

Mobilising Ireland's forest resource

Authored by the COFORD Wood Mobilisation Group



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Minister's statement

Our forests are a growing source of renewable raw materials for use as wood fuels and in the manufacture of a wide range of wood products. In 2013, roundwood harvest was at record levels, reaching over 3 million cubic metres. Demand for all wood products remains strong – and the emerging challenge is how to sustainably increase wood harvest, in order to meet anticipated consumer and processor needs. The overall objective is to more fully realise the value of the forest asset and thereby contribute to rural development and the general economic welfare of the country.

I am pleased therefore to welcome this report of the COFORD Wood Mobilisation Group, which first and foremost has taken a close look at both historic and projected wood supply and demand numbers across the island. It shows that to address the expected increases in demand we will need to mobilise more areas into harvesting, and as well to develop approaches and policies to make more of the forest resource at our disposal.

The Forest Service is addressing a number of these issues, through, for example, grant aid for forest roads, which will continue under the new Forestry Programme for the period 2015-2020. The other mobilisation issues identified by the group, and as outlined in the report, need a sustained and coordinated approach by stakeholders and government. The recommendations in the report form the basis for such an approach, and as well a benchmark for future evaluation.

I thank the COFORD Wood Mobilisation Group, under the leadership of Mike Glennon, for putting together an insightful and challenging report. It deserves serious consideration and follow-up by government and forest sector stakeholders.

Tom Hayes, TD

Minister of State for Forestry

Department of Agriculture, Food and the Marine

March 2015

Foreword

Wood mobilisation is recognised as one of the most significant challenges facing the forest sector over the coming decade. It is about realising expected increases in wood supply, and meeting rising demands for wood fibre from all major end users, in an efficient and cost effective manner. It means making the most of the existing state and private forest resource and efficiently moving wood fibre along the supply chain to the processor.

The work done by the COFORD Wood Mobilisation Group, and as encompassed in this report, embraces most if not all of the issues affecting wood supply and demand on the island of Ireland today. It is the first ever comprehensive, in-depth look at the issues and how they can be addressed by industry and state agencies alike.

Completing this report involved a great deal of voluntary time and effort on behalf of industry participants and much work by the COFORD Secretariat, Coillte, the Northern Ireland Forest Service and Teagasc. Well done to all concerned and a special thanks to Mike Glennon for leading the group, and for bringing the work and the report to a successful conclusion.

COFORD's task is to advocate, influence and support the implementation of the recommendations in the report, and to update any underlying analyses. By so doing, and contributing to the overall objectives, it will help to realise the vision of the forest sector as one of the key components of the Irish economy and society in the decades ahead.

Michael Lynn

Chairman

COFORD

Preface

State funding of afforestation and forest research over many decades has in combination with private sector investment and innovation, built up a competitive, first class wood processing sector on the island of Ireland.

This is all the more remarkable given the 2008 collapse in the domestic construction market. In order to survive, the forest products sector had to rapidly shift its sales and marketing focus to the British market and beyond. Not only has the sector come through this period, but it has grown and become highly export focussed, to the extent that export sales reached €280 million in 2013, the highest level since records began.

The ability to adapt to changing market conditions is founded on underlying strengths in producing quality wood products, fit for market. It also depends on the ability to align wood supply with demand in the short, medium and long term, through a combination of forest expansion, technology, tactical planning, and well thought-out policies and measures right along the wood chain.

As a starting point the forest sector in Ireland needs deliverable estimates of future wood production from our forests, including size and product categories, preferably over a 20-year period, intersected with estimates of the level of roundwood demand in the period up to 2020 and beyond.

The report includes a wood fibre supply/demand analysis, which has identified a likely shortfall between forecasted supply and demand in the order of 1.0 million cubic metres in 2014, 0.5 million cubic metres of which is sawlog material. This shortfall is set to double by 2020 to 2.0 million cubic metres, 0.9 million cubic metres of which will be sawlog. Maximising the mobilisation of forest products on an all Ireland basis will help to reduce this difference, and reduce reliance on imports. The report makes a number of specific recommendations to increase the level of supply, especially on meeting the burgeoning demand for forest-based biomass. It also cautions that demand-side incentives need to be carefully crafted, in order to provide fair competition for a scarce and valuable resource.

Wood mobilisation is the key to providing a return on investment, control of raw material costs, and security of supply. These objectives are central to the recommendations made, which include better ways to devise, present and understand wood production forecasts, infrastructural investment both state and private, licensing and planning procedures, technology, taxation, research, training, advice, and independent information on roundwood prices.

My intention in chairing the COFORD Wood Mobilisation Group and making its report available to the Minister for Forestry and the wider stakeholder community is that the recommendations will be followed through and acted upon. By doing so we will grow the wood processing sector on the island, together with jobs and exports.

In conclusion, I want to thank all the members of the COFORD Wood Mobilisation Group for their hard work and cooperative spirit, all those who made written and verbal submissions during the course of the consultation process.

Mike Glennon

Chair

COFORD Wood Mobilisation Group

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Dr Eugene Hendrick and Forest Sector Development/COFORD Division of the Department of Agriculture, Food and the Marine provided secretarial and analytic support to the group.

Drima marketing compiled and updated wood fibre supply and demand data. Henry Phillips advised on the use of roundwood forecast data.

Coillte provided historic and current wood sales data, and updated projections of future demand for roundwood for panel board manufacture, as well as providing top diameter breakdowns of wood sales. The Northern Ireland Forest Service provided updated wood production data. Members of the Irish Timber Council and wood-based panel manufacturers provided roundwood and wood fibre demand estimates by company.

Executive summary and list of recommendations

Terms of reference of COFORD Wood Mobilisation Group

The COFORD Wood Mobilisation Working Group (CWMWG) was established to identify and make recommendations to address barriers to wood mobilisation from forests to end user, under the following terms of reference:

1. To identify and make recommendations on issues impacting on access to and mobilisation of wood resources at the national level, taking into account cost effectiveness and related issues, with due reference to the work of the Forest Policy Review Group, and other relevant reports.
2. Further understand and assess ways to address projected shortfalls in wood fibre supply on the island.
3. Update information on wood harvest v forecast contained in Table 1 in the COFORD *All Ireland Roundwood Production Forecast 2011-2028*.

Background

1. Demand by indigenous industry for forest fibre on the island of Ireland already exceeds the capacity of state and private forests to meet it, as evidenced by roundwood imports.
2. Current high levels of harvest and demand reflect well on the quality of roundwood that is coming to the market from Irish forests, as well as the level of investment in supply chain management, processing technology and marketing by the processing sector.
3. A tight supply has meant that large sawlog is being imported for further processing, while wood fuels such as firewood and pellets are also being imported to meet the increasing levels of demand. While a level of imports is likely to continue, from a national economic perspective, and to build the significant role that forests play in climate change mitigation, the best source of wood for sawn timber, panels, fuel and other products is from Irish forests.
4. In that regard, the recommendations in the Government forest policy review (*Forests, products and people*) to invest in increasing the forest resource from the current 11% of the land area, to 18% by mid century, with one of the main drivers being to provide for a sustainable level of increase in wood supply, need to be implemented.
5. Despite relatively high stumpage prices in recent years there are parcels in the public and private estates that are not being harvested. The public sector forecasted volume (and in some years the private forecast) includes roundwood that is not coming to market. This presents a challenge for both forecasting and wood mobilisation. The particular challenge for the private sector is to mobilise the forecasted near ten-fold increase in roundwood production between now and the end of the next decade.
6. A key issue that the COFORD Wood Mobilisation Group has addressed, in consultation with stakeholders, is how to remove barriers to wood mobilisation, in order to enable forecast levels of wood production to be met and exceeded. In this context, it is important to point out that increasing harvest levels over and above the net realisable volume levels in the All Ireland forecast would not be at the expense of a sustainable level of wood production. In fact, the second NFI has shown that the annual harvest in the Republic is less than half of the wood increment at a national level.

