

# Factors Influencing Farmer Participation in Forestry

Pat Collier, Jim Dorgan and Paul Bell

COFORD, National Council for Forest Research and Development  
Agriculture Building  
Belfield, Dublin 4  
Ireland  
Tel: + 353 1 7167700  
Fax: + 353 1 7161180  
email: info@coford.ie  
© COFORD 2002

First published in 2002 by COFORD, National Council for Forest Research and Development, Belfield, Dublin 4, Ireland.

All rights reserved. No part of this publication may be reproduced, or stored in a retrieval system or transmitted in any form or by any means, electronic, electrostatic, magnetic tape, mechanical, photocopying recording or otherwise, without prior permission in writing from COFORD.

ISBN 1 902696 28 X

*Title:* Factors Influencing Farmer Participation in Forestry

*Authors:* Pat Collier, Jim Dorgan and Paul Bell

*Citation:* Collier, P., Dorgan, J., and Bell P. 2002. Factors Influencing Farmer Participation in Forestry. COFORD, Dublin.

The views and opinions expressed in this publication belong to the authors alone and do not necessarily reflect those of COFORD.

Design and production: Magner Communications

## Factors Influencing Farmer Participation in Forestry

Pat Collier<sup>1</sup>, Jim Dorgan<sup>2</sup> and Paul Bell<sup>3</sup>

---

<sup>1</sup>Collier Broderick, Research and Managing Consultancy, pcollier@eircom.net

<sup>2</sup>Curtin Dorgan and Associates, dorgan@eircom.net

<sup>3</sup>Agricultural and Environmental Consultant, bellagri@eircom.net (author of Chapter 5 – Environmental Constraints)

## FOREWORD

In 1996 the government issued *Growing for the Future, A Strategic Plan for the Development of the Forestry Sector in Ireland*. It set a target of achieving a productive forest area of 1.2 million ha by 2030, or 17% of the land area of the country. The basis for the target level was twofold: first to increase annual roundwood production to 10 million cubic metres by 2030 to improve economies of scale and overall competitiveness, and second to increase the level of farmer planting in the interests of rural development. Planned afforestation levels were set at 25,000 ha up to 2000 and 20,000 ha per year from 2000 to 2030.

The targets set out in the plan have not been achieved to date. In fact the highest level of afforestation since the introduction of the forest premium preceded the strategy, when in 1995 close on 24,000 ha were afforested. Since then afforestation rates have decreased; they are currently running at about 15,000 ha annually, about 25% below target. Projected forward, this scenario would mean a significant reduction in production capacity and in the ability of the forestry sector to compete internationally.

Farmers are the group targeted with the achievement of the government's afforestation policy. Attractive grants and premiums have been put in place to encourage participation in forestry. An added attraction is that returns from forestry are tax-free. Despite these excellent incentives farmers have not responded in sufficient numbers and the afforestation programme has been, as shown, running below target.

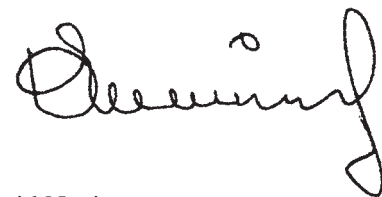
It is these concerns that have led COFORD, working with the Forestry Forum, to commission a study on farmers' attitudes to forestry - to find out the reasons why farmers were not taking up forestry in sufficient numbers and to make recommendations to address these reasons.

The results of the study are set out in this COFORD report. What the work has done is to clearly identify a specific land-base that is available for afforestation. It shows that if this land-base were planted it would achieve the government targets - the afforestation levels set out in *Growing for the Future*. A set of actions to make this happen are proposed as specific recommendations for government and for state agencies.

The uptake of the recommendations set out in the report is vital to achieving target afforestation levels. COFORD will continue to work with all stakeholders to ensure their timely implementation.



Dr Eugene Hendrick  
Director  
COFORD



David Nevins  
Chairman  
COFORD

## ACKNOWLEDGEMENTS

The authors wish to acknowledge the assistance of a number of individuals and organisations in the preparation of this report: COFORD; Teagasc personnel (research and advisory); the Forest Service; the chairman, members and staff of the IFA Farm Forestry Section, those farmers who participated in the survey and other farmers consulted; members of Macra na Feirme; and rural development workers consulted during the study.

## TABLE OF CONTENTS

<b>FOREWORD</b> .....	iv
Acknowledgements .....	v
Table of Contents .....	vi
List of Abbreviations .....	viii
<b>EXECUTIVE SUMMARY</b> .....	1
Methodology .....	1
Characteristics of farms with and without forestry .....	1
Reasons for planting forest .....	1
Future intentions .....	1
Information channels about afforestation .....	2
Economic returns to forestry and other enterprises .....	2
Economic and social environment .....	2
Environmental regulations and forestry .....	2
Promotion and sales of afforestation .....	3
<b>1. INTRODUCTION</b> .....	7
The policy environment .....	7
Objectives of forest policy .....	7
Policy and the rate of afforestation .....	7
Previous studies .....	8
Terms of reference .....	9
Methodology .....	9
Structure of the report .....	10
<b>2. SURVEY OF FARMERS</b> .....	11
Methodology .....	11
Characteristics of the sample .....	11
Farm enterprise .....	13
Farm income .....	14
Factors likely to influence the decision to afforest .....	14
Intention to afforest .....	16
Farmers' attitudes to forestry .....	18
Decision to afforest .....	21
<i>Agricultural</i> .....	21
<i>Scheme</i> .....	21
<i>Land</i> .....	21
<i>Personal</i> .....	21
<i>Investment</i> .....	21
<i>External</i> .....	21
Sources of information .....	25
<b>3. ECONOMIC RETURNS TO FARM FORESTRY</b> .....	29

<b>4. SOCIO ECONOMIC FACTORS</b> .....	33
Policy context .....	33
Output and incomes .....	33
Off-farm employment and income .....	35
Farm structure .....	37
Demographic structure .....	37
<b>5. ENVIRONMENTAL CONSTRAINTS</b> .....	39
Introduction .....	39
Requirements for Sustainable Forest Management (SFM) .....	39
Water Quality .....	40
Biodiversity .....	41
Landscape .....	41
Archaeology .....	41
Designation of sensitive areas .....	42
Physical constraints on afforestation .....	42
Impact of the Nitrates Directive .....	43
Livestock Extensification Scheme .....	43
Rural Environment Protection Schemes (REPS) .....	44
Environmental Impact Statement (EIS) Requirement .....	44
Forest carbon storage .....	44
Stakeholders' views on environmental and other constraints .....	45
Conclusions .....	46
<b>6. FORESTRY PROMOTION AND SALES</b> .....	49
Promotion by the Forest Service .....	49
Forestry development projects .....	49
Advertising .....	49
Teagasc .....	50
Funding for associations .....	50
Direct mail .....	50
Private sector promotion .....	50
Evaluation .....	51
<b>7. CONCLUSIONS AND RECOMMENDATIONS</b> .....	53
Conclusions .....	53
Recommendations .....	54
<b>REFERENCES</b> .....	57
<b>APPENDIX A - ORGANISATIONS CONSULTED</b> .....	59
<b>APPENDIX B – QUESTIONNAIRES USED IN THE SURVEY</b> .....	60
<b>APPENDIX C – GEOGRAPHICAL EXTENT OF REGIONS</b> .....	71

## LIST OF ABBREVIATIONS

<b>ABE</b>	Areas for Biodiversity Enhancement
<b>BMW</b>	Border Midlands and Western [Region]
<b>CAP</b>	Common Agricultural Policy
<b>CSO</b>	Central Statistics Office
<b>EIS</b>	Environmental Impact Statement
<b>EPA</b>	Environmental Protection Agency
<b>IFA</b>	Irish Farmers' Association
<b>NHA</b>	National Heritage Area
<b>OAP</b>	Old Age Pension
<b>REPS</b>	Rural Environment Protection Scheme
<b>RMP</b>	Records of Monuments and Places
<b>SAC</b>	Special Areas of Conservation
<b>SE</b>	South and East [Region]
<b>SPA</b>	Special Protected Area
<b>SFM</b>	Sustainable Forest Management
<b>WFCS</b>	Western Forestry Co-operative Society Limited

## EXECUTIVE SUMMARY

### Methodology

The approach and methodology in this study was to survey the attitudes of farmers from all over the country with and without forests who have at least 5 ha of land suitable for forestry. The identification of farmers with such land was achieved through the local knowledge of members of the IFA Forestry Section who also administered the questionnaires in their areas.

In all, 258 farmers from 20 counties were interviewed: 86 of the farmers had forest while 172 did not.

### Characteristics of farms with and without forestry

This survey found that farm forestry was most likely on larger farms with larger enterprises, especially dairying. Those farmers with forest had a larger area of land that is difficult to farm compared to those without forest. Furthermore, a higher percentage of farmers with forest had more than one parcel of land compared to those without. Also a higher percentage of farms without forest had successors compared to those with forest.

There was very little difference in participation in REPS and extensification between farmers currently with and without forest. This is somewhat surprising because REPS and extensification have been regarded as likely to preclude the use of land for forestry.

### Reasons for planting forest

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.

### Future intentions

Sixty four percent of farmers with forest were favourably disposed to planting again in the future. Most (48%) farmers without forest were undecided about their future involvement in forestry. The percentage of farmers who have decided not to plant in future (36%) is the same for those currently with and without forest.

The percentage of part-time farmers who stated that they would plant in the future was higher than full-time farmers. Similarly, the percentage of farmers in the SE Region who stated that they would plant in the future was higher than in the BMW Region. The percentage of farmers currently with forest and who stated that they would plant in the future was similar, regardless of whether or not they had a successor. On the other hand, the percentage of farmers without forest who stated that they would not plant in the future was higher for farmers with successors. This is consistent with the previous findings.

The reasons given by those with forest for not planting in the future was the lack of suitable low value land and possible disqualification from extensification payments. The factors that would influence them to plant

in future were indexation of premium payments and their extension beyond 20 years, and higher grants.

The factors that would influence those currently without forest, regardless of whether they had seriously considered the option were similar: an increase in premium and deterioration in returns from agriculture.

### **Information channels about afforestation**

Friends, relatives and neighbours were mentioned most frequently (27%) by farmers with forest as the way in which they became aware of forestry schemes. This was followed by advertisements, commercial forestry companies and Teagasc. The majority of farmers with forest had attended a Teagasc demonstration/field day.

Among the respondents, Teagasc was the leader in the provision of farm advice to farmers currently with and without forest. But in only a small minority of cases (15% of those with forest and 9% of those without) had a Teagasc representative suggested forestry as a possible land use.

Forty four percent of farmers with forest and 13% of those without had been approached by a forestry company.

### **Economic returns to forestry and other enterprises**

The forestry premium exceeded farm income levels on the majority of farms (63%) with the exception of dairying, dairying and other systems and, to a lesser extent, mainly tillage systems. The returns to the systems of farming that are not competitive with the forestry premium are dependent on direct payments. Direct payments for forestry have been, on average, lower than direct payments to these low-income farm systems. The supports for these enterprises, including direct payments, market and other supports are twice those for forestry. Furthermore, while the grant rates have kept pace with inflation the premium rates have not.

### **Economic and social environment**

The key factors affecting the decision by farmers whether or not to afforest their land were farm incomes from alternative enterprises and availability and quality of off-farm employment. Since the mid 1980s there has been increasing influence by agricultural policy makers on how farmers run their farms, and what returns arise from farming.

At the same time there has been a substantial growth in off-farm employment and an increase in the number of farmers engaged in part-time farming. Off-farm income now exceeds income from farming for most farm households.

These trends should augur well for the competitiveness of forestry. As the level of part-time farming increases and labour becomes a limiting resource on farms, enterprises such as forestry, which have a low labour input should emerge as strong contenders for land use.

### **Environmental regulations and forestry**

Environmental factors in agricultural and forestry policy do and will affect the level of afforestation both positively and negatively.

A variety of courses of action are currently being implemented or planned to attain environmental objectives and sustainable forest management. The main actions include:

1. designation of Special Areas of Conservation, protected areas, National Heritage Areas, and acid sensitive areas;
2. designation of sites not suited to afforestation such as those at high elevation or infertile blanket bog;
3. requirement for an Environmental Impact Statement for afforestation projects of 50 ha or more;
4. implementation of REPS, extensification and the Nitrates Directive

An estimated 1.9 million ha may be affected by these policies.

The implementation of these policies involves referring some afforestation proposals to a number of designated bodies. Delays arising from these referrals are frustrating and may lead farmers to change their minds about their decision to afforest.

### **Promotion and sales of afforestation**

The Forest Service funds a number of initiatives designed to promote afforestation to farmers, including advertisements, publication of brochures, pamphlets, direct mail and employment of nine foresters by Teagasc.

The full potential of Teagasc as a marketing channel for forestry is not being realised. Only 9% of farmers without and 15% of those with forest stated that Teagasc had suggested afforestation as a land use option. Part of the explanation may be the way in which Teagasc is financed: agricultural consultancy generates fees for Teagasc, whereas forestry consultancy does not.

Whatever the reason this study has shown that there are many farmers who are undecided about their future intentions in relation to forestry and who may mistakenly believe that they need their land for extensification payments. This particular group of farmers need independent advice in assessing the forestry option.

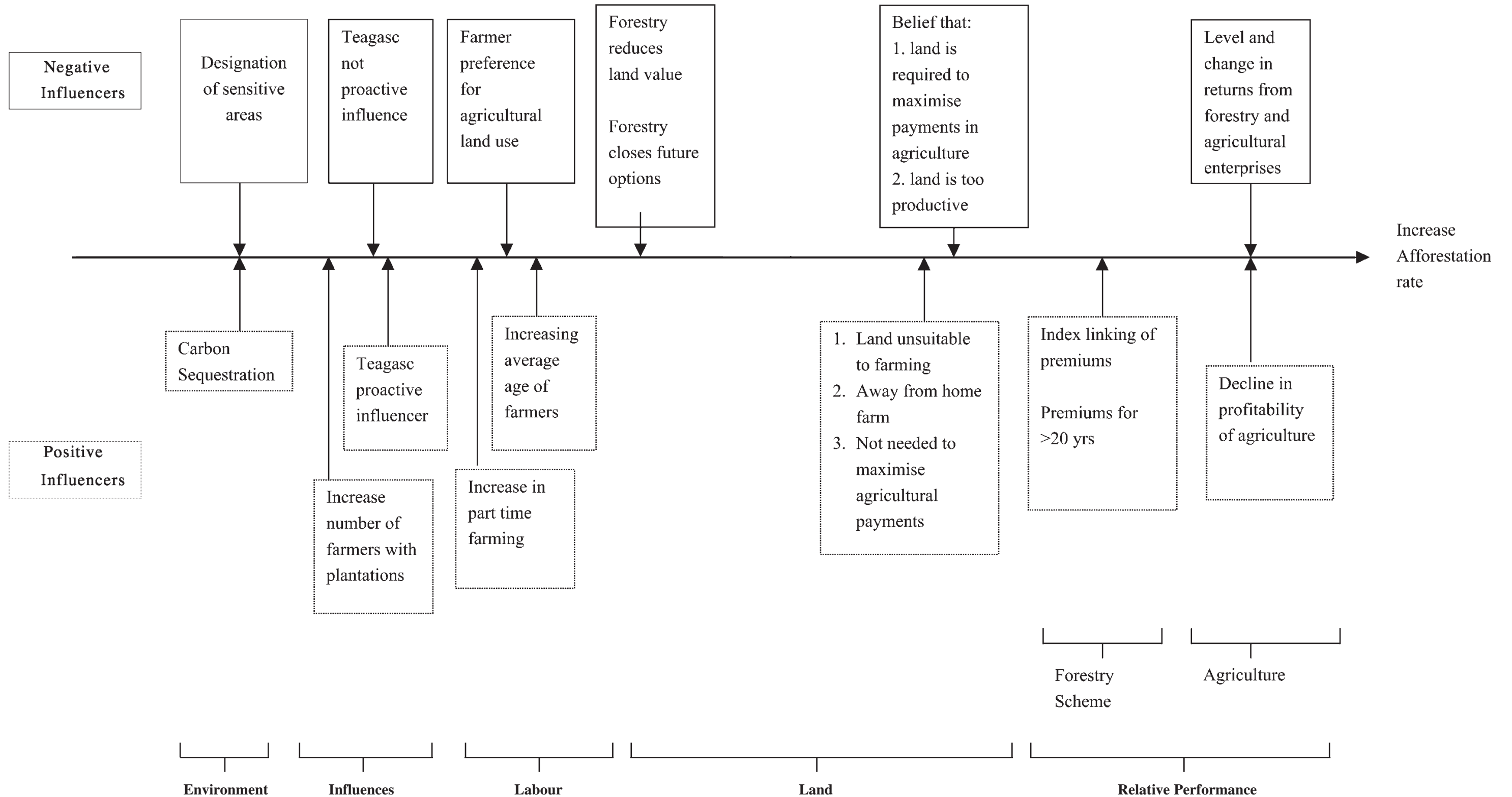
Six self-assessment companies<sup>4</sup> employ foresters to market forestry to landowners. A large number of small enterprises and individual forestry consultants are similarly engaged. Marketing in this context means persuading a landowner to undertake afforestation, assisting in the application for grant aid, carrying out plantation establishment and sometimes overseeing the work.

A shift in resources from the general promotion of afforestation to promotion targeted directly at farmers would better enable the Forest Service to attain the annual afforestation target. Within the existing budget the introduction of performance-based contracts with Teagasc and forestry associations should also result in improvements. If performance-based contracts were to be formulated, then it would be desirable to allow private sector companies to bid for some of this work. The most productive results, in terms of hectares planted, would probably come from marketing support to the afforestation companies, provided of course this was structured to ensure incremental effort and performance.

The following force field diagram summarises the range of factors influencing the rate of private afforestation. The five main categories are land, labour, environment, relative performance of agriculture and forestry, and influencers. The latter two are very much affected by public policy. All factors can have a positive and negative affect on the rate of afforestation.

<sup>4</sup>Self-assessment companies can process applications on behalf of farmers for approval by the Forest Service without the need for preliminary inspection by the Forest Service.

# FORCE FIELD DIAGRAM FOR FACTORS INFLUENCING FARMER PARTICIPATION IN FORESTRY



## **1. INTRODUCTION**

### **The policy environment**

Total forest cover in Ireland is 650,000 ha, 9.4% of the land area of the country. While this is a considerable increase on the 1% cover recorded (Departmental Committee on Irish Forestry 1908) in the early years of the last century it is well below the EU average of 33%. This fact, coupled with a natural competitive advantage in growth rate, is a strong reason for continued expansion of the forest estate in Ireland.

