regarding thinning.
Language of the study/publication	English
Type of organization conducting the study	University
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology
Methodical approach	Household survey, logistic regression
Thematic focus	motives and behaviour of ownership types
Main results should be given here if not yet included in the summary.	
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SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Ní Dhubháin, Á., Greene, R. (2009) *How much do Irish private forest owners know about forestry.* Small-scale Forestry, 8(3). 249-262.**
English language summary/abstract	Since 1980, over 20,000 Irish land owners have afforested land, for the first time, as part of an afforestation programme subsidised by the Government and the EU. A survey of 99 private forest owners was conducted to determine their knowledge of broad aspects of forest management. Key questions were scored so as to test whether respondents had passed or failed a forestry knowledge test. Over two-thirds of private forest owners passed the test. Success in this test was shown to be related to whether respondents had (a) attended extension field days; (b) been active in forest operations in the early stages of the forest cycle and (c) been members of farming and/or forestry groups. Younger respondents (i.e., B50 years) were more likely to pass the knowledge test than older respondents.
Language of the study/publication	English
Type of organization conducting the study (in case of multi-institutional studies multiple answers allowed)	☐ University
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology
Methodical approach	Household survey
Thematic focus	☐ new management approaches
Main results should be given here if not yet included in the summary.	
Weblink	

SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Collier, P., Dorgan, J., Bell P. (2002) *Factors Influencing Farmer Participation in Forestry*. COFORD (Council for Forest Research and Development), Dublin, p. 41.**
English language summary/abstract	This survey found that the main reasons that prompted farmers with forest to plant were the attractiveness of the premiums and the lack of suitability of the land for conventional farming. This is consistent with the findings of other studies. Some of the farmers currently without forest had seriously considered forestry as an option. They stated that the reasons they had not proceeded were because they needed land to qualify for extensification payments. They were waiting to see if the forestry premiums and grants will be improved and what changes in agricultural policy will emerge in the next few years. Farmers without forest who said that they had not seriously considered the forestry option for land use stated that their land was too productive for trees and that they needed it to qualify for extensification payments. Like their colleagues who had considered planting they too were waiting to see if premiums and grants would be improved. The vast majority of farmers think that the level of afforestation close to their homestead is acceptable as it is. However the vast majority also believe that there is too little forest cover in Ireland as a whole; this view is dominant among those currently with forest.
Language of the study/publication	English
Type of organization conducting the study	Private Consultants
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology
Methodical approach	Household survey
Thematic focus	☐ ownership change (incl. on changes in quantitative terms, emerging new ownership types, etc.) ☐ motives and behaviour of ownership types ☐ policy instruments addressing ownership
Main results should be given here if not yet included in the summary.	
Weblink	

SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Ní Dhubháin, Á., Wall, S. (1999)** ***The new owners of small private forests in Ireland.*** **Journal of Forestry, 97(6). 28-33.**
English language summary/abstract	Private forestry has expanded rapidly in Ireland during the past two decades. Much of the increase in planting is by first-time nonindustrial private forest owners. Little is known about these new investors in forestry and even less about the kind of management being undertaken in the new private plantations. A study examines how Irish owners manage their forests and what sources of forestry information they prefer. One finding: the majority rely on management companies for afforestation yet intend to carry out operations themselves once the management contract expires. Most of these forest owners have no tradition, experience, or knowledge of woodland management.
Language of the study/publication	English
Type of organization conducting the study	☐ University
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology
Methodical approach	Survey of owners
Thematic focus	motives and behaviour of ownership types
Main results should be given here if not yet included in the summary.	
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SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Ní Dhubháin, Á., Redmond, J., Gallagher, G. (2003)** ***A Pilot Study to Evaluate the Training and Skills Needs of Western Package Forest Owners with Specific Reference to First Thinnings*****. Final Report to the Forest Service. 108 pp.**
English language summary/abstract	The Western Package Scheme of afforestation grants was launched in Ireland in 1981. Approximately 23,000 ha were afforested under the scheme during the period 1982 to 1990. The plantations established during the early years of the scheme's operation are now, or will be soon, due for thinning. This study set out to find out more about those who participated in the scheme and about the plantations established. This information was used to identify and quantify the target audience for a training/education programme in thinning. In addition, a training/education programme for the owners of Western Package plantations was devised. A silvicultural audit of a sample of 72 plantations was undertaken during the period November 2002 to February 2003. This provided information on a variety of site and crop characteristics. In addition the owners of these plantations were interviewed to ascertain their knowledge of the condition and productivity of their plantations. Their interest in participating in a training programme was also queried. The plantations surveyed ranged in age from 5 years (reconstituted after fire) to 21 years. The smallest plantation area was 0.25 ha while the largest was 76 ha. The conclusions drawn from the surveys were that the owners of the plantations were interested in the management of their plantations but lack knowledge and expertise in management. The majority of plantations are achieving high yield classes and are accessible to timber trucks. However, stability will be a major consideration in deciding whether or not to thin these plantations. The following areas need to be addressed in a course on first thinning: thinning theory and practice; extraction issues; timber measurement; timber prices and markets; and organisational and environmental issues. The anticipated level of owner involvement in thinning will influence their knowledge requirements. To this end two course modules are outlined. For those owners who intend to have a direct involvement in thinning a detailed course (a "high-level involvement" course) dealing with the issues outlined above is proposed. For those owners who intend employing a contractor/company to undertake the thinning a "low-level involvement" course is proposed which covers the issues outlined above but at less depth.
Language of the study/publication	English
Type of organization conducting the study	☐ University
Type of funding used (multiple answers allowed)	National
Regional scope	Regional
Theoretical approach	Sociology
Methodical approach	Survey of owners
Thematic focus	motives and behaviour of ownership types
Main results should be given here if not yet included in the summary.	The results showed that the plantations were most commonly located on peat soils (53% of the area surveyed) and gley soils (41% of the area surveyed). Seventy percent of the plantation area was classed as accessible to timber trucks. Sitka spruce accounted for 93% of the area afforested. The majority of the crops surveyed were considered fully stocked (i.e. >2250 stems per hectare). The yield class of the crops ranged from 6 to 30 m 3ha-1 an-1 with a weighted average yield class of 21 m 3 ha-1 an-1. Approximately 14% of the crop area was in check. The risk of windthrow in the plantations was high with almost one third of the area only

	expected to reach a top height of 15 m before excessive windthrow may require the crop to be clearfelled. Using Forestry Commission Yield Models and the yield class and stocking data, the year that the plantations are due to be thinned was estimated. In addition, the volume to be removed during this first thinning was forecasted. Only one plantation had already been thinned at the time of the survey. Of the remaining survey area, 17% was forecasted to be thinned during the period 1999 to 2005 with a further 50% to be thinned before 2010. The majority (i.e. 81%) of the material to be removed during thinning will be pulp. It is estimated that 30% of the total area surveyed will not be thinned. This comprises areas that are in check, where stocking is low or where crop stability would indicate that thinning is not appropriate. Over three-quarters of the plantation owners surveyed (i.e. 76%) indicated that they intend to thin their plantations. Few have attended existing training courses and most have little knowledge with regard to thinning. However, over 75% of owners said that they would attend a course on first thinning. here to enter text.
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SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Upton, V. O'Donoghue, C., Ryan, M. (2014) *The physical, economic and policy drivers of land conversion to forestry in Ireland*. Journal of Environmental Management, 132: 79-86.**
English language summary/abstract	Land use change is fundamentally a product of the interaction of physical land characteristics, economic considerations and agricultural and environmental policies. Researchers are increasingly combining physical and socio-economic spatial data to investigate the drivers of land-use change in relation to policy and economic developments. Focusing on Ireland, this study develops a panel data set of annual afforestation over 2811 small-area boundaries between 1993 and 2007 from vector and raster data sources. Soil type and other physical characteristics are combined with the net returns of converting agricultural land to forestry, based on the micro-simulation of individual farm incomes, to investigate land conversion. A spatial econometric approach is adopted to model the data and a range of physical, economic and policy factors are identified as having a significant effect on afforestation rates. In addition to the financial returns, the availability and quality of land and the implementation of environmental protection policies are identified as important factors in land conversion. The implications of these factors for the goal of forest expansion are discussed in relation to conflicting current and future land use policies.
Language of the study/publication	English
Type of organization conducting the study	Public Research Insitiute
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Economics
Methodical approach	Spatial panel regression
Thematic focus	motives and behaviour of ownership types
Main results should be given here if not yet included in the summary.	
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SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Upton, V., Ryan, M., Farrelly, N., O'Donoghue, C. (2013)** ***The potential economic returns of converting agricultural land to forestry: An analysis of system and soil effects from 1995 to 2009*****. Irish Forestry. 70: 61-74.**
English language summary/abstract	Private land owners have been responsible for the majority of annual afforestation in Ireland since the mid-1990s, but planting rates have generally been declining since 2002. Although the decision to plant may be driven by a number of factors, the profitability of forestry as a land-use option should be an important deriver and offer some insight into trends in afforestation rates. As farmers undertake most afforestation in Ireland it is important to account for the opportunity cost of lost agricultural income when analysing the financial outcome of planting. In addition, soil quality plays an essential role in dictating the productivity and profitability of both agriculture and forestry. This study examines the effects of soil quality and superseded agricultural system on the potential profitability of afforestation by farmers between 1995 and 2009. Data from the National Farm Survey were employed to identify the annual gross margins for six agricultural systems on six soil types that differ in terms of quality. The measures of soils quality were translated into potential yield classes for forestry using an existing productivity model and Teagasc's Forest Investment and Valuation Estimator was employed to calculate the net present value of afforestation for each of the systems and soil types. The results demonstrate how the competitiveness of forestry as a land-use option is influenced by soil quality and superseded enterprise and how forestry has become more competitive with agricultural enterprises over the period of analysis.
Language of the study/publication	English
Type of organization conducting the study	Public Research Institute
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Economics
Methodical approach	Economic analysis
Thematic focus	Ownership change
Main results should be given here if not yet included in the summary.	
Weblink	

SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Howley, P., Hynes, S., O'Donoghue, C., Farrelly, N., Ryan, M. (2012)** ***Afforestation in Ireland: examining farm and farmer characteristics behind the decision to plant*****. Irish Forestry, 69: 33-44.**
English language summary/abstract	Understanding the factors that influence farmers to enter forestry is important in order to develop efficient policies aimed at promoting greater rates of private planting. Using Ireland as a case study, factors affecting farmers' participation in farm forestry were evaluated. Specifically, a nationally representative panel dataset collected annually between 1995 and 2009 was used to model both farm and farmer related characteristics affecting the probability of a farmer entering into forestry. Results suggest that there is a significant heterogeneity among farm households in terms of farm forestry participation. Owners of larger farms and those in less-intensive farm systems were more likely to enter into forestry during the period 1995-2009. Age and the presence of children were negatively associated farm forestry participation.
Language of the study/publication	English
Type of organization conducting the study	Public Research Institute
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology
Methodical approach	Panel dataset
Thematic focus	Ownership change
Main results should be given here if not yet included in the summary.	
Weblink	

SELECTED REPORTS/PUBLICATIONS	
Full reference of study/publication	**Duesberg, S., O'Connor, D., Ní Dhubháin, Á. (2013a) *To plant or not to plant: Irish farmers goals and values with regard to afforestation*. Land Use Policy, 32. 155-164.**
English language summary/abstract	To encourage Irish farmers to transfer land into forestry, a premium scheme supporting farmers who afforest was implemented in 1989 and afforestation targets outlined in 1996. In the period from 1996 to 2006, however, only half of the targeted area was planted in Ireland. As the income of many farmers would improve when joining the scheme, a number of studies have been conducted to find out why the response was not as expected. However, to date the phenomenon has not been explained. Amongst the studies undertaken, a lack of qualitative approaches looking at farmers' decision-making was identified. In order to understand farmers' decisions regarding farm afforestation, in-depth interviews with 62 farmers in the North-West and Mid-Western regions of Ireland were conducted in winter and spring 2011. The interviews were based on the theory of farmers' goals and values developed by Ruth Gasson in 1973 and relate specifically to their instrumental, intrinsic, social and expressive values about farming. The results of this study show that farmers exhibit complex, multiple and sometimes contradictory values in relation to farming. The biggest group in the study were guided by intrinsic values when it comes to farm afforestation. Their decision not to plant is made based on their values and beliefs about farming, e.g. that it is a shame to plant land used for food production, even if this returns a greater profit. A much smaller group were directed by profit maximisation when it comes to afforesting land. These farmers would plant if the financial incentives for forestry were more attractive, e.g. if the premiums available for afforestation were higher or if the outlook for agricultural profits was not as good as anticipated.
Language of the study/publication	English
Type of organization conducting the study	University
Type of funding used (multiple answers allowed)	National
Regional scope	National
Theoretical approach	Sociology; famer decision-making theory
Methodical approach	Qualitative interviews with farmers
Thematic focus	Ownership change
Main results should be given here if not yet included in the summary.	
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