Specific mobilisation issues identified

7. **Impacts of felling practices and rotation lengths on future assortment availability**

Forest Service data show that there is a trend for a proportion of stands to be felled well in advance of a 20-30% reduction in the age of maximum mean annual increment (which is generally assumed to be the case for forecasting purposes). While growers may be availing of high prices in the market, stands felled in this manner are unlikely to be providing the maximum financial return on a discounted cash flow or internal rate of return basis. Information needs to be provided to growers on the financial implications of rotation length. Reduced rotations will also reduce the level of sawlog-sized material coming available in the medium to longer term. There is a need to reflect this in the national roundwood forecasting system.

8. **Felling licences**

Felling licence applications should be processed as rapidly as possible and not be a barrier to the mobilisation of roundwood. Linking of felling licence approval with the submission of long-term management plans, as envisaged by the COFORD Forest Management Planning Group, will be a significant step forward in facilitating good management practices and the mobilisation of roundwood. The validity period for forest management plans should cover all planned thinning operations up to clearfelling stage. The time taken from submission to approval of a felling licence should be summarised and documented annually.

9. **Planning permission for forest entrances**

Planning approval for forest road entrances needs to be streamlined, and should reside primarily with the Forest Service as the Department that is responsible for forestry regulation. The current discussions on this matter between line Departments and Local Authorities need to be brought to a satisfactory conclusion, as the uncertainty surrounding the issue has consequences for wood mobilisation.

10. **Forest roads**

Well-planned and engineered forest roads are essential for efficient and sustainable wood mobilisation, and so that plantations are thinned on time and roundwood production forecasts are achieved. Due to high capital costs and the relatively low value of early thinnings, grant aid for forest roads is vital. Once established the infrastructure will serve for future mobilisation. Technical aspects of roading grants to be examined include availability of surface grade limestone and possible substitutes that might meet the required specifications, roading density, culverts, and the possibility of a standard for access tracks being introduced, of a lower grade than forest roads as such.

11. **Provision of harvest information**

The All Ireland Roundwood Production Forecast foresees a doubling of harvest in the Republic over the period up to 2028, to 6.4 million cubic metres, with almost all of the increase forecast to come from the private sector. Investment will be required to maintain and upgrade the county road infrastructure to bring this increase to market. Close engagement is required between relevant Local Authorities and all the elements of the forest sector, including the Forest Service, processors, Coillte, private owners groups and forestry companies, so as to mobilise production potential. The Forest Industry Transport Group (FITG) fulfils a useful role in providing for interaction between the forest sector and the regulatory authorities regarding transport. However, there also needs to be sustained and formal engagement between the Forest Service and Local Authorities on potential future levels of harvest. This should take the form of providing GIS-based information on the location of all forest areas, as well as county level forecasts of wood production, as they become available from the national roundwood production forecast. This work should enable better planning, and support the case to central government for investment in county road infrastructure.

12. **Coillte resource**

A wood resource within the Coillte estate is not being mobilised due to high roundwood extraction costs, access issues, lack of markets for certain species and environmental constraints. Some of these stands contain volumes of sawlog material. Consideration should be given to offering some of these stands for sale such that it

would enable interested parties to invest in cable and related systems and recover costs over a number of years, rather than having to rely on individual sales transactions. .

Coillte also has a number of lodgepole pine sites where there is potential to recover small-sawlog. In order to maximise small sawlog recovery, short lengths of 2.5 m would need to be recovered, with the material moved quickly off-site following harvest and processed.

13. Road haulage and transport technology

Coillte has been engaged for a number of years with Local Authorities in the development and implementation of agreed haulage routes. These are designed to avoid and reduce the risk of road damage. Practice in Northern Ireland has not been to agree/designate routes but to recommend certain routes. The recently publication by the Forest Industry Transport Group (FITG) *Managing Timber Transport - Good Practice Guide* proposes four categories of routes ranging from unrestricted to excluded (“routes currently unsuitable for timber haulage vehicles, unless substantial engineering works are carried out”).

The rise in private forest establishment over the past three decades and the consequent increase in the level of harvesting bring the issues of recommending/designating haulage routes into sharper focus. Privately-owned forests have an average size of 8 ha, considerably smaller than the average Coillte block, and are more dispersed in the countryside.

The CWMG has considered the concept of designated roundwood haulage routes in depth, particularly in relation to the private sector forest resource. While it may have some merit, how it could be applied to private sector forests, given their disperse nature and small size is open to question. Nevertheless, the CWMG group is supportive of the pilot scale work on preferred routes that is being undertaken as part of the work of the Forest Industry Transport Group (FITG). Involvement and buy-in from grower organisations in this work is of critical importance.

In any event, prior consultation between stakeholders and Local Authorities will be critical to the introduction and operation of preferred routes.

14. Information and advice relevant to wood mobilisation

Forest owner groups have an important role to play in wood mobilisation and there is a case that their work should be part funded (assuming an application and assessment process) as part of the national forestry programme.

In many European countries, a significant number of private forest owners are members of forest owner groups. A 2008 report¹ by the Confederation of European Forest Owners (www.cepf-eu.org) shows that in several countries over 20% of the annual roundwood harvest comes from producer groups.

Some forest owners are already members of the IFA, ITGA and their local Producer Group. They may also go to forestry events run by Teagasc and have periodic contact with the company that planted their land. Adding an additional structure of Knowledge Transfer Groups, as proposed in the current draft Forestry Programme 2015-2020, could lead to duplication of effort. The group feels it would be better to have a single structure, whereby Knowledge Transfer Groups would be part of Producer Groups, which would then work with National Growers Organisations.

Price levels

The CWMG view is that some forest owners are unaware of price levels for roundwood and the different assortments, and that this acts as a barrier to sales and wood mobilisation. The group is aware that the Irish Timber Growers Association, Teagasc and the Forest Service are actively addressing this issue through information days and the provision of information on prices and related matters. The group is of the view that enhanced availability and publication of up-to-date and accurate information on roundwood assortment and product prices at national and regional levels will aid wood mobilisation. Its view is that the compilation of such information at the national level should be explored, and implemented on an independent basis. In addition, information on harvesting and haulage rates would provide for greater transparency in pricing.

1. European Forest Owner Organisations – a study conducted by CEPF. See Table 2 on Page 35. Available at: www.cepf-eu.org/vedl/Forest%20Producers_CEPF%20study%202008.pdf

Management interventions

A proportion of forest owners are not aware of the need for management interventions and their strong impact on the return on investment. Teagasc is addressing this issue by providing a wide range of information, arranging one-to-one meetings with forest owners, as well as forestry practice field days and workshops. The Irish Timber Growers Association, private forestry companies and Coillte are also active in this area. The Teagasc work needs to continue, but should be particularly targeted at owners who have not attended field days or workshops. The group was of the view that consideration should be given to having attendance at a basic thinning/management course 8-10 years after establishment as a condition of continued receipt of annual premiums.

There is concern that some first thinning operations may be removing only larger trees (high-grading), which goes against good forestry practice. Such instances have the potential to result in knock-on effects on growers' profitability and the quality of their forests. The occurrence of this practice needs to be determined and reported by the Forest Service on a periodic basis. Formal forest management plans will help to address this issue.

Sales methods

Sawmills operate in an environment where sawnwood is sold across a range of lengths and other dimensions according to demand. They need to have the flexibility to match their customers' demand to the availability of assortments in the forest. It may well be that prices paid to the producer reflect the flexibility offered by the method of sale, for example, whether the material is sold standing or at roadside, or if a biomass assortment is also to be harvested. Many of these issues can be addressed by providing price information already referred to, and this should include prices for standing and roadside sales.