State support for forestry dates back to the first decade of the last century. At present state support for afforestation is administered by the Forest Service. Since the Western Package of 1981, the level of financial support for forestry has increased significantly. It has been the primary driver behind the rapid expansion of the forest estate in the last twenty years.

### **Objectives of forest policy**

In *Growing for the Future*, published in 1996, the government set out the ultimate and immediate objectives for the forestry sector. The ultimate objective was the expansion of productive forest cover so as to maximise its contribution to national and social well being, compatible with protection of the environment. A good deal of emphasis was given to the need to expand the national forest to a level capable of producing a critical mass of roundwood that would support a competitive wood processing sector. It was on this basis that the strategy adopted the target of afforesting 25,000 ha per annum up to 2000 and 20,000 per annum thereafter, up to the year 2030. It was estimated that this would bring the total productive forest area from 464,000 ha (7% of land area) in 1996, to 1.2 million ha (17% of land area) by 2030 and annual wood production would increase from 2.2 million m<sup>3</sup> to 10 million m<sup>3</sup> over the same time period.

Afforestation is supported in the National Development Plan 2000-2006, where it is one of four programmes making up the CAP Rural Development Plan 2000-2006 (the others being Early Retirement, REPS and Compensatory Allowances). In conjunction with the other three measures forestry has somewhat broader objectives than is stated in *Growing for the Future*. The CAP Rural Development Plan states the objective of forestry as being to provide additional income to farmers and rural dwellers, in a context in which other forms of agricultural production are limited and/or yield low incomes, and by this means to ensure the survival of a vibrant rural society. Other considerations include the possibility of increasing exports, or reducing imports at little marginal cost (since most afforested land was presumed to be marginal), removing regional disparities (since a high proportion of marginal land is in the west), and improving the environment.

### **Policy and the rate of afforestation**

Successive governments, since the foundation of the state, have run grant-aid schemes for afforestation, with the overall objective of increasing forest cover (O'Connor and Kearney 1993). Up to 1980, the uptake of private forestry grants, with some notable exceptions, was very limited. This situation began to change in 1981 when the Programme for Western Development included significant tax-free incentives for afforestation. In 1987 improved incentives were offered to farmers in the rest of the country. Further improvements were made in the 1989-93 Forestry Operational Programme and again in the Operational Programme for Rural Development 1994-99. These policy changes resulted in a sharp increase in private planting from 5,500 ha per annum in the first half of the 1980s to about 12,000 ha in the decade 1985-95 (Table 1.1). Since then performance has been less consistent. Afforestation dropped from 1996 to 1998, as a result of competition from other land uses. New support rates from 1998 led to a recovery but it was brief, and afforestation fell again in 2002. At no time did afforestation meet the target set in the government's strategy, though it came close in 1995.



TABLE 1.1: LAND AFFORESTED IN IRELAND FROM 1980 TO 2001.

Year	Public	Private ha	Total
1980	5,922	268	6,190
1981	6,099	275	6,374
1982	6,016	498	6,514
1983	5,698	327	6,025
1984	5,192	473	5,665
1985	4,625	617	5,242
1986	4,688	2,280	6,968
1987	5,395	2,954	8,349
1988	7,111	4,596	11,707
1989	6,629	8,497	15,126
1990	6,670	9,147	15,817
1991	7,855	11,292	19,147
1992	7,565	9,134	16,699
1993	6,827	9,171	15,998
1994	6,622	12,837	19,459
1995	6,367	17,343	23,710
1996	4,426	16,555	20,981
1997	851	10,583	11,434
1998	2,926	10,002	12,928
1999	891	11,777	12,668
2000	1,464	14,231	15,695
2001	317	15,147	15,464

Source: Forest Service

### Previous studies

There have been a number of studies of the factors that affect decision making by landowners in relation to forestry and other land uses. They have used a variety of techniques including micro economic modelling, econometric analysis and opinion surveys. Frawley and Leavy (2001) studied the returns to forestry in comparison with alternative enterprises, and under alternative scenarios concerning intensiveness of farming and presence or absence of off-farm employment. The important conclusion was that in the absence of off-farm employment extensification and REPS payments are competitive with forestry. On the other hand the availability of off-farm employment at the industrial wage makes forestry financially attractive.

Leavey and McCarthy (2002) undertook an econometric analysis of afforestation rates in relation to a number of financial and economic factors. The main influence was demonstrated to be the level of planting grant, followed by annual premiums. Potential proceeds from wood sales were ranked a poor third. Competition from REPS was identified as an important negative influence.

Within the existing grant/premiums framework there is a positive financial incentive for many landowners who choose to afforest their land. This is illustrated by modelling scenarios of farms of different sizes with different levels of intensification. Therefore, the fact that so many landholders have not chosen to afforest their land indicates that non-financial influences are prevalent. A study by Hannan and Commins of factors affecting availability of land for forestry highlights the importance of some of these non-financial factors. Specifically, the authors identified the influence on afforestation levels of the existing land structure and the impact on structures of withdrawal from farming either through sale, retirement or off-farm employment. The study found that, in the Northwest at least, full-time farmers were predominant amongst those afforesting their land. Typically, these farmers were afforesting the marginal parts of their land. The next most important group were part-time farmers, with private investors constituting the third largest group. Many farmers with smallholdings including some marginal land did not engage in forestry despite the evident financial advantages. Recipients of *Unemployment and Small Holders Assistance* very specifically did not participate. The small participation of retired and elderly farmers, who should be foremost amongst

farmers afforesting their land, highlights the importance of non-economic factors. The authors concluded by emphasising the importance of promotional activities by the state and private sector agencies in securing a greater level of involvement of farmers in the afforestation programme.

The aforementioned studies mainly relied on statistics drawn from objective sources such as official files, published data and the Teagasc National Farm Survey. Another important source of information is from surveys of opinions. A number of these have been taken since the 1980s aimed at exploring farmers' attitudes to afforestation in general and the decision to, or not to, afforest their land. A subset of these surveys focused on public attitudes to forestry. It is difficult to summarise the results of these surveys given that they were taken at different times in different parts of the country and using somewhat different methodologies and sampling techniques. However, from a review of these studies by Kearney (2001) a number of points of interest for policy making may be listed as follows:

Most landholders only afforested marginal land and a lack of further marginal land was identified as a constraint for additional afforestation. Associated with this was the prevailing view that only bad land should be afforested and conversely that forestry was not considered a good enough use for good land. These views imply a high degree of inelasticity of supply of good land for forestry with respect to grants and premiums. There was a tendency for this view to be more prevalent in the west than elsewhere.

There were two studies of attitudes of the population in general to forestry. These were based on samples in the west (Mayo/Roscommon in one case and Leitrim in the other) and Wicklow (chosen in both studies because forestry is a long established activity in that county). In the west attitudes to forestry were notably less positive than in Wicklow where it was recognised as having a strong positive impact on local employment. In the west forestry was seen as not contributing much to local employment and was also seen as possibly contributing to rural depopulation.

### Terms of reference

Hannan and Commins, in their 1993 study of the factors affecting the availability of land for forestry conceptualised the determinants of land availability in terms of five different levels of analysis:

- technological and economic factors restructuring agriculture
- economic diversification of the rural economy, especially the availability of off-farm employment
- public policies affecting returns from different agricultural enterprises
- subjective responses of landowners to the foregoing factors
- implementation of the afforestation programme.

This conceptualisation helped form the terms of reference of this report. The purpose of this study is to review the prior knowledge in this area, identify and fill remaining knowledge gaps and to recommend strategies to increase the rate of afforestation, within the existing financial framework, to the levels set out in *Growing for the Future*.

Specifically, the report attempts to evaluate and quantify:

1. the competitiveness of the financial incentives for afforestation relative to alternative enterprises, at present and in the likely future, taking account of changes in agricultural policies,
2. the impact of the wider socio-economic environment on landowners' decisions to afforest,
3. the impact of planning and environmental issues on the decision to afforest,
4. the effectiveness of promotional campaigns on influencing attitudes to forestry and
5. to make recommendations on strategies to address identified barriers to afforestation.

### Methodology

The methodology for the study consisted of a desk research component based on the existing literature and studies referred to above. A second component consisted in interviews with personnel in the Forest Service, Teagasc, industry representatives and individual farmers (Appendix A). The third component was a survey of over 250 farmers spread throughout the country, including those with and without forest (Appendix B). The questions in the survey were based on the issues raised in the literature and interviews with forestry personnel. The questions covered the social and economic status of respondents, their attitudes to forestry in general and specifically in relation to their own land holding, the factors that influenced their decision to

afforest or not, and the role of the state and private sector in stimulating and guiding their decisions. Further discussion of the methodology of the field research is given in Chapter 2.

### Structure of the report

The report is structured as follows. Chapter 2 presents the result of the survey; Chapter 3 deals with the decision to afforest in micro economic terms, showing the costs and benefits of forestry in relation to alternative enterprises. A review of the influence of socio economic factors based on the literature and supplemented by the results of the survey is contained in Chapter 4. Chapter 5 deals with the specific question of the impact of environmental policies on forestry while Chapter 6 examines the means by which forestry is marketed by both the state and private sectors. Since there is very little literature on this aspect of the forestry programme the results are largely based on the interviews and survey. Finally, Chapter 7 presents a review of the main findings of the study and presents a series of recommendations.

## 2. SURVEY OF FARMERS

### Methodology

A field survey of farmers' opinions on various aspects of forestry was undertaken as an integral part of the study. The questionnaire was drawn up on the basis of a review of existing literature and discussions with farmers and professionals involved in the industry. A draft questionnaire was discussed with key industry personnel. It was also piloted with a number of farmers. This led to a number of changes to the draft. It was also decided to use two different questionnaires, one tailored to farmers with forest, the other to farmers without forest.

The desk research and interviews also aided in choosing a suitable methodology for undertaking the survey. Most sampling methodologies represent a compromise between the ideal (which would be a randomised, nationwide survey), which would be prohibitively expensive, and the practical (which involves some form of concentration of the sample), which necessitates a loss of randomness. All previous studies of attitudes referred to in chapter 1 have chosen to concentrate their surveys geographically. The methodology chosen in this study involved national distribution. Furthermore, the primary selection criterion was that the farmer surveyed had at least 5 ha of land that was suitable for afforestation. The survey was undertaken using the services of members of the IFA Farm Forestry Section (plus three others) to administer the questionnaires in their respective areas. The identification of farmers with suitable land was achieved through the local knowledge of the interviewer. The survey was conducted during May and June 2002.

### Characteristics of the sample

Respondents were located throughout the country and interviewers were encouraged to interview farmers from different locations within each county. The distribution of respondents by region is shown in Table 2.1. As can be seen the midlands and mid west were over represented and the west under represented. But otherwise there was a reasonable spread of respondents among the regions.

TABLE 2.1: DISTRIBUTION OF SURVEY RESPONDENTS BY REGION.

Region <sup>6</sup>	Sample (number of respondents)			% Total	National <sup>5</sup> % of farms
	With forest	Without forest	Total		
Border	15	30	45	17.4	19.6
Midlands	12	29	41	15.9	9.1
West	4	14	18	7.0	22.2
<b>BMW</b>	<b>31</b>	<b>73</b>	<b>104</b>	<b>40.3</b>	<b>51.0</b>
Mid-east <sup>7</sup>	6	14	20	7.8	7.5
Mid-west	19	33	52	20.2	12.1
Southeast	12	23	35	13.6	12.6
Southwest	18	29	47	18.2	16.9
SE	<b>55</b>	<b>99</b>	<b>154</b>	<b>59.7</b>	<b>49.1</b>
Total	86	172	258	100.0	100.0

The following tables illustrate an over representation of respondents in the farmer age category 40-49 years, and correspondingly, an under representation in the older age group (Table 2.2). Female farmers are under represented, being 9% of the national total as compared with 4% of the sample (Table 2.3). As regards size (Table 2.4), the sample is biased towards larger farmers since 50% of the sample farms were 50 ha or more

<sup>5</sup> CSO Farm Structure Survey, 1997

<sup>6</sup> A definition of the regions is given in Appendix C

<sup>7</sup> Including Dublin

compared with 14% at national level. Conversely, farmers with 20 ha or less account for nearly half of all farmers but less than 10% of the sample. However, the sample is more accurately representative of plantation size, being only slightly weighted in favour of the smaller size categories (less than 20 ha) (Table 2.5).

TABLE 2.2: AGE DISTRIBUTION OF FOREST OWNERS IN THE SAMPLE AND NATIONALLY.

Age	With forest	Sample Without forest	All	Age	National <sup>8</sup>
Years		%		Years	%
<30	9.3	8.8	9.0	< 35	11.0
30 -39	20.9	20.6	20.7	35- 44	19.2
40- 49	32.6	30.0	30.9	45-54	24.5
50- 59	19.8	27.1	24.6	55- 64	22.5
60 +	17.5	13.5	14.8	65 +	23.0
	100.0	100.0	100.0		100.0

TABLE 2.3 GENDER COMPOSITION OF FOREST OWNERS IN THE SAMPLE AND NATIONALLY.

Gender	With forest	Without forest	All respondents	National <sup>9</sup>
		%		
Male	98.8	94.2	95.7	91.0
Female	1.2	5.9	4.3	9.0
	100.0	100.0	100.0	100.0

Source: Survey, CSO: Agricultural Labour Input, 1999

TABLE 2.4: FARM SIZE AND FOREST OWNERSHIP IN THE SAMPLE AND NATIONALLY.

Size ha	With forest	Without forest	All respondents	National
		%		
< 20	6.0	11.7	9.8	46.7
20-50	25.0	46.8	39.6	39.2
50-100	53.6	33.3	40.0	11.3
100 +	15.5	8.2	10.6	2.8
	100.0	100.0	100.0	100.0

TABLE 2.5: SIZE DISTRIBUTION OF PRIVATE FOREST PLANTATIONS IN THE SURVEY AND NATIONALLY.

Size ha	Sample	National <sup>10</sup>
	%	
<9	36.6	30.5
10-19	31.7	25.2
20-49	18.3	27.5
50+	13.4	16.9

<sup>8</sup> CSO Agricultural Labour Input, 1999

<sup>9</sup> CSO Agricultural Labour Input, 1999

<sup>10</sup> Forest Service

## Farm enterprise

### Dairying

The distribution of farmers surveyed by herd size is shown for farmers with and without forest in Table 2.6. The distribution by herd size broadly followed the distribution of herd size in the total dairy herd. Farmers with forest tended to have larger herds of cows.

TABLE 2.6: DISTRIBUTION OF FARMS WITH AND WITHOUT FOREST IN REATION TO HERD SIZE.

Herd size	With forest	Without forest	All respondents
		%	
<35	23.4	41.9	35.3
35-50	31.9	24.4	27.1
50- 70	23.4	17.4	19.5
70+	21.3	16.3	18.0

### Dry stock

The distribution of farmers surveyed by size of herd is shown in Table 2.7. There is a higher percentage of larger herd size in the sample than in the structure of the overall national cattle herd.

TABLE 2.7: DISTRIBUTION OF FARMS WITH AND WITHOUT FOREST IN RELATION TO NUMBER OF CATTLE.

Number of cattle	With forest	Without forest	All respondents
		%	
< 19	17.6	11.3	15.5
20-34	12.2	18.3	14.2
35-49	10.1	9.9	10.0
50-69	18.9	12.7	16.9
70+	41.2	47.9	43.4

### Tillage

The structure of farmers surveyed by size of tillage area as shown in Table 2.8 is representative of the area under arable crops based on the 1991 census of agricultural production. This shows that there is a high percentage (50%) of farmers with a very small area (<5 ha) under tillage production with the remaining farmers distributed across a range of categories.

TABLE 2.8: DISTRIBUTION OF FARMS WITH AND WITHOUT FOREST IN RELATION TO SIZE OF TILLAGE AREA.

Tillage area ha	With forest	Without forest	All respondents
		%	
<4	53.1	48.3	50.0
5-14	12.5	22.4	18.9
15-24	9.4	8.6	8.9
20-39	12.5	8.6	10.0
40+	12.5	12.1	12.2

## Sheep

The percentage distribution of farms by size of ewe flock is shown in Table 2.9. Half of the farmers surveyed had less than 100 ewes. This structure of flock size is representative of the structure of the national flock in 1991. More recent data on the structure of the ewe flock is not available from the CSO.

TABLE 2.9: DISTRIBUTION OF FARMS WITH AND WITHOUT FOREST IN RELATION TO THE NUMBER OF EWES.

Number of ewes	With forest	Without forest	All respondents
	%		
<100	50.0	56.6	54.6
100-200	25.0	25.0	25.0
200-300	18.8	11.8	13.9
300+	6.3	6.6	6.5

### Farm income

Income from farming was less than 100% of household income for 52% of the farmers surveyed without forest and for 44% of those with forest. The contribution of income from farming to household income (where the farmer or spouse is part-time) is shown in Table 2.10.

TABLE 2.10 FARMING AS A PERCENTAGE OF HOUSEHOLD INCOME ON RELATION TO PARTICIPATION IN FORESTRY.

Farming as % of total income	With forest	Without forest
	%	
≤50	36.8	60.0
>50	63.2	40.0
	100.0	100.0

Income from farming is a bigger contributor to household income on farms with forests than on farms without. Income from farming is greater than 50% on 63% of farms with and only 40% of farms without forests. This is consistent with the earlier finding that forestry is found on larger size farms, and larger enterprises, especially dairying.

### Factors likely to influence the decision to afforest

The profile of the sample with respect to those factors likely to have an influence on the decision to afforest are shown in the tables below. These include receipt of means-tested benefits, possession of land difficult to farm, possession of land in a number of parcels, participation in REPS, receipt of extensification payments and presence of successors in the family.

The forest premiums are taken fully into account as income in the means test for eligibility for social welfare assistance. The non-contributory old-age pension (OAP) and the medical card are means-tested and are likely to be negatively related to the decision to afforest. The survey affords modest support to this proposition since a higher proportion of those without forest receive such benefits than of those with forest (Table 2.11).

TABLE 2.11: PARTICIPATION IN FORESTRY AND MEANS-TESTED HEALTH AND SOCIAL WELFARE BENEFITS (%).

Benefit	Sample		National
	With forest	Without forest	
	%		
Medical Card	1.4	2.8	unknown
Non Contributory OAP	0.0	0.7	unknown
Small Farmer Assistance	1.4	0.7	5.8
Sub total	2.8	4.2	unknown
None	97.2	95.8	unknown
Total	100.0	100.0	

A proportion of the payments received by farmers under REPS are disregarded for means-testing purposes. It follows that consideration should be given to doing the same for forestry premiums.