The Timber Sales and Dispatch System and the template Master Tree Sales Agreement, both developed by ITGA, are designed to facilitate roundwood sales from private forests.

15. **Training**

The group is of the view that provision of a well-organised and structured training programme for harvesting machine operators is needed at national level in order to support high quality thinning operations and aid in the mobilisation of roundwood.

16. **Taxation treatment of forest income**

Given the long timeframe of forestry and the periodic nature of income from forests, the High Earner's income restriction and its application to income from woodlands has a negative and detrimental effect on wood mobility. This tax provision inadvertently impacts on ordinary forest owners who are typically not high net worth individuals, and does not take into account the unique nature of a growing forest which realises most of its revenue at the end of the growing cycle (in the region of 30-40 years and sometimes significantly longer). In effect many years of accrued income is taxed as a single year's annual income, not acknowledging the long term nature of forestry and the fact that it does not produce an annual income.

This tax provision has a negative effect on wood mobility, and hence jobs and economic activity, as growers seek to reduce their taxation burden by reducing the size of individual sales, hence restricting the flow of timber onto the market. To address this anomaly the Irish Timber Growers Association (ITGA) has suggested that forest income should be excluded from the High Earner's income restriction, and has specifically called for the reference to S.232 to be removed from Schedule 25B of the Taxes Consolidated Act (as amended). An alternative, averaging of income, already available to farmers for certain agricultural activities, should be extended to forestry, but for a longer timeframe for the reasons outlined. It seems contradictory that many farmers can use averaging for certain activities, but not for forestry income, even where the two operations can run side-by-side on the same farm.

17. **Voluntary forest certification and chain of custody**

Few (estimated to be less than 1000 ha in total) privately owned forests are certified under the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC). As the level of supply

from the private sector increases, the lack of certification is likely to become a barrier to wood mobilisation. Costs of voluntary forest certification are also an issue for private forest owners, which certification bodies need to be conscious of when setting charges. It also needs to be borne in mind that all private forests have been established subject to Forest Service environmental guidelines and procedures, and are subject to forest legislation, including a replanting obligation. In addition, the new EU Timber Regulation (EUTR) establishes a due diligence onus on those placing timber on the market for the first time to show they have exercised due diligence in establishing that the timber has been legally harvested.

Forest and group certification will be facilitated through the implementation by the Forest Service of the proposed new forest management planning system being developed by the COFORD Forest Management Planning Group, and specific considerations related to voluntary forest certification have been incorporated in the plan templates.

18. Environmental designations and procedures

Environmental designations and procedures which are legally based must be complied with by a responsible forest sector. Compliance requirements can vary at a local level and there can be delays in responses from regulators leading to inefficiencies and added costs in harvesting, as well as reductions in wood mobilisation. In addition, proper advance consultation is needed for any proposed new regulations.

19. Rights-of-way

Restrictions due to right of way issues can prevent wood mobilisation – it is a serious issues in certain instances.

Supply and demand side issues and measures

20. In the half century since 1960, the level of wood harvest in the Republic Ireland has increased 10-fold, reaching over 3 million cubic metres in 2013. Roundwood production is forecast to double by the end of the next decade to reach 6.4 million cubic metres per annum in the Republic, and close to 7 million cubic metres on the island as a whole (Figure 1).

It is estimated that by 2020 wood demand on the island will exceed the expected supply by 2.10 million cubic metres per annum (Annex 1, Table 5). Overall net demand for roundwood/wood fibre on the island of Ireland is forecast to increase from 4.6 million cubic metres in 2014 to 6.41 million cubic metres by 2020 (Annex 1, Table 5), an annualised rate of increase of 6%.

21. Boardmill demand (including the use of sawmill residues) is forecast to increase from 1.40 million cubic metres in 2014 to 1.60 million cubic metres by 2020, an increase of some 14% overall or about 2.5% year-on-year.
22. Sawmilling demand is forecast to rise at a substantially faster rate, from 2.67 million cubic metres in 2014 to 3.28 million cubic metres by 2020, an increase of 0.61 million cubic metres, some 23% or 3.5% year-on-year (Annex 1, Table 2).
23. Forest-based biomass is projected to see the largest rise in demand, in both the Republic and Northern Ireland, mainly as a result of current policies such as REFIT and the carbon tax in the Republic, and the renewable heat incentive in Northern Ireland. Most of the increase in forest-based biomass demand to 2020 in the Republic is comprised of the aggregate demand for Combined Heat & Power (CHP), heat only, and for co-firing with peat. To meet the stated government targets for renewable energy by 2020, the gross demand for forest-based biomass for energy use on the island increases from 1.91 million cubic metres in 2014 to 3.26 million cubic metres in 2020, an increase of 170%, or a compound annual rate of increase of just over 10% year-on-year. Such a large increase in projected demand for forest-based biomass will require the implementation of the recommendations in this report and specifically a significant investment in the sectoral supply chain, as covered in a number of recommendations. Notwithstanding implementation of these recommendations, biomass imports will still be required.

24. The group is of the view that there is good scope to sustainably increase the level of harvest, by increasing the intensity of harvesting (for example by cutting to tip and by harvesting branches during thinning) and by collecting harvesting residues at clearfelling on fertile, high yielding sites, following needle fall. Currently Coillte harvests c 30,000 t/annum of harvest residues (excluding stumps) and this could expand to 100,000 t by 2017-2018 (including stump harvesting).
25. Demand side incentives such as the REFIT tariff, the carbon tax and the proposed renewable heat incentive also have a positive role in stimulating demand and bringing additional volumes of roundwood and residues to market. These incentives have the effect of making early thinning interventions more economic, and hence bring forward the production of sawlog-sized material. It has also to be recognised that small sized roundwood suitable for energy uses is also the main raw material for board manufacture, and as well that sawmilling technology is constantly evolving and is capable of utilising smaller sized material than was traditionally the case. In this context it is important that demand side measures as they are implemented are carefully designed and set at a level that does not over incentivise particular end uses, and competition is not distorted.

Updating information on wood harvest v forecast in conjunction with Table 1 in the COFORD All Ireland Roundwood Production Forecast 2011-2028

26. Overall, the production forecast did not change to any appreciable extent over the 7-year period (2007-2013), averaging at around 3.7 million cubic metres per year (Annex 1, Table 1) in total for the island. Actual harvest varied considerably from year to year, with a corresponding difference between forecast and actual levels of harvest, which were greatest (over 0.6 million cubic metres) in 2008 and 2009. Since 2010, when NRV-type forecasts were introduced in the Republic, the difference between the NRV forecast and actual harvest has been 11%, and has remained between 0.20-0.35 million cubic metres per annum.
27. Roundwood demand fell off in 2007 and 2008 due the building recession and the financial crisis. It has recovered somewhat in recent years, particularly as sawmills have successfully targeted the GB market.
28. **Republic of Ireland**
Closer examination of the forecast for the most recent 4-year period for which data are available (Table 4) for the Republic of Ireland shows that the Coillte harvest reached 89% of the net realisable volume (or 11% below the NRV forecast), while the private sector harvest was on average 9% above the NRV forecast, albeit with large inter-annual variation in the harvest level, which is probably a reflection of variation in price demand over the four years. There is good evidence that the larger than forecast harvest levels for the private sector in 2011 and 2013 were based on the higher than average prices prevailing for parts of the two years. Experience in other European countries tends to support the conclusion that private sector harvest closely follows roundwood prices. However, longer time series will be required to develop price/demand models and elasticities.
29. **Northern Ireland**
Over the 4-year period, 2010-2013 actual harvest levels from NI Forest Service forests averaged 91% of forecast (Table 5). Harvest scheduled and completed during this period, and particularly in 2012, was less than forecast figures for wood availability. Forecast figures for wood availability did not attempt to anticipate on-going forest management planning decisions required to address factors of a declining wood fibre supply in the longer term, economic and environmental considerations.
30. The general conclusion is that rapid and effective implementation of the wood mobilisation and supply side recommendations in this report will be needed to avoid high levels of imports of biomass fibre for energy needs in the period up to 2020 (in the region of 1.2 million cubic metres per annum), and sawlog (in the range 0.5 to 0.9 million cubic metres per annum). While a level of sawlog imports (mostly from Scotland) is already taking place, and firewood, pellets and some wood chip are also being imported, it is likely that future demand for wood fibre in Europe will drive the prices of these commodities higher.

31. All of the outlook studies in Europe point in the same direction – increased demand for wood fibre and the need for increased mobilisation rates to meet this demand, with increased levels of imports of wood for energy and other uses likely to arise. Projections in the outlook studies also indicate that competition for wood resources is likely to make imports of roundwood and energy wood more expensive, and supports the need for the implementation of the recommendations outlined in this report.
32. It is essential that the assumptions used to derive forecast volumes for both the private sector and Coillte are revisited for the next forecasting period (2016-2035). This work is not only to provide a greater level of assurance when planning investment in processing infrastructure, but also to quantify the amounts and location of roundwood where the measures outlined in Recommendations 10 and 11 should be applied, and to enable a better judgement to be made of the impact of mobilisation measures. As part of this process, the level of harvest against forecast for both the private sector and Coillte will need to be monitored and reported by Forest Service, through COFORD, for 2013-2015.
33. **Research and development, and innovation**
The COFORD Forest Research Ireland report identifies a number of research topics related to wood mobilisation. This research needs both industry and third level involvement, and to be part of an innovation-led and competitive supply-chain, and lead to outputs that can be taken up in support of wood mobilisation.

List of recommendations

The recommendations are listed in the order as they appear in the text. Wherever possible, they are linked to specific bodies in order to facilitate their implementation, be they government departments or agencies, stakeholder groups, or combinations thereof.

The following priority ratings have been added to each recommendation:

Priority 1: Critical for cost effective and efficient wood fibre mobilisation up to and beyond forecast levels, and for state and industry planning and investment, for implementation before the end of 2015

Priority 2: Essential for cost effective and efficient wood fibre mobilisation up to and beyond forecast levels, for implementation over the period 2015-2016

Priority 3: Desirable for cost effective and efficient wood fibre mobilisation up to and beyond forecast levels, for implementation over the period 2015-2016.

Recommendation 1

The Forest Service and Teagasc, in collaboration with Coillte, grower organisations, private forestry managers, and the ITC to provide information to make growers aware of the possible impact of felling age on overall financial return (Priority 1).

Recommendation 2

In conjunction with Recommendations 36 and 37 the second All Ireland Roundwood Production Forecast (2016-2035) to take account of ongoing changes in felling patterns and rotation lengths following consultations with grower organisations, Coillte, Teagasc, ITC and private forestry managers (Priority 1).

Recommendation 3

The validity period for forest management plans for felling licence purposes to extend to all planned thinning operations up to clearfelling stage (Priority 1).

Recommendation 4

The Forest Service to report annually on the number of felling licences issued, broken down by thinning, clearfell and other, and the times taken for issuance of licences, in accordance with the provisions in the Forestry Bill (Priority 1).

Recommendation 5

Planning approval for forest road entrances to reside primarily with the Forest Service and the matter to be finalised as soon as possible (Priority 1).

Recommendation 6

An integrated permitting system to be developed by the Forest Service to cover forest road entrances, forest roads and associated felling (Priority 1).

Recommendation 7

Grant aid for the installation of new forest roads to facilitate first and subsequent thinnings to be continued in the new forestry programme (Priority 1).

Recommendation 8

Technical aspects of the roading specification to be examined including regional differences, availability of surface grade limestone and possible alternatives, roading density, culverts and the possibility of introducing a standard for forest tracks (Priority 3).

Recommendation 9

Forest Service to provide GIS-based information on forest location as well as forecasts of potential wood production at a county level to relevant Local Authorities on 5-year cycle, and to work in partnership with the local government and central government systems on targeting investment in the county road system (Priority 2).

Recommendation 10

Coillte to offer for public sale groups of sites with wood mobilisation constraints related to access and/or harvest, or with environmental or other constraints, in partnership with interested parties to facilitate capital investment and payback. This to include work that could extend over a number of years (Priority 1).

Recommendation 11

In the context of constrained supply and high fibre prices, Coillte and the processing sector to work together to investigate the potential of exploiting lodgepole pine stands for small sawlog-sized material (Priority 2).

Recommendation 12

Continued and increased investment to be made by Local Authorities in the maintenance and upgrading of the county road infrastructure to enable wood mobilisation from private sector and public forests (Priority 1).

Recommendation 13

The use of weight restrictions on roads needs to be addressed at a strategic and road maintenance and upgrade level, in the context of forest location and future wood mobilisation, so that investment can be directed to areas where there are likely to be increases in harvesting. Restrictions, where imposed, to be based on an agreed objective methodology, to be developed between the regulatory authorities and stakeholders (Priority 1).

Recommendation 14

The deployment of variable tyre pressure systems (VTP) on timber haulage trucks in areas that are severely affected by the strength of local public road infrastructure should be encouraged by the haulage sector and stakeholders and supported through grant-aid where appropriate (Priority 3).

Recommendation 15

Knowledge transfer groups to be set up as part of Producer Groups in order to develop efficient and cost-effective systems (Priority 3).

Recommendation 16

Grant aid support for forest producer groups and National Grower Organisations to be considered under the new forestry programme, 2014-20 (Priority 3).

Recommendation 17

Teagasc to continue to provide forestry practice information and advice to the private forest sector, including producer groups (Priority 2).

Recommendation 18

Taking into account the ITGA Private Roundwood Price database an independent national roundwood and product assortment price information system to be explored by Teagasc, farmer and grower groups, Coillte, the Irish Timber Council (ITC) and the Forest Service. The system to provide information on both standing and roadside prices and preferably to have a regional basis (Priority 1).

Recommendation 19

The Forest Service to give consideration to linking eligibility for premium payments to attendance at an information event on forest management and roundwood sales, where a professional management arrangement is not in place (Priority 3).

Recommendation 20

The Forest Service to periodically review and report on thinning control, and the level and quality of thinning in plantations (Priority 2).

Recommendation 21

Coillte to investigate how trainee machine operators could work on Coillte lands in order to qualify for a City & Guilds Land Based Services qualification (Priority 1).

Recommendation 22

Teagasc to establish a national forest harvesting operation skills register, for example, FETAC and NPTC, make it available and promote its use in the sector, so as to enable skills to be matched to particular operations (Priority 2).

Recommendation 23

Teagasc to coordinate and promote the development of national capacity to train and certify harvesting machine operators in machine operation and in good silvicultural and environmental practices (Priority 2).

Recommendation 24

Forest income to be excluded from the High Earner's income restriction, and the reference to S.232 be removed from Schedule 25B of the Taxes Consolidated Act (as amended) (Priority 1).

Recommendation 25

Averaging of income for taxation purposes, already available to farmers for certain agricultural activities, to be extended to forestry, but for a longer timeframe (Priority 1).

Recommendation 26

The Forest Service to implement the findings of the COFORD Forest Management Planning Group, and in particular those related to facilitating voluntary forest certification (Priority 2).

Recommendation 27

The threat response plan for the Hen Harrier Red Areas needs to be advanced and concluded by the National Parks and Wildlife Service (NPWS) to provide a balanced approach to forest operations and habitat and species protection (Priority 2).