On the other hand the amount of land considered difficult to farm should be positively associated with the decision to afforest. The sample confirms this assertion (Table 2.12) and the difference between the two is significant<sup>11</sup>. Almost 40% of those without forest possessed no land that was difficult to farm whereas only 18% of those with forest did so. Almost half of all those with forest had 10 ha or more of land difficult to farm compared with less than 25% of those without forest.

TABLE 2.12: PARTICIPATION IN FORESTRY AND DISTRIBUTION OF FARMERS BY SIZE OF LANDHOLDING DIFFICULT TO FARM.

Area of landholding difficult to farm ha	With forest	Without forest
	%	
None	17.9	38.3
< 10	41.7	37.2
10-20	23.8	16.2
20-50	22.9	6.0
> 50	4.8	2.4
Total	100.0	100.0

The number of land parcels owned is also likely to be positively associated with forestry on the basis that traditional farming is difficult on distant and/or smaller plots (Table 2.13). One third of those without forest had one parcel of land compared with one fifth of those with but the difference was not found to be statistically significant.

TABLE 2.13: PARTICIPATION IN FORESTRY AND ITS ASSOCIATION WITH THE NUMBER OF LAND PARCELS OWNED BY FARMERS.

Number of land parcels owned	With forest	Without forest
	%	
1	21.2	32.9
2	21.2	26.5
3	28.2	21.2
4	9.4	7.6
5	14.1	11.8
> 5	6.0	0.0
Total	100.0	100.0

<sup>11</sup> Using a chi-square test at the p≤0.05 level of significance

One would expect that participation in REPS (Table 2.14) and in extensification (Table 2.15) should be negatively associated with forestry, because of the likelihood that afforested land will reduce the denominator in the calculation of stocking rates and disqualify the holder from both schemes. This was not the situation found in the survey. The results show that about one third of each of those with and without forest participate in REPS. As for extensification the picture is similar: a little less than 30% of each of those with and without forest qualify for extensification. Similarly, there is little or no difference between those with and without forest in relation to the higher rate of extensification payments (Table 2.15). The difference in both cases was found not to be statistically significant.

TABLE 2.14: PARTICIPATION RATE IN FORESTRY IN RELATION TO REPS.

REPS status	With forest	Without forest %	Total
Participating	34.1	36.9	36.0
Not participating	65.9	63.1	64.0
	100.0	100.0	100.0

TABLE 2.15: PARTICIPATION RATE IN FORESTRY IN RELATION TO EXTENSIFICATION.

Extensification status	With forest	Without forest %	Total
High payment rate	50.3	51.3	50.9
Low payment rate	21.9	19.4	20.2
Not participating	27.7	29.3	28.8
Total	100.0	100.0	100.0

Finally, the presence of successors in a farm family should be negatively associated with forestry on the grounds that, other things being equal, farmers might prefer to leave irrevocable decisions about farming enterprises to their successors. Table 2.16 supports the proposition: 40% of those without forest have successors, whereas only 24% of those with forestry have. The difference was statistically significant different<sup>12</sup> between the two classes.

TABLE 2.16: PARTICIPATION IN FORESTRY IN RELATION TO SUCCESSOR STATUS.

Presence of successor	With forest	Without forest %	Total
Yes	24	40	35
No	32	30	31
Not yet	44	30	35
	100	100	100

#### Intention to afforest

The following tables show the relationship between intention to afforest and a number of potential explanatory variables. The sample was split more or less evenly between those who intended to afforest, those who intended not to do so and those who were undecided (Table 2.17). Two thirds of those who were already involved in forestry had positive intentions compared with one sixth of those without forest. But those without forest also included a relatively large component (48%) who were undecided.

TABLE 2.17: INTENTION TO AFFOREST.

Intention to plant (again) in the future	Currently with forest	Currently without forest %	Total
Will	64.0	16.5	32.1
Will not	36.0	35.4	35.7
Don't know	0.00	48.2	32.2
Total	100.0	100.0	100.0

Part-time farmers were more positive towards future afforestation than those who were full time (Table 2.18). This was also the pattern with respect to regional differences: those in the SE Region were more positive than those in the BMW region (Table 2.19). In both cases, about half of the sample were undecided.

TABLE 2.18: INTENTION TO AFFOREST IN RELATION TO EMPLOYMENT STATUS OF FARMER.

Intention to plant (again) in the future	Part-time %	Full-time
Will	22.7	13.9
Will not	29.5	36.1
Don't know	47.7	50.0
Total	100.0	100.0

TABLE 2.19: INTENTION OF FARMERS CURRENTLY WITHOUT FOREST TO AFFOREST, BY REGION.

Intention to plant in the future	BMW	Region %	SE
Will	9.7		22.0
Will not	44.4		27.5
Don't know	45.8		50.5
Total	100.0		100.0

Table 2.20 shows future intentions of respondents currently with forest by region. Over 70% of those in the SE Region had positive intentions towards afforestation, compared with 51.6% in the BMW Region.

TABLE 2.20: FARMERS WITH FOREST: INTENTION TO AFFORST BY REGION.

Intention to plant in the future	BMW	Region %	SE
Will	51.6		70.9
Will not	48.4		29.1
Total	100.0		100.0

Other things being equal, having a successor is considered likely to deter farmers from afforesting land since it withdraws land from traditional farming more or less indefinitely, and so closes the options of the succeeding farmer (Tables 2.21, 2.22). The tables support this, with a higher percentage of farmers with a successor likely not to plant in the future than those without a successor. Farmers already with forest seem to be positive in relation to further afforestation, regardless of whether they have a successor or not.

<sup>12</sup> Using a chi-square test at the  $p \leq 0.05$  level of significance

TABLE 2.21: FARMERS CURRENTLY WITH FOREST: INTENTION TO AFFOREST IN RELATION TO SUCCESSOR STATUS.

Intention to plant	Presence of successor		
	Yes	No %	Not yet
Will	60.0	55.6	73.0
Will not	40.0	44.4	27.0
Total	100.0	100.0	100.0

TABLE 2.22: FARMERS CURRENTLY WITHOUT FOREST: INTENTION TO PLANT IN RELATION TO SUCCESSOR STATUS.

Intention to plant	Presence of successor		
	Yes	No %	Not yet
Will	14.1	16.7	14.9
Will not	40.6	31.3	34.0
Don't know	45.3	52.1	51.1
Total	100.0	100.0	100.0

#### Farmers' attitudes to forestry

A number of questions in the survey were aimed at establishing attitudes to forestry. Table 2.23 shows the results of questions about the desirable area of forest, differentiated by whether the forest is close to the respondent, in his neighbourhood or in the country generally. A large majority of farmers accepted the current level of forest whether it was adjacent to them or not. But there was a considerable excess of those who thought there was too little over those who thought there was too much. However, enthusiasm for forestry increased with distance of the forest from the farmer. One fifth of respondents thought there was too little forest where they live but over half thought there was too little in the country. A similar pattern was found by O'Leary *et al.* (2002) in relation to proximity of forest to the homestead. However the results for Ireland in general conflicted those found by O'Leary *et al.* O'Leary *et al.* found that most people in East Wicklow, and to a lesser extent in South Leitrim, felt there was too much forestry whereas in this survey most of those interviewed felt there was too little, especially those who had plantations themselves.

TABLE 2.23: PERCEPTION OF THE AMOUNT OF FOREST.

	Too little	OK as it is	Too much	Don't know	Average perception <sup>13</sup>
	% of respondents				
<b>Next to where I live</b>					
All	19.8	69.3	7.4	3.5	1.9
With forest	24.7	68.9	4.7	2.4	1.9
Without forest	17.4	69.8	8.7	4.1	2.0
<b>In this locality generally</b>					
All	33.2	57.4	7.4	2.0	1.8
With forest	44.7	48.2	4.7	2.4	1.7
Without forest	27.5	62.0	8.8	1.8	1.9
<b>In Ireland in general</b>					
All	64.2	22.0	3.5	10.2	1.6
With forest	82.4	11.8	2.4	3.5	1.3
Without forest	55.0	27.2	4.1	13.6	1.8

<sup>13</sup> Average of: 1 = too little, 2 = OK as it is and 3 = too much

Attitudes were also influenced by forest type. Forty-four percent of those with forest and 51% of those without stated that their attitudes to forestry were influenced by forest type. Farmers who have forests have a distinct preference for a mixture of broadleaves and conifers, whereas those without have a strong preference (71%) for broadleaved forest (Table 2.24). It is clear from these results that there is a preference for broadleaves over conifers. This preference is strongest among those without forest.

TABLE 2.24 PREFERRED FOREST TYPE.

Forest type	With forest	Without forest	All
	% of respondents		
Broadleaved	17.3	71.0	53.0
Natural/native	11.5	8.6	9.6
Mixed broadleaved /coniferous	65.8	14.3	31.7
Coniferous	2.9	4.3	3.8
Other	2.9	1.4	1.9

The results of a further examination of farmers' attitudes to forestry are shown in Table 2.25. The first five questions were negative about forestry. Those with forest answered three of these questions positively. That is, they did not agree that afforestation meant that farming has failed, nor that planting is 'the last resort', nor that forestry is for farmers who are exiting agriculture. Farmers without forest were either neutral (as many agreed as disagreed) or they were negative about these suggestions. All farmers agreed with the suggestion that forestry is only relevant for marginal land and all farmers also indicated that forestry as a farm enterprise is too long-term. Farmers without forest also believed that forestry was for people exiting agriculture. All farmers agreed that broadleaves were more acceptable than conifers, that forestry provides a high income alternative, that forestry is easier to manage and that better land makes for better forestry.

TABLE 2.25: FARMERS' VIEWS ON FORESTRY.

	<i>Strongly agree</i>	<i>Agree</i>	<i>Neither agree nor disagree</i>	<i>Disagree</i>	<i>Disagree strongly</i>	<i>Don't know</i>
	<i>% of respondents</i>					
<b><i>Planting my land with trees indicates that farming has failed</i></b>						
<i>All respondents</i>	10.6	28.3	10.2	37.8	11.0	2.0
<i>With forest</i>	8.2	20.0	14.1	41.2	15.3	1.2
<i>Without forest</i>	11.8	32.5	8.3	36.1	8.9	2.4
<b><i>Forestry is only relevant for land that is unsuitable for farming</i></b>						
<i>All respondents</i>	17.5	43.2	8.2	27.6	3.1	0.4
<i>With forest</i>	15.1	32.6	10.5	39.5	2.3	
<i>Without forest</i>	18.7	48.5	7.0	21.6	3.5	0.6
<b><i>Planting land with trees is the last resort</i></b>						
<i>All respondents</i>	8.6	25.3	8.2	43.6	10.9	3.5
<i>With forest</i>	5.8	14.0	10.5	47.7	19.8	2.3
<i>Without forest</i>	9.9	31.0	7.0	41.5	6.4	4.1
<b><i>Forestry is most suited to farmers exiting</i></b>						
<i>All respondents</i>	5.2	40.9	14.7	29.8	3.2	6.3
<i>With forest</i>	7.4	25.9	19.8	37.0	4.9	4.9
<i>Without forest</i>	4.1	48.0	12.3	26.3	2.3	7.0
<b><i>Forestry is too long term</i></b>						
<i>All respondents</i>	12.3	46.8	12.3	20.2	2.8	5.6
<i>With forest</i>	7.2	39.8	16.9	26.5	3.6	6.0
<i>Without forest</i>	14.8	50.3	10.1	17.2	2.4	5.3
<b><i>Planting my land with broadleaf is more acceptable than with conifers</i></b>						
<i>All respondents</i>	10.9	46.5	9.8	19.9	3.5	9.4
<i>With forestry</i>	9.3	38.4	10.5	32.6	5.8	3.5
<i>Without forestry</i>	11.8	50.6	9.4	13.5	2.4	12.4
<b><i>Forestry provides a high income alternative</i></b>						
<i>All respondents</i>	4.7	37.2	17.8	24.5	3.2	12.3
<i>With forestry</i>	8.4	48.2	14.5	20.5	6.0	2.4
<i>Without forestry</i>	2.9	31.8	19.4	26.5	2.4	17.1
<b><i>A forestry farm is easier to manage than your current enterprise mix</i></b>						
<i>All respondents</i>	15.4	55.1	7.9	12.2	0.4	9.1
<i>With forestry</i>	19.5	57.3	6.1	15.9	0.0	1.2
<i>Without forestry</i>	13.4	54.1	8.7	10.5	0.6	12.8
<b><i>Better land makes for better forestry</i></b>						
<i>All respondents</i>	17.9	63.4	4.3	7.8	0.8	5.8
<i>With forestry</i>	23.8	65.5	7.1	3.6	0.0	0.0
<i>Without forestry</i>	15.0	52.4	2.9	9.8	1.2	8.7

**Decision to afforest**

To summarise, of the sample of 86 farmers who already had forest 53% would consider further afforestation. Of those who had not afforested, 20% had seriously considered the idea, but had rejected it. These decisions are explored through a series of questions, the answers to which are presented in the following paragraphs. The results for those farmers with forest and those without, are presented separately below.

Most of the questions were open: respondents were asked to give their reasons in their own words. In the case of some questions they were also invited to give more than one reason and to prioritise them.

The answers to the open questions were varied but most can be grouped into a number of related areas as shown:

**Agricultural**

- maximising transfers through current agricultural policy (i.e. extensification and REPS);
- comparative returns from other enterprises and
- waiting for further changes in agricultural policy.

**Scheme related**

- indexation of premiums;
- the duration of premium payments (20 years);
- non eligibility of retirees and
- some other conditions of participation in the scheme.

**Personal**

- preferences for non-forestry use of land;
- lack of confidence of ability to handle a new enterprise and
- reluctance to enter a new field due to age.

**Land**

- includes belief that the farm is too small;
- fear that value of land would be reduced and
- reluctance to plant available land close to the house.

**Attractiveness of investment**

- includes replies such as the long-term nature of the investment;
- doubts about existence of a market;
- fear over rising costs and
- other investment priorities.

**Farmers with forest**

Farmers with forest were asked to identify the factor(s) that prompted them to consider forestry and whether they would consider it again, and if so what factors would prompt them to consider it positively.

The main reasons for choosing forestry were financial, expressed in terms of the attractiveness of the premiums or the lack of attractiveness of alternatives. The second most common group of answers related to the lack of suitability of the land for conventional farming. (Table 2.26)

TABLE 2.26: FARMERS WITH FOREST: FACTORS THAT INFLUENCED THEM TO PLANT.

<i>Factor</i>	<i>%</i>
<i>Agricultural</i>	21.8
<i>Scheme related</i>	28.2
<i>Land</i>	33.3
<i>Other</i>	16.7
<i>Total</i>	100.0

When asked to identify reasons for not planting more of their land the most common answers were the lack of suitable (low value) land and disqualification from extensification payments (Table 2.27).

TABLE 2.27: FARMERS WITH FOREST: REASONS FOR NOT PLANTING MORE LAND.

Factor	Reason 1 <sup>14</sup>	Reason 2
	%	
Agricultural	16.7	40.0
Scheme related	13.3	13.3
Personal	0.0	6.7
Land	66.7	26.7
Experience with enterprise	3.3	13.3
Total	100.0	100.0

Farmers with forest who were not intending to plant again were asked what would prompt them to change their minds (Table 2.28). The reasons given were indexation of premium payments, higher grants and payments for longer than 20 years.

TABLE 2.28: FARMERS WITH FOREST NOT INTENDING TO PLANT FURTHER LAND — FACTORS THAT WOULD ENCOURAGE THEM TO DO SO.

Factor	Reason 1 <sup>14</sup>	Reason 2
	%	
Agricultural	23.1	7.7
Scheme related	38.5	53.8
Personal	0.0	7.7
Land	15.4	0.0
Nothing	19.2	0.0
Experience with enterprise	3.3	13.3
Total	100.0	100.0

*Farmers without forest*

Farmers were presented with reasons given by other farmers as to why they had not planted their land and were asked to rate them. The results broken down by those who had, and those who had not seriously considered forestry are shown in Table 2.29.

TABLE 2.29: FARMERS WITHOUT FOREST: REASONS WHY THEY DECIDED NOT TO AFFOREST.

	Had considered forestry	Had not considered forestry	All
	%	%	%
<b>Agricultural</b>			
• I am waiting to see the changes in agricultural policy in a few years	56.4	37.8	41.0
• REPS gives a better return	11.1	20.9	18.5
<b>Scheme</b>			
• I am waiting to see if premiums and grants for forestry will be improved	62.5	46.6	49.1
<b>Land</b>			
• My property is too small	11.4	28.2	24.3
• My land is too productive for trees/ I have no marginal land	19.3	59.7	50.3
• I need my land to qualify for extensification premiums	55.5	78.9	72.8
• Planting land with trees reduces the value of the land	33.7	52.1	47.4
<b>Personal</b>			
• I don't like forests	5.8	16.3	13.9
• I don't know anything about forestry	16.7	52.2	43.9
• I will let my children decide about the best land use	19.4	37.3	32.9
• It would mean a loss of social welfare entitlements	2.8	8.2	6.9
<b>Investment</b>			
• I am not confident I can get good advice investment	8.3	5.9	6.4
• I am not confident there is a market for timber	30.5	24.6	25.4
• Couldn't sell immature forest	33.3	17.1	20.2
• My land use options are closed for far too long	57.6	45.0	46.8
<b>External</b>			
• I am not allowed according to regulations (Dúchas; Local Authority)	5.5	2.2	2.9
• There is enough/too much forest in this area already	5.6	22.4	18.5
• There is strong resistance to planting trees in this area	8.7	15.6	13.9
• Other farmers with forestry are not encouraging entry	14.4	19.3	17.9

Those who had seriously considered forestry stated (Table 2.29) that they were waiting to see if there would be changes in agricultural policy or if there would be improvements in the grant and premiums. Furthermore they believed that they needed their land to qualify for extensification premiums and that their land use options would be closed for too long if they put it into forestry. Those who had never seriously considered forestry (Table 2.29) gave reasons related to land: it was too productive, it was needed to qualify for

<sup>14</sup> Respondents were asked to state the reasons that they had not planted forest; some gave more than one reason.



extensification premiums or forestry would devalue the land. These reasons are consistent with those given by farmers where the answers were unprompted.

Farmers were then asked to prioritise the reasons why they hadn't planted forest. The results broken down by those who had and hadn't considered forestry as an option are presented in Table 2.30. Those who had considered forestry gave the highest priority to the need for land to qualify for extensification, and awaiting clarification of future developments in agricultural policy. Waiting to see if premiums were to be improved was also given as a reason for not planting. For those who had not considered forestry the most important reason given was that land was too productive and that land was needed for extensification.

TABLE 2.30: FARMERS WITHOUT FOREST: PRIORITISATION OF REASONS FOR NOT AFFORESTING.

<i>Reason</i>	<i>Had considered forestry</i>	<i>Had not considered forestry</i>	<i>All</i>
		<i>Ranking</i>	
<i>I need my land to qualify for extensification premiums</i>	1	2	2
<i>I have never seriously thought about it</i>			
<i>My land is too productive for trees</i>	4	4	6
<i>I am waiting to see if premiums and grants for forestry will be improved</i>	2	1	1
<i>I am waiting to see the changes in agricultural policy in a few years</i>	1	3	5
<i>My land use options are closed for too long if I plant my land</i>	3	7	3
<i>Planting land with trees reduces the value of the land</i>	5	6	4
<i>My property is too small</i>	6		
<i>I am not confident there is a market for timber</i>	5		

Farmers who had not considered forestry (Table 2.32) were also asked to identify factor(s) that would influence them positively in the future. The factors given were consistent with those that discouraged them from afforestation in the first place (Table 2.29). For both those who had considered forestry (Table 2.31) and those who had not (Table 2.32) the main factors that would encourage them to plant were given as an increase in the premiums, and deterioration in returns from agriculture.

TABLE 2.31: FARMERS WITHOUT FOREST WHO HAD CONSIDERED FORESTRY: FACTORS THAT WOULD INFLUENCE THEM TO PLANT.

<i>Factor</i>	<i>Reason 1</i>	<i>Reason 2</i>	<i>Reason 3</i>
		<i>%</i>	
<i>Agricultural</i>	22.6	25.0	37.5
<i>Scheme related</i>	54.8	37.5	31.3
<i>Personal</i>		12.5	6.3
<i>Land</i>	3.2		6.3
<i>Other</i>	16.1	25.0	18.8
<i>Nothing</i>	3.2		

TABLE 2.32: FARMERS WITHOUT FOREST WHO HAD NOT CONSIDERED FORESTRY: FACTORS THAT WOULD INFLUENCE THEM TO PLANT.

<i>Factor</i>	<i>Reason 1</i>	<i>Reason 2</i>	<i>Reason 3</i>
		<i>%</i>	
<i>Agricultural</i>	18.5	18.5	22.2
<i>Scheme related</i>	32.3	27.8	16.7
<i>Personal</i>	14.5	35.2	33.3
<i>Land</i>	6.5	3.7	11.1
<i>Other</i>	7.3	14.8	16.7

#### Sources of Information

Teagasc dominates the market for provision of farm advice for farmers with forest (75%) and farmers without (80%) (Table 2.33). Sixty nine percent of those without forest and 57% of those with forest mentioned Teagasc as a single source of farm advice whereas Teagasc in addition to other sources were indicated by between 12 and 18%.

TABLE 2.33: SOURCES OF ADVICE ON FARMING.

<i>Source</i>	<i>Farmers with forest</i>	<i>Farmers without forest</i>	<i>All</i>
		<i>%</i>	
<i>Teagasc</i>	57.0	68.7	64.9
<i>Teagasc and others</i>	17.7	11.7	13.6
<i>Private Sector</i>	5.1	1.8	2.9
<i>Other farmers/relatives</i>	15.2	3.1	7.0
<i>Co-operatives</i>	2.5	2.5	2.5
<i>Reading</i>	2.5	11.0	8.3
<i>None</i>	0.0	1.2	0.8
	100.0	100.0	100.0

Farmers both with and without plantations were asked to indicate if Teagasc had suggested that they plant their land (Table 2.34). In only a small minority of cases (15% for those with forest and 9% for those without) had a Teagasc representative suggested forestry as a possible land use. Clearly, this was not because the farmers were not in touch with Teagasc (as the preceding paragraphs have indicated Teagasc is regarded as the most important source of advice for farmers). Evidently there is something amiss in the way in which advice on forestry is incorporated in Teagasc advisory activities.

TABLE 2.34: TEAGASC SUGGESTED AFFORESTATION.

<i>Teagasc suggested afforestation as a possible land use</i>	<i>Farmers with forest</i>	<i>Farmers without forest</i>	<i>All</i>
		<i>%</i>	
<i>Did</i>	15.1	9.2	11.2
<i>Did not</i>	84.9	90.9	88.8
	100.0	100.0	100.0

However, more than two thirds of farmers with forest had attended a Teagasc demonstration/field day and 71% had attended an information evening or seminar (Tables 2.35 and 2.36).

TABLE 2.35: ATTENDANCE AT TEAGASC DEMONSTRATIONS/FIELD DAYS.

	<i>Farmers with forest</i>	<i>Farmers without forest</i> %	<i>All</i>
<i>Had attended</i>	67.1	12.4	30.6
<i>Had not attend</i>	32.9	87.6	69.4
<i>Total</i>	100.0	100.0	100.0

TABLE 2.36: ATTENDANCE AT INFORMATION EVENING/SEMINAR (%).

	<i>Farmers with forest</i>	<i>Farmers without forest</i> %	<i>All</i>
<i>Had attended</i>	71.4	15.3	33.9
<i>Had not attend</i>	28.6	84.7	66.1
<i>Total</i>	100.0	100.0	100.0

Table 2.37 shows the situation in relation to approaches to farmers by a forestry company. A forestry company had approached 44% of those with forest and 13% of those without. These results reflect a high level of activity by the forestry companies. However, the companies had never approached a significant number of farmers, even those farmers currently with forest. Taken in conjunction with the figures on Teagasc input to the afforestation decision, it indicates that a high proportion of those who go ahead with afforestation make the decision unaided, or at least do not attribute their decision to plant to any one group. This is confirmed by table 2.38, which shows that almost one quarter (23%) of those who afforested did not report encouragement from an individual or organisation.

TABLE 2.36: ATTENDANCE AT INFORMATION EVENING/SEMINAR (%).

	<i>Farmers with forest</i>	<i>Farmers without forest</i> %	<i>All</i>
<i>Approached</i>	44.2	12.7	23.2
<i>Not approached</i>	55.8	87.3	76.8
<i>Total</i>	100.0	100.0	100.0

TABLE 2.38: FARMERS WITH FOREST: INDIVIDUALS OR ORGANISATION WHICH ENCOURAGED THEIR TAKE-UP OF AFFORESTATION.

<i>Organisation</i>	<i>%</i>
<i>Private forestry company</i>	28.8
<i>Teagasc</i>	13.7
<i>Forest Service</i>	9.6
<i>General purpose co-operative</i>	5.5
<i>Coillte</i>	4.1
<i>IFA/other farmers</i>	2.7
<i>Friends or neighbours</i>	2.7
<i>Farm Relief Service</i>	1.4
<i>Others</i>	8.2
<i>None of the above</i>	23.3

Farmers, both those with and without forest also mentioned other farmers and relatives as sources of information. This conforms to the established understanding of the diffusion of technical knowledge in agriculture. As forestry becomes more widespread, this channel is likely to become more important.

Half of those farmers with forest were members of a forestry organisation (Table 2.39)

TABLE 2.39: PARTICIPATION OF RESPONDENTS IN FARM AND FORESTRY ORGANISATIONS

	<i>With forest</i>	<i>Without forest</i> %	<i>All</i>
<i>Farm organisation</i>	90.6	76.2	80.9
<i>Forestry organisation</i>	50.7	6.7 <sup>15</sup>	22.5

Respondents were asked which organisations or individuals would they go to for advice about forestry if they were considering it (Table 2.40). Teagasc was the most common source, followed by the private sector. It was noteworthy that the numbers who mentioned Teagasc as a potential source of advice about forestry (42% for farmers with forest and 43% for those without) is less than the number who mentioned Teagasc as source of advice about farming (57% for those with forest and 69% for those without – Table 2.33).

TABLE 2.40: SOURCES OF INFORMATION ON FORESTRY.

<i>Source</i>	<i>Farmers with forest</i>	<i>Farmers without forest</i> %	<i>All</i>
<i>Teagasc</i>	29.6	38.6	35.5
<i>Teagasc and others</i>	12.3	4.8	7.3
<i>Private sector</i>	18.5	13.3	15.0
<i>Coillte</i>	4.9	15.1	11.7
<i>Forest Service</i>	13.6	4.8	7.7
<i>Local forester</i>		0.0	
<i>Experienced farmers</i>	7.4	15.1	12.6
<i>Others</i>	4.9	5.5	4.5
<i>Don't know</i>	3.7	6.6	5.7
<i>Total</i>	100.0	100.0	100.0

Finally, respondents were asked how they became aware of the forestry scheme (Table 2.41). Personal contacts (friends, neighbours, relatives) were the most frequently cited channel (27%) followed by advertisements (24.7%). Commercial forestry companies (11%) and Teagasc (9%) were also sources of information.

TABLE 2.41: CHANNEL THROUGH WHICH FARMERS WITH FOREST BECAME AWARE OF FORESTRY.

<i>Channel</i>	<i>%</i>
<i>Friends, relatives or neighbours</i>	27.1
<i>Advertisements</i>	24.7
<i>Forestry company</i>	10.6
<i>Teagasc</i>	9.4
<i>Two or more of the above</i>	15.3
<i>Could not remember</i>	3.5
<i>Other</i>	9.4

<sup>15</sup> Eight respondents without forest stated they were members of a forestry organisation.

### 3. ECONOMIC RETURNS TO FARM FORESTRY

The amount of premium payable varies according to the land category and species planted and by the status of the applicant (i.e. farmer or non-farmer). For the purposes of the afforestation scheme a farmer is defined as a person who:

- practices farming within the state,
- owns, leases, or is involved in the management of at least 3 ha,
- derives at least 25% of income from agriculture and
- lives within 70 miles of the forest plantation.

The current range and level of incentives for farmers for different categories of afforestation are shown in Table 3.1.

TABLE 3.1: RATES<sup>16</sup> OF AFFORESTATION GRANT AND PREMIUM.

<i>Land category/species</i>	<i>Annual premium<sup>17</sup> (for 20 years)</i>	<i>Planting grant</i>	<i>Second instalment grant (year 5)</i>	<i>Total grant</i>
			<i>€/ha</i>	
<i>Unenclosed</i>	209	2,032	698	2,730
<i>Enclosed</i>				
<i>Conifers</i>				
<i>Sitka spruce/lodgepole pine</i>	349	2,032	698	2,730
<i>20% diverse</i>	404	2,159	698	2,857
<i>Diverse</i>	429	2,413	762	3,174
<i>Broadleaves</i>				
<i>Broadleaf except oak and beech</i>	455	3,809	1,143	4,952
<i>Oak</i>	486	4,825	1,524	6,349
<i>Beech</i>	486	5,079	1,651	6,730

The highest level of grants and premiums are available for beech and oak. Other broadleaved species such as ash and sycamore also attract higher-than-average rates. Non-diverse conifers have the lowest level of support.

As a comparison Table 3.2 shows the level of income/ha obtained from different systems of farming as shown in the National Farm Survey, 1998 – 2000 Teagasc (2001).

Apart from dairying and dairy and other enterprises, and, to a lesser extent, mainly tillage afforestation premium payments could exceed prevailing farm income levels on 63% of all farms.

Table 3.3 shows the importance of direct payments in relation to family farm income. It shows that the profitability, and consequent competitiveness of the three farming systems giving lower returns than those available through afforestation premiums, is heavily dependent on direct payments.

Since the reform of the CAP in 1992 the level of direct payments has grown to exceed family farm income on many low-income farms. The average ratio of direct payments for afforestation compared to cattle, cattle and other and mainly sheep was 93%, 109% and 91% respectively in the period 1993-2000 (Table 3.4). Direct payments for afforestation have been consistently lower than for the low-income farm systems. The ratio was even lower for the period 1996 to 2000 after the introduction of REPS, than for the total period, 1993- 2000.

<sup>16</sup> Rates are the maximum for each category. Grant-aid is cost based.

<sup>17</sup> For plantations less than 6 ha the premium is approximately €13 less than the level for those 6–12 ha; for plantations greater than 12 ha the premium is approximately €13 more than the level for those 6–12 ha.

TABLE 3.2: FAMILY FARM INCOME (FFI) AND FORESTRY PREMIUM/HA, 1998—2000.

Enterprise	Number of farms	Year		
		1998	1999	2000
	%	€/ha/year		
Dairying	19	686	649	770
Dairying and other	13	514	447	514
Mainly tillage	5	432	356	477
Forestry premium <sup>18</sup>		343	343	404
Cattle	22	291	201	315
Cattle and other	27	334	215	286
Mainly Sheep	14	254	208	262
All enterprises	100	427	345	434

TABLE 3.3 FAMILY FARM INCOME AS A PERCENTAGE OF DIRECT PAYMENTS.

Enterprise	Percentage of all farms	Year		
		1998	1999	2000
		%		
Cattle	22	81	63	83
Cattle and other	27	98	79	81
Mainly sheep	14	78	69	83

TABLE 3.4 FORESTRY PREMIUM AS A PERCENTAGE OF DIRECT PAYMENTS TO LOW INCOME FARM SYSTEMS, 1993—2000.

Year	Enterprise		
	Cattle	Cattle and other	Mainly sheep
	%		
1993	188	259	111
1994	89	108	86
1995	50	51	54
1996	41	44	50
1997	65	69	81
1998	95	101	106
1999	107	127	114
2000	107	114	124
Average 1993-00	93	109	91
Average 1996-00	83	91	95

Furthermore, the average annual growth rate in forestry premium was lower than the average annual growth rate for direct payments to the cattle, and cattle and other systems in the period 1993/94 to 1999/00. It exceeded the growth rate for mainly sheep by 4.6 percentage points (Table 3.4). The comparison in the above table does not take account of the other market supports given to conventional agricultural enterprises. Kearney (2002) estimated that the total support (including direct payments, market and other supports) for forestry is approximately 40% of the support for agriculture on a per hectare basis.

The change in the grants and in the premiums in the period 1998 to 2002 is shown in tables 3.4 and 3.5 respectively.

<sup>18</sup> The forestry premium refers to the 20% diverse plantation >6 and ≤ 12 ha.

TABLE 3.5: CHANGES IN GRANT RATES/HA FOR DIFFERENT LAND-USE CATEGORIES AND SPECIES OVER THE PERIOD 1998 — 2002 (APPLICABLE TO FARMERS).

Land-use category/species	Total grant 1998	Total grant 2002	Change 1998-2002	Average annual change 1998-2002 %
<b>Unenclosed</b>	1,956	2,730	774	6.9
<b>Enclosed</b>				
<i>Conifers</i>				
Sitka spruce/lodgepole pine	2,159	2,730	571	4.8
20% diverse	2,286	2,857	571	4.6
Diverse	2,591	3,174	583	4.1
<i>Broadleaves</i>				
Broadleaf except oak & beech	3,810	4,952	1,142	5.4
Oak	4,699	6,349	1,650	6.2
Beech	5,080	6,730	1,650	5.8

TABLE 3.6: PREMIUMS/HA<sup>19</sup> FOR DIFFERENT FORMER LAND-USE CATEGORIES AND SPECIES OVER THE PERIOD 1998—2002 (APPLICABLE TO FARMERS).

Land-use category/species	Premium 1998	Premium 2002	Change 1998-2002	Average annual change 1998-2002 %
	€/ha			
<b>Unenclosed</b>	184.15	210	25	2.6
<b>Enclosed</b>				
<i>Conifers</i>				
Sitka spruce/lodgepole pine	317.50	350	19	1.9
20% diverse	343.00	404	48	3.3
Diverse	368.30	430	48	3.1
<i>Broadleaves</i>				
Broadleaf except oak & beech	400.00	455	42	2.6
Oak	432.00	486	42	2.4
Beech	432.00	486	42	2.4

While the grant rate has more than kept pace with the annual inflation rate over the period 4.2% (as measured by the Consumer Price Index), annual premiums have failed to do so.

Frawley and Leavey (2001) examined the competitiveness of afforestation, including returns from wood sales, in relation to other farm enterprises after full implementation of the CAP reform in 2007. The picture that emerges from that analysis is that

1. in the absence of off-farm job opportunities, (i.e. where the opportunity cost of working on- instead of off-farm is nil), extensification premiums and REPS payments will enable efficient, conventional cattle enterprises, which are more labour intensive than forestry, to compete with afforestation;
2. when off-farm job opportunities are available at or near minimum wage rates (i.e. opportunity cost of off-farm employment is small) there is little change in the competitiveness of afforestation;

<sup>19</sup> Forestry premium refers to plantations >6 and ≤ 12 ha.

3. when off-farm job opportunities are available at or near industrial wages (i.e. opportunity cost is high) afforestation becomes competitive with cattle enterprises.

The new Fischler proposals for the mid-term review of Agenda 2000 have made the policy environment even more uncertain up to 2007. The proposal to decouple payments to farming from production is a substantial change in policy and is a contradictory signal to that given in Agenda 2000. This uncertainty is likely to cause farmers to put off any decisions in relation to land use change and especially long-term change. Also, confidence in the policy direction will be undermined given the proposed substantial changes. This will not augur well for winning farmer confidence in afforestation in the short-term.

#### 4. SOCIO ECONOMIC FACTORS

Hannan and Commins (1993) observe that the decision to afforest land is taken within the context of changes in the structure of agriculture, notably in relation to the size of farms, availability and use of off-farm employment, public policies, the response by landholders to structural change and public policy, and the implementation strategies of the state agencies involved. The fundamental influences are the trends in farm incomes, which are heavily influenced by public policies, and the availability and quality of off-farm employment. These then impact on decisions by landholders on the extent and form of continued participation in farming, including forestry, or to withdraw from it altogether. Hannan and Commins's study relates to the period up to 1990. Developments since then have been explored by a number of authorities, among which is a recent review by Leavy and McCarthy (2002).

This chapter briefly reviews recent trends in the main economic and social influences on the rural economy in general and their impact on the potential role of forestry.

##### Policy context

For its first 25 years the CAP promoted its objectives of self-sufficiency and higher incomes for farmers through a system of supports for production. The policy was highly successful in boosting production and the incomes of some farmers, but somewhat less successful in dealing with rural poverty. Moreover, the policy was expensive and, as it generated export surpluses, it disrupted international trade, leading to strong opposition from other agricultural producers, notably the US. These furnished the principal reasons for the changes which, starting with the introduction of milk quotas in 1984, followed by the McSharry reforms of the late 1980s, and more recently the Agenda 2000 changes, led to a system in which supports for agriculture are increasingly independent of (decoupled from) production.