Recommendation 28

The system for the approval of aerial fertilisation of forest crops to be reviewed by the Forest Service, so as to support long term wood production goals and to facilitate wood supply mobilisation (Priority 2).

Recommendation 29

The referral procedures between Forest Service, NPWS, Local Authorities, Fisheries authorities and other designated bodies to be reviewed and resources increased in order to minimise delays from referrals. Time periods for processing applications to be recorded and reported (Priority 1).

Recommendation 30

Proposed designation of new areas or changes in the boundaries of existing Natura 2000 sites or other areas that require referral to statutory authorities, and new regulations arising from the adoption or implementation of national legislation to be subject to economic impact assessment in accordance with Regulatory Impact Assessment (Priority 1).

Recommendation 31

Farmer groups and forest owners to establish a binding code of practice related to rights-of-way and shared roads (Priority 2).

Recommendation 32

The Forest Service, Coillte, Teagasc and the forest sector at large to stimulate increased intensity of harvesting at thinning and clearfelling stages through the development of good practice guidance, dissemination of research findings, and increasing the use of full tree harvesting (including tops and branches) and recovery of final harvesting residues (Priority 2).

Recommendation 33

The Department of Agriculture, Food and the Marine to implement the forestry for fibre measure in the Forestry Programme 2015-2020, in order to provide for additional forest-based biomass (Priority 2).

Recommendation 34

Demand side measures related to renewables, such as feed-in tariffs, the carbon tax and other measures to be updated as appropriate, in order to provide balanced incentives for increased wood mobilisation (Priority 1).

Recommendation 35

In conjunction with Recommendation 34, market impacts and wood paying capacity implications to be fully assessed by relevant government departments and agencies before the introduction or updating of demand side measures related to forest-based biomass (Priority 1).

Recommendation 36

The assumptions behind net realisable volume concept for both the private sector and Coillte in the development of the 2016-2035 forecast to be reviewed, in order to refine potential harvest levels (Priority 1).

Recommendation 37

The all Ireland roundwood production forecast to be updated on a 5-year cycle, the second forecast to cover the period 2016-2035, incorporating results of research on access, site productivity and information on changes in forest area (Priority 1).

Recommendation 38

In conjunction with the update of the forecast, the stakeholder group to clarify the overall purpose of the national forecast and associated definitions and how to disseminate the forecast through web-based interfaces, and provide better estimates of the forest-based biomass resource potentially available for energy purposes (Priority 1).

Recommendation 39

Forest Service to continue the annual determination of harvest through the COFORD Woodflow and to continue to report on harvest in relation to forecast levels and to examine ways to improve the understanding and utility of national forecasts (Priority 1).

Recommendation 40

Continue state and private investment in R&D and demonstration related to thinning and wood mobilisation generally (Priority 1).

I - Introduction - the COFORD Wood Mobilisation Working Group

Terms of reference

The COFORD Wood Mobilisation Working Group (CWMG), I was established to identify and make recommendations to address barriers to wood mobilisation from forests to end user, under the following terms of reference:

1. To identify and make recommendations on issues impacting on access to and mobilisation of wood resources at the national level, taking into account cost effectiveness and related issues, with due reference to the work of the Forest Policy Review Group, and other relevant reports.
2. Further understand and assess ways to address projected shortfalls in wood fibre supply on the island.
3. Update information on wood harvest v forecast contained in Table 1 in the COFORD *All Ireland Roundwood Production Forecast 2011-2028*.

COFORD Wood Mobilisation Group membership

Mike Glennon, Glennon Brothers, Chair

Owen Cooney, Irish Timber Growers Association (ITGA)

Niall Coulston, Enterprise Ireland

Michael Fairgrieve, Northern Ireland Forest Service (NIFS)

Dr Eugene Hendrick, Forest Service, Department of Agriculture, Food and the Marine (DAFM)

Noel Kennedy, Teagasc

Richard Latimer, Irish Timber Council (ITC)

Myles McDonagh, Coillte

Geraldine O'Sullivan, IFA (replaced for part by Deirdre O'Shea)

II - Background - the challenge of mobilising roundwood and making more from the forest resource

Demand by indigenous industry for forest fibre on the island of Ireland already exceeds the capacity of state and private forests to meet it, as evidenced by roundwood imports.

The current high levels of harvest and demand reflect well on the level of investment in supply chain management, processing technology and marketing by the processing sector, and the work of government bodies in both jurisdictions, in establishing and managing the forest resource. R&D and other supports provided by Enterprise Ireland and under the COFORD programme have also played an important role. The rapid increase in demand for wood fuels is also a significant factor.

A tight supply has meant that large sawlog is being imported for further processing, while wood fuels such as firewood and pellets are also being imported to meet the increasing levels of demand. While a level of imports is likely to continue, from a national economic perspective, and for climate change mitigation, the best source of wood for sawn timber, panels, fuel and other products is from Irish forests. In that regard, Government policy (*Forests, products and people*) is to invest in increasing the forest resource from the current 10.5% of the land area, to 18% by mid century, with one of the main drivers being to provide for a sustainable level of increase in wood supply.

Despite relatively high stumpage prices in recent years there are parcels in the public and private estates that are not being harvested. The second National Forest Inventory (NFI) completed in 2013 shows that 23% of areas have not been thinned on time, due to windthrow risk, economic factors and other reasons.

Since 2007, when detailed data began to be compiled, wood supply at the national level has been below the forecast level for Coillte forests, while the private sector harvest has, on average, been above forecast (Table 4). Since 2011 the national forecast has been based on a net realisable volume concept, which in the case of Coillte allows for an average harvesting loss of 9%, plus a chronic access reduction of 3% (on average) but excludes the potential impact of market conditions, operational costs, regulatory environmental impacts and certification issues on harvest levels. The difference between forecast volumes and harvest levels has been discussed in depth by the COFORD group, and in further discussions with Coillte, there are recommendations in this report that address this issue. New forecasts for the period for the period 2016-2035 will attempt to further categorise the likely production outturn, taking into account a range of constraints.

The particular challenge for the private sector is to mobilise the forecasted ten-fold increase in roundwood production between now and the end of the next decade, against a background of forecasted increases in demand. By 2020 it is estimated that roundwood demand on the island will exceed the current forecast of net realisable volume supply by 1.5 million cubic metres per annum (Annex 1, Table 2).

At a more fundamental level, a key issue that the COFORD Wood Mobilisation Group, has addressed, in consultation with stakeholders, is how to remove barriers to wood mobilisation, in order to enable forecast levels of wood production to be met and exceeded. In this context, it is important to point out that increasing harvest levels over and above the net realisable volume levels in the All Ireland forecast would not be at the expense of a sustainable level of wood production. In fact, the second NFI has shown that the annual harvest in the Republic is less than half of the wood increment at a national level.

The recommendations in the report range from investment in county road infrastructure (the most capital intensive but an absolute necessity), to information provision, training, and how taxable income from forestry needs to be averaged over a number of years to take account of the forest harvest cycle, as well as issues related to rights-of-way and access for forest blocks.

III - Specific wood mobilisation issues and associated recommendations

The COFORD WMG requested written submissions on wood mobilisation issues from a wide range of forest sector organisations. Submissions were received from:

Coillte
 ConFor (Northern Ireland Region)
 Forestry Services Ltd.
 The Forest Industry Transport Group (FITG)
 The Irish Farmers Association (IFA)
 The Irish Forestry and Forestry Products Association (IFFPA)
 The Irish Timber Council (ITC)
 The Northern Ireland Forest Service (NIFS)
 Teagasc

The submissions were collated and divided into a number of main issues, and were discussed and prioritised by the group into a series of recommendations.