Other considerations supporting this change away from 'productionist' policies include concern for the impact of intensive production on the environment and on animal and human health. The recognition that rural development is wider than agriculture has also influenced policy makers and the development of the CAP. In this policy context forestry has enjoyed a progressively more important role in that there is no evident over-supply of wood. Forestry and associated activities can be promoted to offset some of the impact on rural development of the decline in agriculture.

##### Output and incomes

The net effect of the changing policy mix has been an increase in the volume and value of gross output (Figure 4.1) during the 1980s (though at a slower rate than in the decade following entry to the EEC); in the 1990s there has been no consistent trend. Aggregate farm incomes did continue to rise during the 1990s but at a lower rate compared to the 1980s. Converting these trends into income per farm or per farmer is complicated by the absence of a consistent time series of farmer numbers between the 1980s and 1990s. However, the new Agricultural Labour Input series produces a consistent series for the 1990s that shows that numbers declined by 16% between 1991 and 1999. In conjunction with a rise in agricultural income of 24% over the same period this produced a 54% increase in average farm incomes from farming over this period (the base year being the average of 1990-1992 due to the exceptionally low figure for 1991). During the same period average industrial wages grew 57%. Therefore the increase in average agricultural and industrial earnings was about the same. However, the security of agricultural incomes was less certain, with two noticeable drops during the decade compared to a constant and consistent rise in industrial income (Table 4.1).

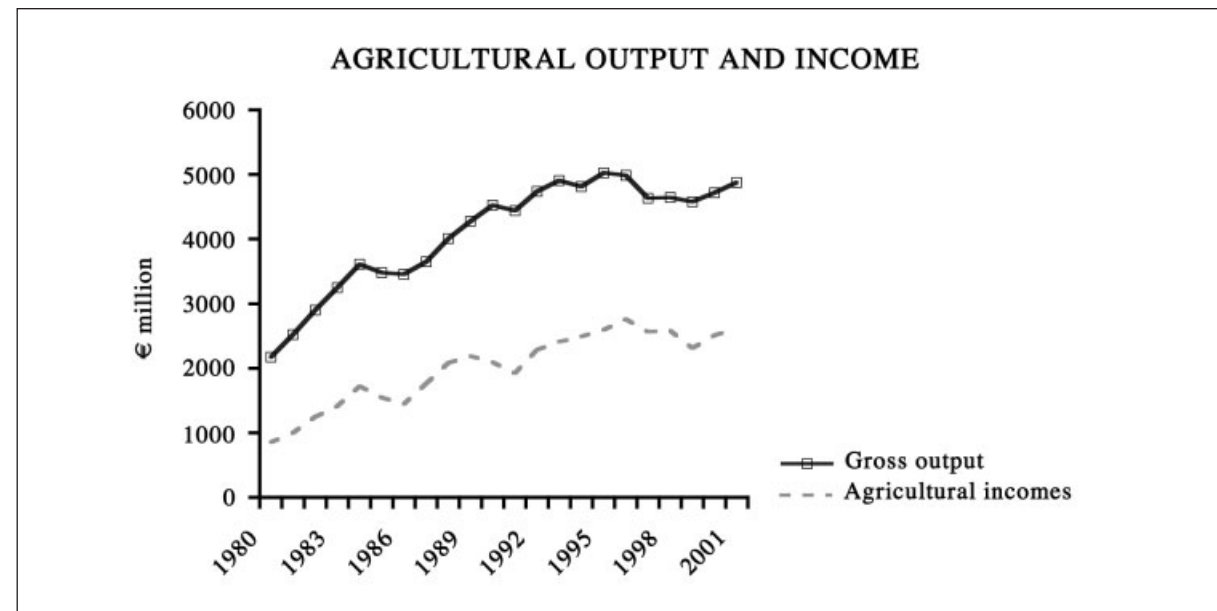


FIGURE 4.1: AGRICULTURAL OUTPUT AND INCOME OVER THE PERIOD 1980-2000.

TABLE 4.1: RELATIVE FARM INCOMES AND INDUSTRIAL EARNINGS OVER THE PERIOD 1991-2001 (BASE YEAR 1991= 100)<sup>20</sup>.

Year	Agricultural income	Industrial earnings
1991	100.0	100.0
1992	115.3	103.7
1993	123.1	109.7
1994	131.7	112.7
1995	137.4	115.1
1996	149.7	120.7
1997	140.9	124.4
1998	143.2	129.4
1999	130.3	136.8
2000	144.5	146.2
2001	153.5	157.2

Meanwhile the availability of employment in the economy expanded rapidly; between 1994 and 2001 total non-agricultural employment rose by 52% or 500,000 jobs (Table 4.2). Apart from the census of population, there are no readily available statistics on employment in rural areas and the 2002 census of population is not yet available. However, unemployment rates are available for the eight planning regions and the less urbanised of these can be taken as indicators of the employment situation in rural areas. Table 4.3 illustrates that the unemployment rate fell in the BMW Region from 17.9% in 1991 to 4.5% in 2001. Unemployment in urbanised regions, such as Dublin and the Mid-east, is slightly lower, but the difference of less than one percentage point is not significant.

<sup>20</sup> Average farm income extrapolated to 2001 on the basis of the rate of decline in number of farms 1991-99 (source of data is CSO).

TABLE 4.2 NUMBERS OF PEOPLE IN AGRICULTURAL AND NON-AGRICULTURAL EMPLOYMENT<sup>21</sup>.

Year	Non-agriculture	Agriculture	Agricultural employment % of total
1994	1,073,700	146,900	12.0
1995	1,132,600	149,100	11.6
1996	1,187,100	141,400	10.6
1997	1,238,400	141,500	10.3
1998	1,359,500	135,000	9.0
1999	1,455,200	135,900	8.5
2000	1,519,700	130,900	7.9
2001	1,596,400	120,100	7.0

TABLE 4.3: UNEMPLOYMENT RATE BY YEAR AND REGION<sup>22</sup>.

Region	Year				
	1991	1995	1999	2000	2001
Border	21.6	13.2	8.7	6.6	5.5
Midlands	20.6	15.0	6.5	5.5	3.8
West	18.2	11.2	5.2	5.0	4.0
<b>BMW</b>	<b>17.9</b>	<b>11.4</b>	<b>6.9</b>	<b>5.7</b>	<b>4.5</b>
Dublin	16.2	10.5	4.7	3.4	2.9
Mid East	16.4	10.2	4.2	3.7	2.9
Mid West	19.2	14.9	5.0	4.0	3.5
South East	16.3	12.6	8.4	4.9	4.7
South West	14.3	10.0	5.6	3.8	3.8
<b>SE</b>	<b>18.7</b>	<b>13.5</b>	<b>5.4</b>	<b>3.8</b>	<b>3.4</b>
<b>Total</b>	<b>18.5</b>	<b>13.0</b>	<b>5.7</b>	<b>4.3</b>	<b>3.7</b>

Employment status is based on where people live rather than where they work. The implied increase in employment by rural dwellers does not mean an increase in rural employment. Commins and McDonagh (2002) point out about 80% of the population lives within commuting distance of one or more of the 13 larger urban areas in the state. Commins and McDonagh also note that between 1991 and 1996 the 155 Rural Districts (RDs) in the state lost 22,400 jobs in the primary sector (i.e. agriculture, forestry and fishing) but gained over 100,000 in the other sectors. In only a few RDs was less employment generated than lost. The results of the 2002 census will indicate whether this continued trend in 1996-2002 but there is little evidence to suggest that it has not.

#### Off-farm employment and income

Relatively slow growth in farm incomes leading to a decline in the number of farmers and consolidation of farms has been accompanied by an increase in the number and proportion of farmers engaged in off-farm employment on a part-time basis, and in the proportion of family farm income earned off-farm. In the 20-year period from 1980 to 1999/2000 farm income has declined from 58% to 41% of total income of farm households, while income from non-farm employment has risen from 21% to 43% (Table 4.4). Off-farm income now exceeds income from farming in farm households (Figure 4.2).

<sup>21</sup> Quarterly National Household and Labour Force survey.

<sup>22</sup> Quarterly National Household and Labour Force survey.

TABLE 4.4: TREND IN FARM FAMILY WEEKLY INCOME FROM FARM AND OFF-FARM SOURCES OVER THE PERIOD 1980-2000<sup>23</sup>.

	Year			
	1980	1987	1994/95	1999/00
	IR£			
<i>Farm income</i>	62.42	131.41	191.12	203.08
<i>Off-farm employment</i>	22.55	57.56	110.49	216.59
<i>Other income</i>	5.54	11.02	14.02	27.33
<i>State transfers</i>	16.29	42.65	41.72	53.14
<b>Gross income</b>	<b>106.80</b>	<b>242.64</b>	<b>357.35</b>	<b>500.14</b>
	%			
<i>Farm income</i>	58.45	54.16	53.48	40.60
<i>Non-farm employment</i>	21.11	23.72	30.92	43.31
<i>Other income</i>	5.19	4.54	3.92	5.46
<i>State transfers</i>	15.25	17.58	11.67	10.63
<b>Gross income</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

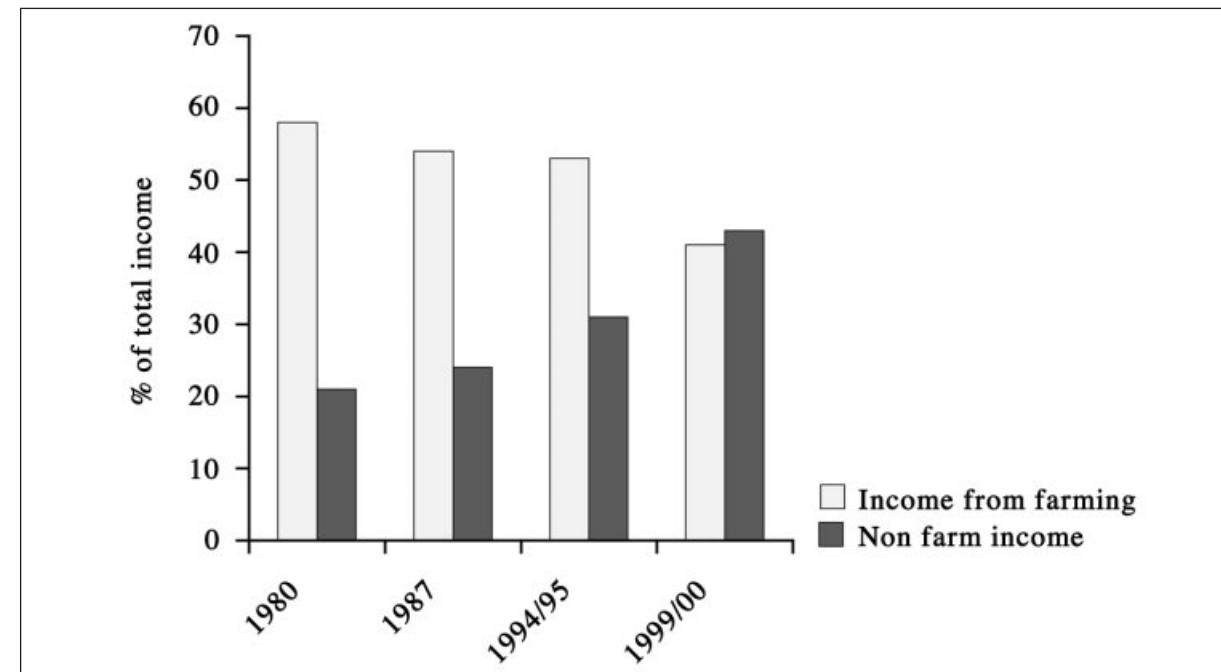


FIGURE 4.2: FARM HOUSEHOLD INCOME SOURCES.

Leavy and McCarthy (2002) translate these financial figures into numbers of farm households employed off-farm. In terms of either the farmers or their spouses in off-farm employment the number rose from 36% in 1995 to 45% in 2000. To some extent this exaggerates the trend to off-farm employment because in many cases (28% of the total) farmers were working off-farm in other agricultural activities (i.e. agricultural contracting). However, it is clear that there was a significant increase in dependence on non-agricultural income among farming families.

As might be expected the Teagasc National Farm Survey (NFS) data show that farmers with part-time employment had smaller farms than those engaged full-time in agriculture. Also they were more likely to be engaged in low intensive livestock enterprises and least likely to be involved in intensive dairy farms.

### Farm structure

In the eight-year period 1991-1999 there was a decline in the number of family farms from 170,000 to 143,700, a rate of decline of 2% per annum. The sharpest decline was in the 20 ha size category, which fell from 91,600 in 1991 to 67,300 in 1999 – a fall of almost 25% (Table 4.5). The consequence of these trends was an increase in the average farm size from 26 ha to 29 ha. The consolidation of farming is also reflected in the Teagasc NFS, which provides information on changes in the size of different types of farms. As reported by Leavy and McCarthy (2002) these show that the most significant increases took place in the average size of cattle rearing farms (plus 41% 1993-2000) compared to an increase of 32% in the average size of the NFS sample as a whole<sup>24</sup>.

TABLE 4.5: SIZE STRUCTURE OF IRISH FARMS OVER THE PERIOD 1991-1999<sup>25</sup>.

Size ha	Year					
	1991		1995		1999	
	000	%	000	%	000	%
<20	91.6	53.7	75.9	49.5	67.3	46.7
20-50	59.4	34.8	57.2	37.3	56.4	39.2
50-100	15.7	9.2	16.1	10.5	16.3	11.3
>100	3.9	2.3	4.1	2.7	4.0	2.8
<b>Total</b>	<b>170.6</b>	<b>100.0</b>	<b>153.3</b>	<b>100.0</b>	<b>144.0</b>	<b>100.0</b>

The decline in the number of farms was accompanied by an equal decline (14%) in the numbers employed. When expressed in terms of Annual Work Units (1,800 hours per annum) the decline was sharper (22%). Among the different contributors to farm employment, that of holders (usually the owner of the farm) declined least (14%) while that of spouses most (42%) (Table 4.6).

TABLE 4.6: FARM LABOUR INPUT OVER THE PERIOD 1992-1999<sup>26</sup>.

	Year					
	1991		1995		1999	
	000	%	000	%	000	%
<i>Holder</i>	161.1	49.8	153.0	52.1	143.7	53.2
<i>Spouse</i>	73.9	22.8	59.0	20.1	49.9	18.5
<i>Other family</i>	73.5	22.7	66.0	22.5	63.4	23.5
<i>Non family</i>	15.8	4.9	15.5	5.3	12.9	4.8
<b>Total</b>	<b>324.3</b>	<b>100.0</b>	<b>293.5</b>	<b>100.0</b>	<b>269.9</b>	<b>100.0</b>

### Demographic structure

Changes in the structure of farms were accompanied by a change in the demographic structure of farmers. Over the decade, the proportion of those over the age of 65 declined significantly while the proportion of those in the middle years (45-54) increased correspondingly (Table 4.7). There was also a decline in the proportion of farmers living alone and a slight increase in the numbers who were married with children. These are relatively positive developments for agriculture, suggesting, other things being equal, an improvement in the viability of farming.

Notwithstanding the improvement in demographic profile of farm households there remains a cohort of farmers with poor demographic profiles. A recent survey of 147 single men in North Leitrim provides insight into the socio economic characteristics of this group (North Leitrim Men's Group 2001).

Ninety five percent of those surveyed were single and the remainder were widowed or separated. The majority (58%) only attended primary school. Very few belonged to any organisation or group and the vast majority (82%) did not have any form of hobby or pastime.

Over two thirds of the respondents were engaged in farming. Almost two thirds own land, but almost one half own less than 20 ha. For most respondents social welfare payments and agricultural subsidies form the

<sup>23</sup> Household Budget Surveys 1980 to 1999/2000.

<sup>24</sup> Differences between the size of farm and rate of consolidation as reported by the CSO and the NFS are attributable to differences in samples of the respective studies.

<sup>25</sup> Agricultural Labour Input, CSO.

<sup>26</sup> Agricultural Labour Input, CSO.

bulk of their incomes (71%). Forty nine percent had annual incomes of less than €6,350 in 1999 and a further 31% had incomes between €6,350 and €11,430.

Twenty six percent of the respondents visited relatives less than monthly while 9% rarely if ever visit neighbours. Other than visits to the mart or to church, many depend on the local pub for social activity.

The study concludes: "These single rural men have poor social networks and their access to information is limited. They are likely to have an apathetic and suspicious attitude regarding officialdom and to be reluctant to seek out information. They lack work-based interaction opportunities, and often perceive existing organised communal and social events as inappropriate for them. The pub remains for many the only social focus".

TABLE 4.7: AGE STRUCTURE OF IRISH FARMERS<sup>27</sup>.

Age	1991		Year 1995		1999	
	000	%	000	%	000	%
< 35	22.4	13.2	20.9	13.7	15.8	11.0
35-64	108.8	64.0	99.6	65.1	95.0	66.1
>65	38.7	22.8	32.5	21.2	33.0	23.0
Total	169.9	100.0	153.0	100.0	143.7	100.0

The foregoing discussion of the economic and social dynamics of the rural economy in the 1990s can be summarised as follows. Market conditions were relatively poor and the value of output and farm incomes were increasingly supported by various types of direct aid. As a consequence the volume and value of output stagnated, though aggregate farm incomes rose. Employment in industry and services in rural areas, as elsewhere in the economy, expanded rapidly, generating attractive opportunities for off-farm employment. The number of farmers declined especially among the smallest farm size categories and hence the average size of farm increased. Those that remained in agriculture increasingly involved themselves in off-farm employment and the proceeds of this rose to exceed farm income among farm households.

In principle these developments should have proved complementary to the specific schemes to promote afforestation. In an environment where returns to agricultural production are declining as a result of market conditions and the withdrawal of aids for production, the relative attractiveness of forestry should increase. Furthermore, forestry should emerge as a strong contender for land use in a context where increasing numbers of farmers are seeking off-farm employment since the labour input in forestry is relatively low once the crop has been successfully established, compared with extensive forms of agriculture.

<sup>24</sup> Agricultural Labour Input, CSO

## 5. ENVIRONMENTAL CONSTRAINTS

### Introduction

The need to protect and enhance the general environment in the context of various forms of land use such as agriculture and forestry has resulted in an extensive framework of environmental regulations.

Special Areas of Conservation (SACs) have been defined under the EU Habitats Directive. Under the EU Birds Directive, Special Protected Areas (SPAs) have similarly been defined. Currently no grant aid is available for forestry in these areas except, under the Native Woodlands Scheme. There are also environmental requirements now in force outside of these areas. This means, in addition to economic and silvicultural criteria, that a proposed plantation must now also meet an array of environmental criteria before approval for grant aid is given. These additional requirements can add to the establishment cost of the plantation and/or increase the time period between approval being sought and eventually granted.

In addition to the environmental requirements that are directly related to forest plantations, the environmental schemes and regulations in agriculture and other forms of land use will also impact on-farm forest planting. In some cases the impact is negative (e.g. designation of sensitive areas, livestock extensification scheme, REPS, while in other cases it may be positive (carbon sequestration, the Nitrates Directive).

This chapter examines the likely impact of the increasing environmental regulations and the designation of sensitive areas on the potential for further increases in the level of farm forestry.

### Requirements for Sustainable Forest Management (SFM)

Following from the Third Ministerial Conference on the Protection of Forests in Europe (Lisbon 1998), Ireland is committed to the sustainable management of all forests within the state. The Irish National Forest Standard is a framework for the implementation of SFM in Ireland. It was launched in 2000 by the Forest Service. The standard encompasses the Code of Best Forest Practice and a suite of environmental guidelines relating to water quality, archaeology, landscape, biodiversity, harvesting and aerial fertilisation.

Under the Forestry Consent System introduced in December 2001 an application for afforestation may be required to undergo a public consultation process and be referred to a prescribed body for further consultation in certain circumstances. Specifically:

- the EPA and the Fisheries Board are consulted where the proposed afforestation might cause acidification of waters;
- Dúchas, the Heritage Service is consulted when it appears that the proposed planting might have significant effects in relation to nature conservation;
- Dúchas and An Taisce are to be consulted where it appears that the proposal might have significant effect on an archaeological site or feature and
- The Local Authority, Bord Fáilte and An Taisce are to be consulted where afforestation might be situated in an area of special amenity.

Apart from these specific situations, the Minister may undertake any consultation in relation to any application, which is considered appropriate.

With the exception of Dúchas, prescribed bodies are allowed four weeks to comment on applications. Dúchas is allowed two months to comment on an application. If a prescribed body requires more time to consider an application referred to it, it may request the Forest Service to extend the consultation period. The Forest Service will usually allow any such request if the time extension required is reasonable.

In the case where a prescribed body has not responded within the time period allowed, it is assumed that the referred application is not a cause of concern for the body. In such instances, the Forest Service will, by default, recommend the processing of the application.

The Forest Service implements the environmental aspects of SFM by ensuring adherence to the guidelines as a condition of grant aid and felling licence approval. Table 5.1 lists the environmental considerations and the relevant bodies that have to be consulted for each particular sensitivity or designation.



TABLE 5.1: ENVIRONMENTAL CONSIDERATIONS FOR APPROVAL OF AFFORESTATION PROPOSALS.

	<i>Consideration</i>	<i>Prescribed body<sup>28</sup></i>
<b>1</b>	<b>Water Quality</b>	
1.1	Is the area designated potentially acid sensitive by the Department of Communications, Marine and Natural Resources?	EPA
1.2	Is the area > 5.0 ha and sensitive for fisheries?	Regional Fisheries Board
1.3	Is the area non-sensitive for fisheries and > 40 ha?	Regional Fisheries Board
1.4	Is the area >10.0 ha and within a catchment area of a Local Authority designated water scheme?	Local Authority
<b>2</b>	<b>Designated Habitats</b>	
2.1	Is the area within a pNHA, SAC, SPA or National Park?	Dúchas; public consultation
2.2	Is the area within a distance of 3 km upstream of a pNHA, SAC, SPA or National Park?	Dúchas
2.3	Does the area contain a current REPS plan habitat?	-
<b>3</b>	<b>Archaeology</b>	
3.1	Does the area contain an archaeological site of feature with intensive public usage?	Public consultation
3.2	Does the area contain or adjoin a listed archaeological site or monument?	Dúchas
<b>4</b>	<b>Landscape</b>	
4.1	Is the area within a prime scenic area in the County Development Plan or within an area listed in the Inventory of outstanding Landscapes?	Local Authority; Dúchas
4.2	Are there any other High Amenity Landscape considerations?	Dúchas
<b>5</b>	<b>Size for notification to Local Authority</b>	
5.1	Is the area greater than 25 ha?	Local Authority

The referral of an application for afforestation by the Forest Service to a prescribed body or authority may significantly delay the approval process. Straightforward applications can take 4-6 weeks, while those that have to be referred to third parties for environmental reasons, can occasionally take up to 6 months to get approved. If the delay extends beyond the planting season, then planting will be delayed until the following season.

### Water quality

Forestry operations beside or near aquatic zones require careful planning and management to avoid negative impacts on water quality. An aquatic zone is defined as a permanent or seasonal river, stream or lake shown on an Ordnance Survey 6 inch map.

Of particular relevance to farmers is afforestation planned in areas sensitive to acidification, and the requirement for buffer zones (i.e. areas where no planting is permitted).

An area is designated as acid sensitive by the Forest Service if the geology is base-poor (i.e. easily acidified); if water samples have low acid neutralising capacity, and if the aquatic zone is part of a recognised salmonid fishery and is a spawning, nursery or fishery area.

Studies carried out in the 1980s indicate that approximately 775,000 ha of land can be classed as "very sensitive" to acidification (Bowman 1991). This land is concentrated in counties Kerry, Clare, Galway, Donegal and Wicklow, with a small tract in Laois. However, there is still a scientific debate over the relevance of these studies to current day forest activities. Alternative testing methods using biological rather

<sup>28</sup>To which the application must be referred in the case of a yes.

than chemical data indicate that the prevalence of acid sensitive areas may be significantly less than this. COFORD is currently funding research aimed at establishing more appropriate indicators of sensitivity to acidification.

Currently water samples collected on four occasions from February to May are required with applications to afforest land classified as "very acid sensitive". If the sample results show a low level (less than 8 milligrams/l) of calcium carbonate then no planting will be allowed. If the sample results are in the range of 8-15 milligrams/l then consultation with the EPA will be required to determine the overall level of planting and the possible species mix required.

This requirement means that, where planting is planned, it may take a year from the start of water sampling to the approval of grant aid.

### Biodiversity

Biodiversity describes the variability among living organisms and the ecosystems of which they are a part. Ireland's forests represent an important opportunity to conserve and enhance biodiversity at both national and local level.

The biggest threat to biodiversity is the removal or destruction of habitats. A habitat can be defined as a place where an organism or a population of organisms lives. In addition to the forest itself, habitats associated with forest cover in Ireland include the following: hedgerows; areas of scrub; pockets of native broadleaf cover and individual old trees; aquatic zones (rivers, streams and lakes shown on an Ordnance Survey 6 inch map) and wetlands such as ponds, old drainage ditches, reedbeds, swamps, marshes, turloughs and peaty hollows; woodland glades; unimproved grassland and wildflower meadows; caves and rocky outcrops; and features such as disused quarries, sand pits and stone walls.

Under the Forest Service Biodiversity Guidelines plantations that exceed 10 ha must have a minimum of 15% of the total forest area set aside as Areas for Biodiversity Enhancement (ABE). These areas should comprise of open spaces (5-10% minimum) and retained habitats (5-10%).

This requirement results, on some sites, in areas of land having to remain unplanted. On a typical 12 ha site, 1.8 ha may have to be set-aside for ABE. If there are no recognisable habitats already in existence, then the full 15% has to comprise of unplanted land. The annual premium is paid on this unplanted land, but after 20 years the farmer is left with ground that is no longer capable of generating any income. With forestry land costing around 6,350/ha at the time of writing, this is a significant added cost to the landowner.

The designation of biodiversity requirements on a site-by-site basis contributes to this problem. In the case of better land, many sites will have few existing habitats and so a significant portion of land will have to be left unplanted.

### Landscape

Applications for afforestation in areas of outstanding landscape or high amenity value must be referred to the Local Authority and/or Dúchas for evaluation and consultation.

As yet there is no inventory of the total lands that make up these scenic landscapes but the Forest Service is presently working on a system to address this issue.

### Archaeology

The National Monuments Acts and Amendments 1930-1994 legally protect archaeological sites in Ireland from unauthorised interference or damage. Any landowner who plans to undertake work "...at or in relation to..." an archaeological site must give two months notice to the National Monuments and Historic Properties Service of Dúchas.

Applications relating to lands that have a significant archaeological feature may also require a process of public consultation.

The Record of Monuments and Places (RMP) was established by the 1994 Amendment. It contains an index of all archaeological features and it is continuously updated.

Normally an exclusion zone of at least 15 m from the edge of the archaeological site must be left unplanted, together with an access path to the site. A larger zone may be required if an archaeological site is deemed to be particularly sensitive.

The land left unplanted due to the presence of archaeological sites on any individual plantation is likely to be relatively small. In any event, many landowners have a positive attitude towards features of archaeological importance on their lands and welcome their protection.

### Designation of sensitive areas

The designation of Special Areas of Conservation (SACs), Special Protected Areas (SPAs), proposed National Heritage Areas (pNHAs) and the National Parks place environmental constraints on afforestation.

Currently SACs and SPAs are automatically excluded from grant aid for afforestation except under the Native Woodlands Scheme. Grants for afforestation in pNHAs and National Parks will not be approved if the Forest Service accepts an environmental objection raised by the relevant authority.

Planting that is not covered by the Native Woodlands Scheme may still take place in these areas but approval will not be forthcoming in the context of the following environmental factors:

- where planting in an SAC, SPA or pNHA is strongly discouraged by the relevant authority;
- where the extent of an SAC, SPA or pNHA inhibits forest management;
- where clusters of archaeological sites predominate;
- where Local Authorities impose severe restrictions for landscape or water quality purposes;
- where riparian areas are to be kept intact for fishery purposes.
- close to dwellings.

The land area in SACs, SPAs, pNHAs and National Parks is 11 - 14% of the total land area of the country. These include maritime areas, lakes and lakeshore regions, which make it difficult to provide a more accurate assessment of the land area. Given a total land area of Ireland of almost 7 million ha, this represents 700,000 - 950,000 ha.

It can be expected that there will be minimal afforestation in these designated areas due to:

- (i) the unavailability of grant aid in most circumstances, and
- (ii) many of these areas are located on peatlands or other poor soils and will consequently fail to reach the threshold projected yield class required for grant-aid by the Forest Service (see below).

### Physical constraints on afforestation

There are limitations on the suitability of certain sites for forestry for economic, and in some cases, environmental reasons (for example the protection of peatlands). Table 5.2 lists some of the main sites which have physical constraints that limit economic and/or environmentally acceptable forestry.

TABLE 5.2: SITES WITH PHYSICAL LIMITATIONS FOR ECONOMIC FORESTRY<sup>29</sup>.

<i>Site type</i>	<i>Definition</i>
<i>High elevation</i>	Over 300 m in the west; over 400 m in the east
<i>Infertile blanket bog</i>	Presence of heather ( <i>Eriophorum</i> , <i>Scirpus</i> and <i>Sphagnum</i> spp.)
<i>Sites with substantial rock outcrop</i>	25% or more rock cover, depending on location
<i>Severely exposed</i>	Western seaboard and some sea-facing slopes
<i>Shell marl<sup>30</sup></i>	Within 70 cm of the soil surface (sites with a thin permeable marl layer and low water table may be plantable)

To qualify for the afforestation grant, a site must be capable of supporting yield class 14 Sitka spruce or yield class 4 oak/beechn, or their equivalent. This generally excludes peatlands and blanket bog from the afforestation programme.

<sup>29</sup> Forest Service (2000)

<sup>30</sup> A layer of calcium carbonate, comprised in the main of snail shells, that originates in shallow lakes on limestone and occurs beneath some raised bogs and reclaimed fen peats in the Midlands and parts of east Galway and Mayo. Its high pH generally precludes its use for conifers.

At the time of writing the Forest Service of the Department of the Marine and Natural Resources, in conjunction with Teagasc, is compiling a countrywide map and decision support tool to aid decision-making on species selection, forest location and overall suitability for economic forest growth. This work will be finished by December 2002.

Given that there are extensive areas of peatland and other lands of yield class 14 Sitka spruce or less, the land area excluded from possible planting by farmers is significant.

### Impact of the Nitrates Directive

Increasing environmental regulations in agriculture may prompt increased interest in forestry from more intensive farmers.

Ireland is expected to implement the Nitrates Directive (91/676/EEC) in 2002. It is expected that the entire country will be designated as a Nitrate Vulnerable Zone. Under the Directive, the introduction of an Action Plan in Nitrate Vulnerable Zones to reduce the loss of nitrates from agricultural activities is required. The details contained in the Action Plans are not yet known, but they will contain measures:

- (i) to ensure animal wastes and chemical fertilisers are stored and applied in an appropriate manner and quantity;
- (ii) to place a limit on stock numbers so that nitrogen from livestock manures does not exceed 170 kg/ha/yr and
- (iii) any other measure deemed necessary to reduce nitrate loss from the soil.

Intensive farmers are likely to face some restrictions in their commercial activities when the Action Plans are implemented. Action Plans, which impose extra compliance costs on farmers, will exert downward pressure on the profitability of farming enterprises. This is likely to prompt farmers to take a fresh look at alternative land uses such as forestry. Reduced profitability from traditional farming enterprises will increase the relative attractiveness of the financial benefits accruing to the farmer from afforestation. This will increase interest among farmers to consider planting at least some of the less agriculturally productive land on their farms. As details of the Action Plans are not yet known it is difficult to estimate to what extent this may occur.

### Livestock Extensification Scheme

The potential for farm forestry planting is also impacted by agricultural schemes and packages that have an environmental component. The most important of these schemes is the Livestock Extensification Scheme. High animal stocking rates are a major source of potential pollution and environmental damage. The extensification scheme aims to compensate farmers who have a relatively low stocking rate.

A payment of €80 per livestock unit (l.u.) is available to farmers whose stocking rate is less than 1.4 l.u./ha. A payment of €40 per l.u. is available where the stocking rate is between 1.4 and 1.8 l.u./ha (inclusive).

This encourages non-intensive farmers to retain as much grassland and forage area as possible so that they can achieve these low stocking rates, and therefore the payments, without the need to reduce their herd/flock size. Thus, areas of a farm which may be relatively unproductive from an agricultural point of view and which are still suitable for forestry are being retained to provide grazing areas for livestock.

There are a total of 57,000 farmers on 2 million ha of land who have stocking rates of less than 1.8 l.u./ha. A rough analysis of this group estimates that about 4,000 farmers (who are likely to be farming mountain or hill land) are at the lowest stocking levels. About 37,000 farmers are at intermediate stocking levels; it is estimated that this group has about 380,000 ha of land surplus to their stocking requirements. These farmers could plant this land and they would still qualify for the high rate of extensification payment. At the upper end there are approximately 16,000 farmers who are less likely to consider forestry as they would be concerned with moving too close to the stocking rate limit.

The Extensification Scheme provides a significant income alternative to forestry for farmers. As well as providing a deterrent to the 16,000 farmers who are close to their stocking rate limits, it also provides a deterrent on lands in addition to the 380,000 ha referred to.

## Rural Environment Protection Scheme (REPS)

By the end of 1999, over 43,000 farmers were participants in REPS. Of these nearly 33,000 were in the basic scheme and were farming lands outside of pNHAs, SACs and SPAs. The total land area associated with this group of participants amounted to over 1 million ha. Assuming that many of the 10,000 farmers in the scheme, who have land in a pNHA, SAC or SPA, also have land outside of these designated areas, then the total land in REPS outside of a designated sensitive area is significantly more than 1 million ha.

The number of farmers participating in REPS II has declined significantly from 43,000 to 35,000. The Department of Agriculture and Food is presently surveying farmers who did not renew their contract in REPS II to ascertain the reasons why. The fact that the premium has not changed in seven years is one of the reasons suggested by those working on the scheme.

Participation in REPS began in earnest in 1995, and the scheme went from strength to strength. At the same time, in 1995, afforestation peaked at 23,710 ha. Since then it has fallen continuously. It is overly simplistic to suggest that REPS is the main cause for the reduced planting levels, but there is little doubt that it has had a serious negative impact. Many farmers view forestry as a major long-term change of land use, whereas REPS provides financial support over a relatively short time frame without the need for a significant change in land use.

The current REPS scheme (REPS II) provides for greater integration of forestry into REPS plans. REPS planners are obliged to identify at least 2 ha of land that would be suitable for afforestation. However, there is no obligation on the landowner to plant this land. Any land subject to a REPS plan that is planted with grant-aid will receive the normal forestry grants and premiums, but will no longer receive the REPS payment.

REPS payments are limited to 40 ha per applicant. Farmers with more land than this may find it attractive to plant the excess with forestry and so maximise their incomes from the subsidies available.

The targets for REPS II anticipate the participation of 70,000 farmers by 2006. Given that the size of the average REPS participant is around 30 ha, this represents a land take in excess of 2 million ha. It is difficult to estimate how many of these farmers will put some of their land into forestry. One indication may be found in the National Climate Change Strategy (Department of the Environment and Local Government 2000), which estimates that REPS farmers will afforest around 70,000 ha by the year 2010.

## Environmental Impact Statement (EIS) Requirement

Under Statutory Instrument (SI) 538 of 2001, all proposed plantations greater than 50 ha require an EIS. Until recently the requirement was confined to areas 70 ha and greater. Afforestation proposals which are less than 50 ha but which adjoin other plantations such that the total area would exceed 50 ha are also required to have an EIS prepared.

The preparation of an EIS may cost in the region of 15,000 - 25,000. This is a significant cost item relative to the total investment, particularly for a 50 ha plantation. It is a strong disincentive for farmers who are considering afforesting 50 ha or more of their land. The number of farmers wishing to plant 50 ha or more is likely to be small, but the land area covered by this size of plantation can help significantly in reaching total annual planting targets. To date, approximately 15,000 ha of private forestry is in plantations of 50 ha or more (c.f. Table 2.5).

## Forest carbon storage

One of the most widely recognised environmental benefits of afforestation is that it results in a net uptake of carbon dioxide (CO<sub>2</sub>) from the atmosphere. Trees absorb (sequester) CO<sub>2</sub> during the normal growth and development process.

Global warming (the greenhouse effect) is attributed to the build up of certain atmospheric (greenhouse) gases in the atmosphere. Emissions of these gases continue apace as the global economy expands. Carbon dioxide emissions account for 50% of the warming effect, while methane, nitrous oxide, ozone and chlorofluorocarbons (CFCs) account for the remainder. Global warming is expected

to result in changes in both temperature and precipitation levels. These are expected to cause widespread damage both as a direct result of the temperature increases and indirectly through the redistribution of water supplies and the rise in sea levels resulting from the thermal expansion of seawater and the melting of glacial ice.