Impacts of felling practices and rotation lengths on future assortment availability

Forest Service data show that there is trend for a proportion of stands to be felled well in advance of a 20-30% reduction in the age of maximum mean annual increment (which is generally assumed to be the case for forecasting purposes). While growers may be availing of high prices in the market, stands felled in this manner are unlikely to be providing the maximum financial return on a discounted cash flow or internal rate of return basis. Information needs to be provided to growers on the financial implications of rotation length. Reduced rotations will also reduce the level of sawlog-sized material coming available in the medium to longer term. There is a need to reflect this in the national roundwood forecasting system.

The possible impacts on future sawlog supply of not reaching the level of harvest foreseen in the net realisable forecast are discussed in Section IV.

Recommendation 1

The Forest Service and Teagasc, in collaboration with Coillte, grower organisations, private forestry managers, and the ITC to provide information to make growers aware of the possible impact of felling age on overall financial return (Priority 1).

Resource optimisation

A related issue in the context of rising demand is the need for suitable roundwood to find high added-value end use, principally in sawn wood production. Uses of suitable roundwood for other products may occur, for a variety of reasons, some related to log specification (see note of visit to Coillte sites and Recommendation 11). Overall, the issue needs further analysis and discussion, particularly in the context of the interpretation of production forecasts.

Recommendation 2

In conjunction with Recommendations 36 and 37, the second All Ireland Roundwood Production Forecast (2016-2035) to take account of ongoing changes in felling patterns and rotation lengths, following consultations with grower organisations, Coillte, Teagasc, ITC and private forestry managers (Priority 1).

Felling licences

Felling licence applications should be processed as rapidly as possible and not be a barrier to the mobilisation of roundwood. Linking of felling licence approval with the submission of long-term management plans, as envisaged by the COFORD Forest Management Planning Group, will be a significant step forward in facilitating good management practices and the mobilisation of roundwood. The validity period for forest management plans should cover all planned thinning operations up to clearfelling stage. The time taken from submission to approval of felling licence should be reported on annually.

Recommendation 3

The validity period for forest management plans for felling licence purposes should extend to all planned thinning operations up to clearfelling stage (Priority 1).

Recommendation 4

The Forest Service to report annually on the number of felling licences issued, broken down by thinning, clearfell and other, and the times taken for issuance of licences, in accordance with the provisions in the Forestry Bill (Priority 1).

Planning permission for forest entrances

Planning approval for forest road entrances needs to be streamlined, and should reside primarily with the Forest Service as the Department that is responsible for forestry regulation. The current discussions on this matter between line Departments and Local Authorities need to be brought to a satisfactory conclusion, as the uncertainty surrounding the issue has consequences for wood mobilisation.

Recommendation 5

Planning approval for forest road entrances to reside primarily with the Forest Service and the matter to be finalised as soon as possible (Priority 1).

Recommendation 6

An integrated permitting system to be developed by the Forest Service to cover forest road entrances, forest roads and associated felling (Priority 1).

Forest roads

Well-planned and engineered forest roads are essential for efficient and sustainable wood mobilisation, and so that plantations are thinned on time and roundwood production forecasts are achieved. Due to high capital costs and the relatively low value of early thinnings, grant aid for forest roads is vital. Once established the infrastructure will serve for future mobilisation. Technical aspects of roading grants to be examined include: availability of surface grade limestone and possible substitutes that might meet the required specifications, roading density, culverts, and the possibility of a standard for access tracks being introduced (which would not be of the same standard as forest roads as such).

Recommendation 7

Grant aid for the installation of new forest roads to facilitate first and subsequent thinnings to be continued in the new forestry programme (Priority 1).

Recommendation 8

Technical aspects of the roading specifications to be examined including regional differences, availability of surface grade limestone and possible alternatives, roading density, culverts, and the possibility of introducing a standard for forest tracks (Priority 3).

Provision of harvest information

The All Ireland Roundwood Production Forecast foresees a doubling of harvest in the Republic over the period up to 2028, to 6.4 million cubic metres, with almost all of the increase forecast to come from the private sector. Investment will be required to maintain and upgrade the county road infrastructure to bring this increase to market. Close engagement is required between relevant Local Authorities and all the elements of the forest sector, including the Forest Service, processors, Coillte, forest owner groups and forestry companies, so as to mobilise production potential. The Forest Industry Transport Group (FITG) fulfils a useful role in providing for interaction between the forest sector and the regulatory authorities regarding transport. However, there also needs to be sustained and formal engagement between the Forest Service and Local Authorities on potential future levels of harvest. This should take the form of providing GIS-based information on the location of all forest areas, as well as county level forecasts of wood production, as they become available from the national roundwood production forecast. This work should enable better planning, and support the case to central government for investment in county road infrastructure.

Recommendation 9

Forest Service to provide GIS-based information on forest location as well as forecasts of potential wood production at a county level to relevant Local Authorities on 5-year cycle, and to work in partnership with the local government and central government systems on targeting investment in the county road system (Priority 2).

Coillte resource

A wood resource within the Coillte estate is not being mobilised due to high roundwood extraction costs, access issues, lack of markets for certain species and environmental constraints. Some of these stands contain volumes of sawlog material. Consideration should be given to offering some of these stands for sale such that it would enable interested parties to invest in cable and related systems and recover costs over a number of years, rather than having to rely on individual sales transactions.

Coillte also has a number of lodgepole pine sites where there is potential to recover small sawlog. In order to maximise small sawlog recovery, short lengths of 2.5 m would need to be recovered, with the material moved quickly off-site following harvest and processed.

Recommendation 10

Coillte to offer for public sale groups of sites with wood mobilisation constraints related to access and/or harvest, or with environmental or other constraints, in partnership with interested parties so as facilitate capital investment and payback. This to include work that could extend over a number of years (Priority 1).

Recommendation 11

In the context of constrained supply and high fibre prices, Coillte and the processing sector to work together to investigate the potential of exploiting lodgepole pine stands for small sawlog-sized material (Priority 2).

Road haulage and transport technology

Coillte has been engaged for a number of years with Local Authorities in the development and implementation of agreed haulage routes. These are designed to avoid and reduce the risk of road damage. Practice in Northern Ireland has not been to agree/designate routes but to recommend certain routes. The recently publication by the Forest Industry Transport Group (FITG) *Managing Timber Transport - Good Practice Guide* proposes four categories of routes ranging from unrestricted to excluded (“routes currently unsuitable for timber haulage vehicles, unless substantial engineering works are carried out”).

The rise in private forest establishment over the past three decades and the consequent increase in the level of harvesting bring the issues of recommending/designating haulage routes into sharper focus. Privately-owned forests have an average size of 8 ha, considerably smaller than the average Coillte block, and are more dispersed throughout the countryside.

The CWMG has considered the concept of designated roundwood haulage routes in depth, particularly in relation to the private sector forest resource. While it may have some merit, how it could be applied to private sector forests, given their disperse nature and small size is open to question. Nevertheless, the CWMG group is supportive of the pilot scale work on preferred routes that is being undertaken as part of the work of the Forest Industry Transport Group (FITG). Involvement and buy-in from grower organisations in this work is of critical importance. However, the CWMG is of the view that the greater priority should be given to:

- ongoing investment in upgrading the country road network.
- the use and further development of:
 - variable tyre pressure (VTP) systems².
 - haulage of reduced loads to suitable roadheads.
 - full application of GIS tracking technology in the timber haulage fleet to secure more effective timber mobilisation.

In any event, prior consultation between stakeholders and Local Authorities will be critical to the introduction and operation of preferred routes.

The CWMG welcomes the FITG publication: *Managing Timber Transport - Good Practice Guide* and recognises the work undertaken by FITG on behalf of stakeholders.