Afforestation will result in a net increase in terrestrial carbon storage. Emissions of CO<sub>2</sub> from wood burning are CO<sub>2</sub> neutral – no net increase in CO<sub>2</sub> levels once the forests are reforested after clearfelling. The CO<sub>2</sub> neutral effect is recognised in the Kyoto Protocol – emissions from wood combustion are not counted. Hence afforestation can contribute in two ways to emission reductions: as a carbon store and by potentially replacing fossil fuels.

The Kyoto Protocol of 1997 relates to the commitment to reduce greenhouse gas emissions under the United Nations Framework Convention on Climate Change. Under this protocol, participating countries (which include all EU member states) agreed to reduce greenhouse gas emissions relative to 1990.

The introduction of a system of tradable carbon emission permits is likely. The EU is planning to pilot such a scheme in 2005, although at present sinks are not part of this system. Sinks such as forestry can be used to achieve compliance with emission reduction targets. Trading in sink credits may occur, but no decision has been taken in any of the Member States of the EU. Neither have the mechanisms by which sink credits will be traded been worked out.

## Stakeholders' views on environmental and other constraints

Table 5.3 summarises stakeholders' views on environmental and other current issues relating to the rate of farm planting.

TABLE 5.3: SUMMARY OF MAIN POINTS RAISED IN CONSULTATION WITH STAKEHOLDERS IN FARMER FORESTRY.

<i>Main points raised</i>	<i>Sector/group</i>				
	<i>Forestry contractors</i>	<i>Teagasc</i>	<i>Forestry consultants</i>	<i>Agricultural media</i>	<i>Farming organisations</i>
<i>Other environment schemes (REPS, Extensification schemes) are too competitive</i>	X	X			X
<i>EIS requirement is prohibitive</i>			X		X
<i>Delays in processing applications due to environmental considerations</i>	X			X	X
<i>Fear increasing environmental regulations</i>				X	
<i>Silvicultural restrictions (e.g. land must be YC 14 or greater for Sitka spruce) too strict</i>	X	X	X		
<i>Biodiversity requirements are prohibitive</i>			X		
<i>Environmental restrictions (e.g. Nitrates Directive) in other enterprises will increase interest in farm forestry</i>					X

## Conclusions

Table 5.4 summarises the land excluded from afforestation schemes due to the range of environmental concerns discussed above.

TABLE 5.4: LAND INELIGIBLE FOR AFFORESTATION DUE TO ENVIRONMENTAL CONSTRAINTS.

<i>Requirement</i>	<i>Area affected ha</i>	<i>Comments</i>
<i>Acid sensitive areas</i>	<i>775,000</i>	<i>This area may change as the outcome of ongoing research becomes known.</i>
<i>Designation of Sensitive Areas (SACs, SPAs, pNHAs etc excluding acid sensitive areas)</i>	<i>700,000-950,000</i>	<i>Only limited planting is anticipated due to grant aid being restricted to the Native Woodlands Scheme.</i>
<i>Impact of Nitrates Directive</i>	<i>unknown</i>	<i>The impact is unknown until the details of the Action Plan(s) become public.</i>
<i>Livestock Extensification Schemes</i>	<i>380,000</i>	<i>This scheme provides significant land use competition to farm forestry</i>
<i>EIS requirement</i>	<i>unknown</i>	<i>It is not possible to quantify this figure because the extensions of existing plantations have to be taken into consideration.</i>
<i>Total</i>	<i>1,855,000+</i>	

A number of conclusions may be made on the likely impact of the aforementioned environmental constraints on the future afforestation programme:

1. It appears that in cases of excessive delay in approval caused by the need to refer to a third body for environmental reasons the result may be a farmer missing a planting season or even becoming disinterested in forestry as an option. Ongoing research by Frawley (2002) with a sample of recent applicants who got approval to plant and yet who did not do so may provide valuable insight to the approval process. A consistent adherence to the four week period as granted under the Forestry Consent System for prescribed bodies to comment on afforestation applications could be expected to minimise the loss of interest by applicants caused by delays in granting approval. In more complex cases a second period of four weeks could be granted, at the end of which the applicant may expect the right to be informed if the application is successful or not.
2. The requirement to have 15% set aside for Areas of Biodiversity Enhancement will reduce return from the land area allocated to forestry where plantable land must be set aside due to the lack of any other natural habitat present on the site.
3. It can be expected that there will be very few applications for farm forestry within the designated Sensitive Areas (SACs, SPAs, pNHAs and the National Parks) due to the fact that planting grants and premiums within these areas are limited to the Native Woodlands Scheme.
4. The livestock extensification schemes are significant alternatives to farm forestry for farm income and provide farmers with an income associated with a land use that they are used to. A significant number of farmers will continue to avail of these schemes for as long as they are in operation.

5. The greater integration of farm forestry with REPS in the REPS II 2000 scheme should encourage more farmer participation. However, as pressure on farm income increases, the biggest opportunity to increase farm forestry may be among the larger REPS farmers, who may be persuaded to plant lands they own in excess of 40 ha with farm forestry and so increase their subsidy income.
6. The EIS requirement on plantations of 50 ha or more creates a large financial burden on the landowner, and in many cases will only be justified if the plantation size is significantly larger than 50 ha. This requirement is likely to be a significant deterrent to owners of 50-100 ha tracts of lands who would otherwise consider farm forestry.

## **6. FORESTRY PROMOTION AND SALES**

The results of the survey show that many farmers are in a position to improve their incomes by planting marginal land, or land that is surplus to requirements for cattle rearing and qualification for extensification premiums. Furthermore, the survey shows that there are a percentage of farmers both with and without forest who are prepared to consider afforestation (or more afforestation); or who, at least, have not positively decided not to plant their land. In these circumstances, it seems that there may be a degree of ineffectiveness in the way in which forestry is promoted and sold to farmers. A thorough review of the promotional activities needs to be undertaken. Anticipating the discussion below, it can be said that promotion needs to be proactive and targeted at the identified market of those most likely to undertake afforestation. In this context, promotion means the whole range of activities from the most general, such as awareness campaigns, advertising, to the process of persuading the individual farmer to afforest his land.

Both the Forest Service and the private sector fund promotion of forestry to farmers. The Forest Service undertakes some activities directly, but an important part of Forest Service funding goes to Teagasc and certain forestry associations to provide promotional services on behalf of the Forest Service. In the private sector most promotion historically has been undertaken by the self-assessment companies who have accounted for the majority of afforestation activity on behalf of farmers. In addition to the self-assessment companies, there are a number of other small enterprises and individual consultants who, through their pre-sales activity contribute to the promotion of forestry.

### **Promotion by the Forest Service**

The Forest Service's budget for promotion is contained within the Forestry Development Sub-measure of the Regional Operational Programme 2000-2006. It varies annually; in 2000 €2 million was spent on promotion; this rose to about €3 million in 2001. For the period 2000-2006 €24 million is budgeted for promotion. The ongoing promotional activities funded by the Forest Service can be divided into four categories:

- Forestry development projects
- Advertising
- Teagasc
- Forestry associations.

A fifth category is a direct mail shot that is being tried on a once off basis.

### **Forestry development projects**

This includes a variety of projects aimed at raising public awareness and appreciation of forests and their educational, recreational, ecological and economical values. They include, or they have included such things as educational materials for schools, technical material for building professionals, support for groups to undertake development of amenities in local forests and support for National Tree Day.

### **Advertising**

This includes advertising in journals and the publication of brochures, pamphlets and informational material. A disadvantage is that material published by the Department of Agriculture, Food and Rural Development does not assign an equal treatment to forestry schemes as to schemes for other farm enterprises.

## Teagasc

Funding for Teagasc is to enable it to undertake a number of promotional activities and programmes and to employ forestry personnel. Included are:

1. Employment of nine foresters in Teagasc offices throughout the country.
2. A number of local demonstrations, open days and field days on all forestry topics including establishment and management forests. These open days are a very popular source of information for landowners with approximately 30% of farmers reporting attendance at one or more open days.
3. An introductory course in forestry aimed at farmers and others who may be considering planting land. This course is designed to give the individual sufficient basic information to allow them to supervise planting and maintenance work, knowledge about the different type of contracts and the economics of planting and how it fits in with existing enterprises. It is now proposed to measure how many attendees subsequently plant some of their land, to assess the success of this course.
4. Publication of a number of pamphlets addressing various issues relating to forestry management. The standard of presentation of these publications is generally high.
5. Organising evening information meetings/seminars on farm forestry. One third of farmers surveyed reported that they had attended an information meeting indicating that these evenings are an important source of information.

## Funding for associations

The main association funded by the Forest Service for promoting forestry direct to farmers is Western Forestry Co-operative Society Ltd. (WFCS). This was set up by co-ops to promote forestry to farmers in the northwest of the country and to help them to maintain their plantations and organise thinning and marketing of timber. WFCS has close links with farmers in the region, facilitated by the member co-operatives, and helps to convince farmers to afforest their land. Forest establishment is usually undertaken by one or other of the self-assessment companies.

## Direct mail

One innovation in promotion, which has been recently launched by the Forest Service, is a direct mail shot. This was directed to 30,000 farmers who:

- have applied for and received forestry grants;
- have received approval but have not proceeded with plantations;
- were involved in REPS but did not renew their participation when the first five year period (REPS I) expired.

The Minister of State at the Department of Communications, Marine and Natural Resources, Mr John Browne, TD, signed the letter. Respondents will be offered a visit from one of the Teagasc forestry advisers. It is too soon to judge how effective this innovation has been.

In addition to the nine foresters in the Teagasc offices covered by Forest Service funding, the Teagasc advisory service has a number of land use advisers, funded from the advisory service's normal resources who can advise farmers regarding the financial benefits of afforestation.

## Private sector promotion

The six self-assessment companies undertake the main promotion in the private sector. As self-assessment companies they can process applications on behalf of farmers for approval by the Forest Service without the need for preliminary inspection by the Forest Service. The companies have a network of foresters throughout the country. They are, in effect, a technical and marketing team that convince landowners to undertake farm forestry, assist them to complete the application for grant assistance, and secure and sometimes oversee, the works contract for their company.

In addition to these companies, forestry is promoted and establishment operations undertaken by small

companies and individuals. As they are not self-assessment entities, their plans have to be approved by the Forest Service. Usually they do not include maintenance of the young forest up to the receipt of the final instalment of the grant. The small companies are a significant and possibly growing element in the forest establishment market. In recent years the share of the self-assessment companies has fallen from 75-80% to possibly as low as 50%, according to industry and official sources.

Among the self-assessment companies there does not seem to be any formal market research or any systematic marketing campaign. Reliance is put on word of mouth or references from customers to friends and neighbours who are identified as possible 'customers'. Such methods are certainly cost effective methods of promotion but are likely to overlook large numbers of individuals who might respond to a direct approach.

## Evaluation

Assessment of the effectiveness of the public sector in the promotion of forestry to farmers centres on the performance of Teagasc. In the survey of farmers reported in Chapter 2 farmers were asked to identify sources of advice and information on farming. Sixty eight percent of farmers who have farm forestry enterprises identified Teagasc, while a further 11% identified Teagasc and others as an important source of advice. The corresponding figures for those without farm forestry were 57% and 17% respectively.

However when asked had Teagasc suggested forestry as a land-use option only 9% of those without forest and 15% of those with stated that Teagasc had suggested afforestation. In a separate question farmers were asked to identify those organisations or individuals that encouraged them to undertake farm forestry; 28% mentioned private companies while only 13% cited Teagasc, thus verifying the answers to the first question. It should be noted that Coillte was identified by only 4% of farmers as having encouraged them.

It would seem from these figures that for an organisation with a national spread and a high and respected profile amongst farmers, the full potential of Teagasc as a means of marketing forestry to the farming community is not being realised. Teagasc is also in possession of detailed information on its client base of 40,000 farmers, which should greatly facilitate identification of potential customers. It is not immediately evident why Teagasc does not have a higher profile in promoting forestry to farmers. One possible explanation is that Teagasc is paid for the services of its advisers and fees constitute an important measure of success of local offices and personnel as well as providing a useful source of funding for the organisation. However, since no fees are charged for forestry it may get less priority among the day-to-day activities of Teagasc advisors on the ground.

The Forest Service hopes to improve the motivational effect of its payments to Teagasc by making payments directly to the local Teagasc offices in return for specific services. This is very likely to be more effective than the present arrangement whereby the funds are paid centrally to Teagasc in Dublin. The Forest Service expects that this will result in the mainstreaming of forestry advice in Teagasc's services to farmers. However, for this approach to be successful it will be important that payment be related to the actual level of afforestation in the area concerned, i.e. performance based funding.

However, if Teagasc is to be funded by performance-based contracts in relation to afforestation levels, there is no inherent reason why private sector companies could not also be eligible. Any such contracts would have to be structured so as to exclude conferring unfair commercial advantages on the private contractors. For example, it would seem to be necessary that they would be independent of the self-assessment and other forestry plantation contractors.

The effectiveness of the other forms of promotion undertaken by the Forest Service is more difficult to evaluate than those provided by Teagasc and the Western Forestry Cooperative. These other forms of promotion are directed at changing public attitudes towards forestry. There is evidence from some surveys, including the one in this report, that attitudes to forestry among the farming public could be improved. Several of the schemes involved are extremely well conceived. However, there is a long payback to the annual rate of afforestation from projects such as those aimed at encouraging positive attitudes among children towards forests or at encouraging the use of native timber. Most countries, however, have ongoing campaigns on the benefits of forests and timber, so such activities funded by the Forest Service may well be justified on other grounds, not just in terms of increasing annual afforestation rates.

The self-assessment companies and the other forestry companies have a strong motivation to sell forestry to farmers. Hopefully, in a more fruitful environment for sales created by more targeted public promotion, their task would be easier. There is empirical evidence that the profitability of plantation contracts stimulates

the level of afforestation. According to econometric analysis (McCarthy 2001), the most effective means of increasing afforestation rates is to increase the planting grant. Presumably the effectiveness of increasing the grant, as opposed to increasing the premiums, is partly due to its effect in restoring or temporarily boosting profit margins of the plantation companies who typically get the grant. (The grant is cost related and reviewed in the light of trends in costs, but the reviews take place periodically thus causing fluctuations in profit margins). A higher rate of profit makes the business more attractive and stimulates (and finances) marketing activity by the companies.

Under EU rules it is not possible for the government to unilaterally increase the plantation grant. But it would be possible to use the resources of the Forest Service's promotional budget to fund some of the marketing activities of these companies. If, as in the case of the public sector contracts discussed above, these funds were awarded in the form of contracts for the cost of specific marketing activities linked to performance, then they would increase marketing activity of the companies and at the same time improve their profitability. This would achieve some of the effect of an increase in the plantation grant.

In summary therefore the consultants are inclined to the following recommendations in regard to promotion:

1. General and indirect forms of promotion undertaken or funded by the Forest Service are valuable. However, expenditure on promotion that is directly (e.g. marketing activity by forestry contractors) or nearly directly (e.g. Teagasc forestry advisers, WFCS) related to sales will be more productive in attaining the afforestation targets in the immediate future.
2. Many of the activities undertaken by Teagasc and the forestry associations could and should be funded on a performance basis, as is now being considered by the Forest Service.
3. Given that such expenditures will be in the form of performance based contracts there should be scope to admit properly qualified private sector companies to the tendering process.
4. Direct assistance to the marketing activities of the plantation companies could yield the most immediate results provided they were structured to encourage incremental activity and incremental sales.

## 7. CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

There are conflicts between agriculture and forestry at policy level, at organisation level in relation to the promotion of afforestation and at individual farm level.

The changing policy environment and the uncertainty over the Fischler proposals is likely to retard the rate of afforestation in the short-term but may accelerate afforestation if the end result is to negatively affect income to farming. There is an urgent need to minimise the uncertainty surrounding this changing policy and to instil as much confidence as possible in forestry to ensure that the coming planting season does not fall back dramatically on last year's level.

There remains considerable potential in relation to lands that can be afforested and still maximise payment through agricultural policy.

An estimated 37,000 farmers own 490,000 ha of land that is difficult to farm and if planted would not affect farmers' entitlements to the higher rate of extensification. This clearly indicates that the strategic targets outlined in *Growing for the Future* are attainable.

Farmers with forestry are favourably disposed to planting more land as almost two thirds stated they would consider planting more.

Farmers who are more likely to plant in future are:

- those already with plantations,
- part-time farmers,
- those with land difficult to farm and also stocking rates less than 1.4 l.u./ha,
- located in the South and East Region and
- who don't have an identifiable successor or where a labour issue arises because of ill health etc.

Many farmers (48%) without forest don't know if they would plant land in the future, whilst 16% stated they would. This represents further significant potential.

Farmers, particularly those without plantations are more favourably disposed to broadleaves.

The view is widely held by many farmers and especially by those without forest that forestry is relevant to land that is unsuited to farming. Many farmers have a preference to using their land for agricultural purposes.

Farmers currently with forest tend to:

- farm more than 50 ha,
- have land difficult to farm (85%),
- have more than one parcel of land (80%),
- have larger (>35 cows) dairy herds (77%),
- have more than 70 cattle (40%),
- have more than 100 ewes (50%),
- be aged 30 to 60 years,
- be married,
- farm full-time,
- generate more than 60% of their household income from farming and
- 34% participate in REPS, and
- 50% qualify for high rate extensification.

Most farmers are satisfied with the current level of afforestation. Those who believe there is too little forestry are favourably disposed to there being more forestry but not immediately next to where they live;

Farmers without forest see it as:

- relevant to land unsuited to farming (conversely forestry is not an appropriate land use for good farmland),
- suited to farmers exiting agriculture and
- too long-term.

Teagasc dominates the provision of farm advice and therefore is positioned as a key influencer on farmers' decisions to afforest. Teagasc has not been as proactive as its potential allows in promoting afforestation.

The factors that influenced farmers with forest to plant were:

1. unsuitability of land for farming and
2. attractiveness of premiums and tax-free status.

Negative changes in the agricultural situation and outlook will make farmers more favourably disposed to forestry.

The increase in part-time farming will positively influence the rate of afforestation.

Indexation of forestry premiums and grant rates would positively influence the rate of afforestation.

Availability of land at suitable prices and particularly for those already with forest will accelerate the rate of afforestation.

Half of the all farmers are affected by the high rate of extensification premiums. Therefore good quality, independent advice to the farmer is a critical success factor.

Over one third of farmers participate in the REPS scheme and the forestry premiums for these farmers are reduced by the REPS payments. REPS participants with larger farms present a key pool of potential future afforestation.

## Recommendations

1. Maximum influence be brought to bear on future changes in agricultural policy such that it will promote the use of land that is unsuited to farming for use in forestry.
2. Maximum influence be brought to bear on the stability surrounding the policy environment in forestry and its position in relation to agriculture and particularly in the short-term during the debate on changing policy.
3. Promotional efforts be targeted at
  - those already with plantations,
  - part-time farmers,
  - those with land difficult to farm (37,000 with 490,000 ha) and also stocking rates less than 1.4 l.u./ha,
  - SE Region and
  - farmers who don't have an identifiable successor and are or likely to encounter labour issues arising from ill health etc.
4. Teagasc general advisors work with the forestry specialists to identify the target groups and elaborate the strategic option to their clients; this becomes a strategic priority of Teagasc middle and senior management who in turn align their systems, resources and procedures accordingly.
5. Promotional campaigns illustrate and recommend to individual farmers the strategic advantage of entering forestry while at the same time maximising payments from agricultural sources. Examples of farmers who are in receipt of high-level extensification as well as forestry premiums to be used in promotional activities;

6. The state investment in the provision of forestry technical advice to be linked to performance in relation to achieving the national afforestation target;
7. All promotional, educational and training funding available to the Forest Service should be allocated through public tendering procedures under a well-defined programme.
8. All documentation including the Department of Agriculture and Food publication Schemes and Services 2002, explanatory materials and events in relation to agricultural premiums and schemes include an elaboration on the farm forestry scheme and premiums.
9. Forestry premiums be index linked and the level to be competitive with competing land uses and inclusive of an element that reflects the long-term nature of the decision.



## REFERENCES

- Bowman, J. 1991. *Acid sensitive surface waters in Ireland*. The impact of major new sulphur emissions on sensitive waters in an unacidified region. Environmental Research Unit, An Foras Forbatha, Dun Laoghaire, Co Dublin.
- Clinch, J.P. 1999. *Economics of Irish Forestry*. COFORD.
- Commins, P., and McDonagh, P. 2002. *Enterprise in Rural Areas: Trends and Issues. Signposts to Rural Change*, Rural Development Conference, 2002. Teagasc.
- Department of Agriculture, Food and Forestry. 1996. *Growing for the Future. A Strategic Plan for the Development of the Forestry Sector in Ireland*. The Stationery Office, Dublin.
- Department of the Environment and Local Government. 2000. *National Climate Change Strategy Ireland*. The Stationery Office, Dublin.
- Departmental Committee on Irish Forestry. 1908. *Minutes of Evidence, Appendices and Index*. H.M.S.O., Dublin.
- Department of Agriculture and Food. 1999. *Evaluation of the Rural Environment Protection Scheme*, Department of Agriculture and Food, July 1999.
- Forest Service. 2001. *Code of Best Forest Practice – Ireland*. Forest Service, Department of the Marine and Natural Resources.
- Forest Service. 2001. *Afforestation Grant and Premium Schemes*. Forest Service, Department of the Marine and Natural Resources.
- Forest Service. 2001. *Forest Biodiversity Guidelines*. Forest Service, Department of the Marine and Natural Resources.
- Forest Service. 2001. *Forestry and the Landscape Guidelines*. Forest Service, Department of the Marine and Natural Resources.
- Forest Service. 2001. *Forestry and Water Quality Guidelines*. Forest Service, Department of the Marine and Natural Resources.
- Forest Service. 2001. *Forestry and Archaeology Guidelines*. Forest Service, Department of the Marine and Natural Resources.
- Frawley, J.P., and Leavy, A. 2001. *Farm Forestry Land Availability, Take Up Rates and Economics*, Teagasc Rural Economy Research Series.
- Hannan, D.F. and Commins, P. 1993. *Factors Affecting Land Availability for Afforestation*. Economic and Social Research Institute, Dublin.
- Irish Farmers' Journal. 2001. *Forestry*. Technical Supplement, Irish Farmers' Journal, March 3, 2001.

Kearney, B. 2001. *A Review of Relevant Studies Concerning Farm Forestry Trends and Farmers Attitudes to Forestry*, COFORD, Dublin.

Lafferty, S., Commins, P. and Walsh, J.A. 1999. *Irish Agriculture in Transition. A Census Atlas of Agriculture in the Republic of Ireland*. Teagasc, NUI, Maynooth.

Leavy, A. and McCarthy, S. 2002. *Economics of Forestry as a Farm Enterprise in a Rural Development Context*. Signposts to Rural Change. Proceedings of the Rural Development Conference , Teagasc.

McCarthy, S. 2001. *Ireland's Greenhouse Gas Commitments: Linkages with the Forestry Sector*. Paper presented at IEA Conference, 2001, Portumna, Co Galway.

McCarthy, S., Matthews, A. and Riordan, B. 2002. *Determinants of Private Afforestation in the Republic of Ireland*. Economic Paper No.3, 2002, Trinity College, Dublin.

North Leitrim Men's Group (2001). *A Study of the Situation of Single Rural Men*. Community Centre, Manorhamilton, Co Leitrim.

O'Connor, R. and Kearney, B. 1993. Economic Issues in Irish Forestry. *Journal of the Statistical and Social Inquiry Society of Ireland* Vol. XXVI, Part V, pp 179-204.

O'Leary, T. McCormack, A. and Ní Dhúbhain, Á. 2002, *Final Report of Quantitative Attitudinal Surveys Carried out in East Wicklow and South Leitrim*. Irish Multifor.RD Project, Department of Crop Science, Horticulture and Forestry, University College Dublin.

Reidy, J. and Ní Fhlaitheartaigh, A. 2002 *Forestry and other Farm Schemes*. Paper read at the Society of Irish Foresters' Annual Symposium, 2002.

Teagasc. 2000. *The Farm Forest, A Step by Step Guide to Forestry for Farmers*.

## APPENDIX A - ORGANISATIONS CONSULTED

COFORD  
 Department of Agriculture, Food and Rural Development  
 Forest Service  
 IFA  
 Macra na Feirme  
 Private forestry companies  
 Teagasc (advisory and research)

Individual farmers

Rural development officers of Area Partnership Companies

Focus groups:

1. Macra na Feirme members representative of the whole country.
2. Farmers in the west of Ireland.

**APPENDIX B – QUESTIONNAIRES USED IN THE SURVEY**

**FARMERS WITHOUT FORESTRY**

**GENERAL**

Q1. Generally speaking, do you think the amount of forests (state and private) in the following places is too little, OK as it is or too much?

	Too Little	OK as it is	Too much	I don't know
Next to where I live <i>(within 500 meters)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In this locality generally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In Ireland in general	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*If the farmer stated too little or too much ask Q2 otherwise GO TO Q3.*

Q2. Do the answers you have indicated depend on the type of forest? Yes  No

If yes, please indicate the type of forest you most prefer

Q3. What is the approximate distance to the nearest forest where you live?

Beside my House	< 500m <i>(547 yards)</i>	500 m to 2 Km <i>(547 yards to 1.24 miles)</i>	> 2 km <i>(&gt; 1.24 miles)</i>	Don't know <i>(1.24 miles)</i>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q4. Some statements in relation to forestry are listed below. Please indicate the extent to which you agree

	Strongly Agree	Agree	Neither Agree/Disagree	Disagree	Disagree Strongly	Don't Know
Planting my land with trees indicates that Farming has failed on the land.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Planting my land with broadleaf is more acceptable than with Conifers.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forestry is only relevant for land that is unsuitable for farming.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Planting land with trees is the last resort...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forestry is too long term.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forestry provides a high-income alternative.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Forestry is most suited to farmers exiting...	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A forestry farm is easier to manage than your current enterprise mix.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Better land makes for better forestry.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**PROMOTION**

Q5. Has a Teagasc advisor ever suggested that you plant your land with trees? Yes  No

Q6. Have you ever been approached by a private or public forestry company to plant trees? Yes  No

Q7. Have you ever attended a Teagasc forestry demonstration /field day? Yes  No   
*If yes when (year) \_\_\_\_\_ where \_\_\_\_\_*

Q8. Have you ever attended an information evening / seminar on forestry? Yes  No

Q9. Are you (or have you been) a member of a farming and / or forestry association or organisation?

Farming Organisation	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Forestry Organisation	Yes <input type="checkbox"/>	No <input type="checkbox"/>

Q10. Where do get advice from regarding farming?

Q11. If you were to seriously consider forestry who would you use for information regarding forestry?

Q12. Have you seriously considered planting forests on your land? Yes  No

If Yes answer A below and

If No answer B below

**A. I considered the matter carefully and decided not to?**

Give 3 reasons why you decided not to:

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

What factors would influence to plant in future?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

**B. I have not considered forestry seriously up to now**

Why did you not consider forestry up to now?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

What factors would influence you to plant in future?

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_

Q14. Are you likely to plant trees in the future? Yes  No  Don't Know

Q15. These are reasons often given by farmers for not planting their land. In your situation I'd like to know would you consider these a reason for not planting your own land.

If yes please tick

- 1. I have never seriously thought about it.....
- 2. My property is too small.....
- 3. My land is too productive for trees/ I have no marginal land .....
- 4. I need my land to qualify for extensification premiums .....
- 5. I am not allowed according to regulations (Dúchas / Local Authority .....
- 6. I am not confident there is a market for timber .....
- 7. I will let my children decide about the best land use .....
- 8. My land use options are closed for far too long.....
- 9. I couldn't sell immature forest.....
- 10. There is enough / too much forests in this area already .....
- 11. There is strong resistance to planting trees in this area .....
- 12. I am waiting to see the changes in agricultural policy in a few years .....
- 13. I am waiting to see if premiums and grants for forestry will be improved .....
- 14. Other farmers with forestry are not encouraging .....
- 15. I don't like forests .....
- 16. I don't know anything about forestry .....
- 17. I am not confident I can get good advice .....
- 18. Planting land with trees reduces the value of the land .....
- 19. It would mean a loss of social welfare entitlements.....
- 20. REPS give a better return .....

If the farmer indicates some of these as reasons why he/she wouldn't plant his/her land. Please indicate which of the above are the top three reasons:

First – No. \_\_\_\_\_ Second – No. \_\_\_\_\_ Third – No. \_\_\_\_\_

**FARM PROFILE**

Q16. Where is your farm located? County: \_\_\_\_\_ Townland: \_\_\_\_\_

Q17. Total Number of hectares Farmed (as per area aid form) in this calendar year 2002 (please ✓)  
 < 20 ha (50 ac)      20 – 50 ha (50–123ac)      50 – 100 ha (123 – 247 ac)      100 – 150 Ha (247 – 370 ac)      150 Ha+ (370+ac)

Q18. Number of parcels Land owned      1       2       3       4       5

Q19. How many hectares of the land which you own is difficult to farm (i.e. wet, steep slopes, difficult access, away from home & farm yard etc)?  
 None < 10 ha       10 – 20ha       20 – 50ha       50+ ha

Q20. How many hectares of your land is let (a) on 11-month system \_\_\_\_\_ ha  
 (b) long-term lease \_\_\_\_\_ ha

Q21. Indicate the approximate Number of Animals on your farm in 2002 \_\_\_\_\_

**Dairy Cows**                      **Beef Cattle**                      **Ewes**  
 \_\_\_\_\_                      \_\_\_\_\_                      \_\_\_\_\_

Q22. Indicate the approximate Number of Hectares of Tillage, in THIS CALENDAR YEAR, 2002 ..... \_\_\_\_\_ ha

Q23. Are you participating in the REPS Scheme?                      Yes                       No

Q24. Is anyone in your family participating in an Early Retirement Scheme?    Yes                       No

Q25. Are you benefiting from extensification premiums?                      Yes                       No   
 If yes      High rate       Low rate

Q26. What is your stocking rate for calculation of extensification premiums (Livestock Units per ha)?  
 < 0.8       0.8 – 1.0       1.0 – 1.4       1.4 – 1.8       1.8+       Don't Know

**RESPONDENT PROFILE**

Q27. AGE  
 <30       30 – 39       40 – 49       50 – 59       60 – 65       65+

Q28. GENDER      MALE       FEMALE

Q29. Marital status: Married       Single       Widowed       Other  Please Specify

Q30. WHAT IS THE STATUS OF FARMING FOR YOU AND YOUR SPOUSE / PARTNER?  
    Part Time      Full Time      Retired      Not Involved

You                                                                                                          
 Your Spouse/Partner                                                                               

Q31. If you or your spouse are part time approximately what percentage of your household income is derived from farming?  
    20%       40%       60%       80%

Q32. Are you benefiting from any of the following social payments?  
 Non Contributory OAP       Contributory OAP       Farm Assist   
 Medical Card       Other       None

Q33. Number of children under age 18 years:

Q34. Do you have an identifiable successor for your farm? Yes       No       Don't Know

If you would like to enter a draw limited to respondents please give the following details to the recorder: name, address and telephone numbers.

**THANK YOU** for completing this questionnaire

**FARMERS WITH FORESTRY**

**GENERAL**

Q1. Generally speaking, do you think the amount of forests (state and private) in the following places is too little, OK as it is or too much?

	Too Little	Ok as it is	Too much	I don't know
<b>Next to where I live</b> <i>(within 500 meters)</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>In this locality generally</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>In Ireland in general</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If the farmer stated too little or too much ask Q2 otherwise GO TO Q3.

Q2. Do the answers you have indicated depend on the type of forest? **Yes**  **No**

If yes, please indicate the type of forest you most prefer

Q3. What is the approximate distance to the nearest forest where you live?

Beside my House	< 500m <i>(547 yards)</i>	500 m to 2 Km <i>(547 yards to 1.24 miles)</i>	> 2 km <i>(&gt; 1.24 miles)</i>	Don't know <i>(1.24 miles)</i>
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q4. Some statements in relation to forestry are listed below. Please indicate the extent to which you agree or disagree with the statements by choosing one of the answers from CARD A

	Strongly Agree	Agree	Neither Agree/Disagree	Disagree	Disagree Strongly	Don't Know
<b>Planting my land with trees indicates that Farming has failed on the land.....</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Planting my land with broadleaf is more acceptable than with Conifers.....</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Forestry is only relevant for land that is unsuitable for farming.....</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Planting land with trees is the last resort...</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Forestry is too long term.....</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Forestry provides a high-income alternative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Forestry is most suited to farmers exiting...</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>A forestry farm is easier to manage than your current enterprise mix.....</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Better land makes for better forestry.....</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**PROMOTION**

Q5. Has a Teagasc advisor ever suggested that you plant your land with trees? **Yes**  **No**

Q6. Have you ever been approached by a private or public forestry company to plant trees? **Yes**  **No**

Q7. Have you ever attended a Teagasc forestry demonstration /field day?  
If yes when (year) \_\_\_\_\_ where \_\_\_\_\_ **Yes**  **No**

Q8. Have you ever attended an information evening / seminar on forestry? **Yes**  **No**

Q9. Are you (or have you been) a member of a farming and / or forestry association or organisation?

Farming Organisation	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>
Forestry Organisation	<b>Yes</b> <input type="checkbox"/>	<b>No</b> <input type="checkbox"/>

Q10. Where do get advice from regarding farming?

Q11. If you were to seriously consider forestry who would you use for information regarding forestry?

Q12. How did you find out about the forestry scheme?

Advertisements   
Teagasc Staff

Friends, Relatives, Neighbours   
Commercial Forestry Company

Can't remember   
Other Please specify

Q13. What convinced you to go ahead? \_\_\_\_\_

Q14. Who or what agency encouraged you? \_\_\_\_\_

Q15. Would you consider planting more? Yes  No

If no give 2 reasons why not?

If no what factors would influence you to plant in future?

1. \_\_\_\_\_ 2. \_\_\_\_\_

**FARM PROFILE**

Q16. Where is your farm located? County: \_\_\_\_\_ Townland: \_\_\_\_\_

Q17. Total Number of hectares Farmed (as per area aid form) in this calendar year 2002 (please ✓)

< 20 ha (50 ac)    20 – 50 ha (50 – 123ac)    50 – 100 ha (123 – 247 ac)    100 – 150 Ha (247 – 370 ac)    150 Ha+ (370+ac)

Q18. Number of parcels Land owned    1     2     3     4     5

Q19. How many hectares of the land which you own is difficult to farm (i.e. wet, steep slopes, difficult access, away from home & farm yard etc)?  
None < 10 ha     10 – 20ha     20 – 50ha     50+ ha

Q20. How many hectares of your land is let (a) on 11-month system \_\_\_\_\_ ha  
(b) long-term lease \_\_\_\_\_ ha

Q21. Indicate the approximate Number of Animals on your farm in 2002 \_\_\_\_\_

Dairy Cows                      Beef Cattle                      Ewes  
\_\_\_\_\_                      \_\_\_\_\_                      \_\_\_\_\_

Q22. Indicate the approximate Number of Hectares of Tillage, in THIS CALENDAR YEAR, 2002 ..... \_\_\_\_\_ ha

Q23. Have you availed of the forest scheme? Yes  No   
If yes, How many times: one  two  three  four

Q24. How much land in total benefited under the scheme? Acres    ha

Q25. Are you participating in the REPS Scheme? Yes  No

Q26. Is anyone in your family participating in an Early Retirement Scheme? Yes  No

Q27. Are you benefiting from extensification premiums? Yes  No   
If yes    High rate  Low rate

Q28. What is your stocking rate for calculation of extensification premiums (Livestock Units per ha)?

< 0.8     0.8 – 1.0     1.0 – 1.4     1.4 – 1.8     1.8+     Don't Know

**RESPONDENT PROFILE**

Q27. AGE  
 <30  30 – 39  40 – 49  50 – 59  60 – 65  65+

Q28. GENDER MALE  FEMALE

Q29. Marital status: Married  Single  Widowed  Other  Please Specify

Q30. WHAT IS THE STATUS OF FARMING FOR YOU AND YOUR SPOUSE / PARTNER?

	Part Time	Full Time	Retired	Not Involved
You	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your Spouse/Partner	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q31. If you or your spouse are part time approximately what percentage of your household income is derived from farming?

20%  40%  60%  80%

Q32. Are you benefiting from any of the following social payments?

Non Contributory OAP  Contributory OAP  Farm Assist   
 Medical Card  Other  None

Q33. Number of children under age 18 years:

Q34. Do you have an identifiable successor for your farm? Yes  No  Don't Know

If you would like to enter a draw limited to respondents please give the following details to the recorder: name, address and telephone numbers.

**THANK YOU** for completing this questionnaire

**APPENDIX C – GEOGRAPHICAL EXTENT OF REGIONS**

Region	County
Border	Louth, Leitrim, Sligo, Cavan, Donegal and Monaghan
Dublin	Dublin
Mid East	Kildare, Meath and Wicklow
Mid West:	Clare, Limerick and Tipperary North
Midlands	Laois, Longford, Offaly and Westmeath
South East	Wexford, Kilkenny, Carlow, Tipperary South and Waterford
South West	Cork and Kerry
West	Galway, Mayo and Roscommon