Recommendation 12

Continued and increased investment to be made by Local Authorities in the maintenance and upgrading of the county road infrastructure to enable wood mobilisation from private sector and public forests (Priority 1).

Recommendation 13

The use of weight restrictions on roads needs to be addressed at a strategic and road maintenance and upgrade level, in the context of forest location and future wood mobilisation, so that investment can be directed to areas where there are likely to be increases in harvesting. Restrictions, where imposed, to be based on an agreed objective methodology, to be developed between the regulatory authorities and stakeholders (Priority 1).

Recommendation 14

The deployment of variable tyre pressure systems (VTP) on timber haulage trucks in areas that are severely affected by the strength of local public road infrastructure should be encouraged by the haulage sector and stakeholders and supported through grant-aid where appropriate (Priority 3).

2. It is important to avoid a blanket requirement for VTP systems as they are costly, and are not necessary in certain regions.

Information and advice relevant to private woodland owners and others on wood mobilisation

Forest owner groups have an important role to play in wood mobilisation and there is a case that their work should be part funded (assuming an application and assessment process) as part of the national forestry programme.

In many European countries, a significant number of private forest owners are members of forest owner groups. Some forest owners are already members of the IFA, ITGA and their local Producer Group. They may also go to forestry events run by Teagasc and have periodic contact with the company that planted their land. Adding an additional structure of Knowledge Transfer Groups, as in the current draft Forestry Programme 2015-2020, could lead to duplication of effort. The group feels it would be better to have a single structure, whereby Knowledge Transfer Groups would be part of Producer Groups which would then work with National Grower Organisations..

Recommendation 15

Knowledge transfer groups to be set up as part of Producer Groups in order to develop efficient and cost-effective systems (Priority 3).

Price levels

The CWMG view is that some forest owners are unaware of price levels for roundwood and the different assortments, and that this acts as a barrier to sales and wood mobilisation. The group is aware that the Irish Timber Growers Association, Teagasc and the Forest Service are actively addressing this issue through information days and the provision of information on prices and related matters. The group is of the view that enhanced availability and publication of up-to-date and accurate information on roundwood assortment and product prices at national and regional levels will aid wood mobilisation. Its view is that the compilation of such information at the national level should be explored and implemented on an independent basis. In addition, information on harvesting and haulage rates would provide for greater transparency in pricing.

Management interventions

A proportion of forest owners are not aware of the need for management interventions and their strong impact on the return on investment. Teagasc is addressing this issue by providing a wide range of information, arranging one-to-one meetings with forest owners, as well as forestry practice field days and workshops. The Irish Timber Growers Association, private forestry companies and Coillte are also active in this area. The Teagasc work needs to continue, but should be particularly targeted at owners who have not attended field days or workshops. The group was of the view that consideration should be given to having attendance at a basic thinning/management course 8-10 years after establishment as a condition of continued receipt of annual premiums.

There is concern that some first thinning operations may be removing only larger trees (high-grading), which goes against good forestry practice. Such instances have the potential to result in knock-on effects on growers' profitability and the quality of their forests. The occurrence of this practice needs to be determined and reported by the Forest Service on a periodic basis. Formal forest management plans will help to address this issue.

Sales methods

Sawmills operate in an environment where sawnwood is sold across a range of lengths and other dimensions according to demand. They need to have the flexibility to match their customers' demand to the availability of assortments in the forest. It may well be that prices paid to the producer reflect the flexibility offered by the method of sale, for example, whether the material is sold standing or at roadside, or if a biomass assortment is also to be

harvested. Many of these issues can be addressed by providing the type of price information already referred to, and this should include prices for standing and roadside sales. The Timber Sales and Dispatch System and the template Master Tree Sales Agreement, both developed by ITGA, are designed to facilitate roundwood sales from private forests.

Recommendation 16

Grant aid support for forest producer groups and National Grower Organisations to be considered under the new forestry programme, 2014-20 (Priority 2).

Recommendation 17

Teagasc to continue to provide forestry practice information and advice to the private forest sector, including produce groups (Priority 1).

Recommendation 18

Taking into account the ITGA Private Roundwood Price database an independent national roundwood and product assortment price information system to be explored by Teagasc, farmer and grower groups, Coillte, the Irish Timber Council (ITC) and the Forest Service. The system to provide information on both standing and roadside prices and preferably to have a regional basis (Priority 1).

Recommendation 19

The Forest Service to give consideration to linking eligibility for premium payments to an attendance at an information event on forest management and roundwood sales (Priority 3).

Recommendation 20

The Forest Service to periodically review and report on thinning control, and the level and quality of thinning in plantations (Priority 2).

Training

The group is of the view that provision of a well-organised and structured training programme for harvesting machine operators is needed at national level in order to support high quality thinning operations and aid in the mobilisation of roundwood. It makes the following recommendations in that regard.

Recommendation 21

Coillte to investigate how trainee machine operators could work on Coillte lands in order to qualify for a City & Guilds Land Based Services qualification (Priority 1).

Recommendation 22

Teagasc to establish a national forest harvesting operation skills register, for example, FETAC and NPTC, make it available and promote its use in the sector, so as to enable skills to be matched to particular operations (Priority 2).

Recommendation 23

Teagasc to coordinate and promote the development of national capacity to train and certify harvesting machine operators in machine operation and in good silvicultural and environmental practices (Priority 2).

Taxation treatment of forest income

Given the long timeframe of forestry and the periodic nature of income from forests, the High Earner's income restriction and its application to income from woodlands has a negative and detrimental effect on wood mobility. This tax provision inadvertently impacts on ordinary forest owners who are typically not high net worth individuals, and does not take into account the unique nature of a growing forest which realises most of its revenue at the end of the growing cycle (in the region of 30-40 years and sometimes significantly longer). In effect many years of accrued income is taxed as a single year's income, not acknowledging the long-term nature of forestry and the fact that it does not produce an annual income.

The existing provision also has a negative effect on jobs and economic activity, as growers seek to reduce their taxation burden by reducing the size of individual sales, hence restricting the flow of timber onto the market. To address this anomaly the Irish Timber Growers Association (ITGA) has suggested that forest income should be excluded from the High Earner's income restriction, and has specifically called for the reference to S.232 to be removed from Schedule 25B of the Taxes Consolidated Act (as amended). An alternative, averaging of income, already available to farmers for certain agricultural activities, should be extended to forestry, but for a longer timeframe for the reasons outlined. It seems contradictory that many farmers can use averaging for certain activities, but not for forestry income, even where the two operations can run side-by-side on the same farm.

Recommendation 24

Forest income to be excluded from the High Earner's income restriction, and the reference to S.232 be removed from Schedule 25B of the Taxes Consolidated Act (as amended) (Priority 1).

Recommendation 25

Averaging of income for taxation purposes, already available to farmers for certain agricultural activities, to be extended to forestry, but for a longer timeframe (Priority 1).

Voluntary forest certification and chain of custody

Few (estimated to be less than 1000 ha in total) privately owned forests are certified under the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC). As the level of supply from the private sector increases, the lack of certification is likely to become a barrier to wood mobilisation. Costs of voluntary forest certification are also an issue for private forest owners, which certification bodies need to be conscious of when setting charges. It also needs to be borne in mind that all private forests have been established subject to Forest Service environmental guidelines and procedures, and are subject to forest legislation, including a replanting obligation. In addition, the new EU Timber Regulation (EUTR) establishes a due diligence onus on those placing timber on the market for the first time to show they have exercised due diligence in establishing that the timber has been legally harvested.

Forest and group certification will be facilitated through the implementation of the proposed new forest management planning system being developed by the COFORD Forest Management Planning Group, and specific considerations related to voluntary forest certification have been incorporated in the plan templates.

Recommendation 26

The Forest Service to implement the findings of the COFORD Forest Management Planning Group, and in particular those related to facilitating voluntary forest certification (Priority 2).

Environmental designations and procedures

Environmental designations and procedures which are legally based must be complied with by a responsible forest sector. Compliance requirements can vary at a local level and there can be delays in responses from regulators leading to inefficiencies and added costs in harvesting, as well as reductions in wood mobilisation. In addition, proper advance consultation is needed for any proposed new regulations. Specifically the group has the following recommendations:

Recommendation 27

The threat response plan for the Hen Harrier Red Areas needs to be advanced and concluded by the National Parks and Wildlife Service (NPWS) to provide a balanced approach to forest operations and habitat and species protection (Priority 2).

Recommendation 28

The system for the approval of aerial fertilisation of forest crops to be reviewed by the Forest Service, so as to support long term wood production goals and to facilitate wood supply mobilisation (Priority 2).

Recommendation 29

The referral procedures between Forest Service, NPWS, Local Authorities, Fisheries authorities and other designated bodies to be reviewed and resources increased in order to minimise delays from referrals. Time periods for processing applications to be recorded and reported (Priority 1).

Recommendation 30

Proposed designation of new areas or changes in the boundaries of existing Natura 2000 sites or other areas that require referral to statutory authorities, and new regulations arising from the adoption or implementation of national legislation to be subject to economic impact assessment in accordance with Regulatory Impact Assessment (Priority 1).

Rights-of-way

Restrictions due to right of way (ROW) issues can prevent wood mobilisation – it is a serious issues in certain instances. Specific issues include:

- ROW may not be checked when planning approval is given resulting in building on the ROW.
- Lack of registration of ROWs (although the group understands that legislation requires that ROWs be registered by December 2021).

Placement of bell-mouth entrances.

- Need for an independent arbiter or dialogue with land owners or farming groups to facilitate good practice.

Recommendation 31

Farmer groups and forest owners to establish a binding code of practice related to rights-of-way and shared roads (Priority 2).

Supply and demand side issues and measures

Historic and projected future harvest levels

In the half century since 1960, the level of wood harvest in the Republic Ireland has increased 10-fold, reaching over 3 million cubic metres in 2013. Roundwood production is forecast to double by the end of the next decade to reach 6.4 million cubic metres per annum in the Republic, and close to 7 million cubic metres on the island as a whole (Figure 1).

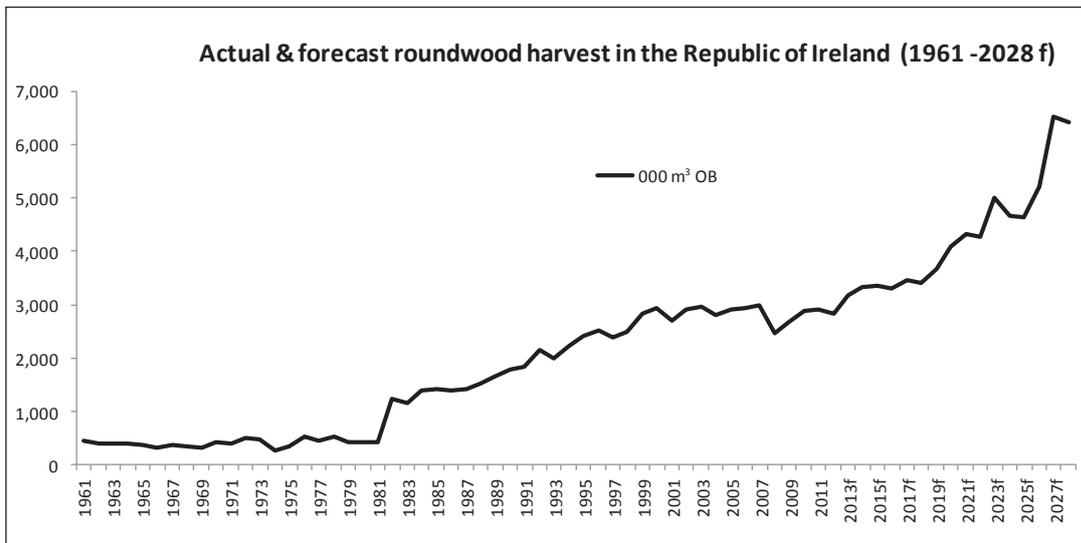


Figure 1: Actual and forecast roundwood harvest 1961 to 2028 (data are cubic metres of roundwood overbark, historic data are from national and Food and Agriculture Organisation (UN) time series, projected data are from the *All Ireland Roundwood Production Forecast 2011-2028* (Phillips 2011)).

Almost all of the increase in roundwood harvest to date stems from state afforestation undertaken in the decades since the 1920s. Over the past three decades, the private sector in the Republic has been the dominant player in establishing new forests, so that today forest ownership is almost half state and half private (Table 1). This has implications for wood mobilisation, as outlined in the discussion and recommendations in Section III.

Table 1: Forest ownership in the Republic of Ireland 2012 (data source: National Forest Inventory 2013, Forest Service).

Ownership	ha	%
Public	395,760	54.1
Private	335,900	45.9
Total	731,650	100.0

Future harvest will reflect the evolving ownership pattern; the All Ireland roundwood production forecast to 2028 indicates that by the end of the next decade harvest is expected to be 50:50 state:private. Mobilising over 3 million cubic metres of roundwood annually from the private estate, an almost 10-fold increase on current levels, as well as continuing the state harvest at current and expanded levels, will, as outlined in Section III, require a major concerted effort by the forest sector, state and private, as well as the involvement of Local Authorities, public bodies and other stakeholders.

Projected future roundwood demand

The second objective of the CWMG was to further understand and assess ways to address projected shortfalls in wood fibre supply on the island. As part of the analysis, the COFORD estimate of roundwood demand to 2020³ was updated. Future demand for roundwood by the sawmill and boardmill forest products sector was estimated by survey of all large users on the island. Forest-based biomass demand for energy purposes (for both process energy in the sector and for energy generation elsewhere) in 2020 was estimated using data provided by the Sustainable Energy Authority of Ireland (SEAI) on the projected demand needed to meet the targets in the National Renewable Energy Plan (NREAP). Data for Northern Ireland were unchanged from the previous estimate.

The updated demand data are presented in Table 5 in Annex 1, together with an estimated supply/demand balance for 2014 and 2020. The methodologies used to estimate future supply are outlined in Annex 1, Tables 2-4 and in the accompanying text.

Overall net demand for roundwood/wood fibre on the island of Ireland is forecast to increase from 4.60 million cubic metres in 2014 to 6.41 million cubic metres by 2020 (Annex 1, Table 5), an annualised rate of increase of 6%.

Boardmilling and sawmilling demand

Boardmill demand (including the use of sawmill residues) is forecast to increase from 1.40 million cubic metres in 2014 to 1.60 million cubic metres by 2020, an increase of some 14% overall or about 2.5% year-on-year. Sawmilling demand is forecast to rise at a substantially faster rate, from 2.67 million cubic metres in 2014 to 3.28 million cubic metres by 2020, an increase of 0.61 million cubic metres, some 23% or 3.5% year-on-year (Annex 1, Table 2). The rates of growth in demand for raw material are directly linked to the expected growth in product demand. The higher rate of projected demand for the sawmilling sector accords with the “Recovery” scenario prediction of GDP growth of 4% over the period 2015-2020, outlined in the ESRI medium term economic outlook⁴.

About 0.3 million cubic metres of the large sawlog category (20 cm+ top diameter) is currently imported onto the island on an annual basis; this could increase to 0.9 million cubic metres by 2030 (Annex 1 Table 5) based on the forecast level of demand and growth in the level of supply .

3. All Ireland Roundwood Demand Forecast 2011-2020. COFORD, Dublin.

4. Fitzgerald, J. and Kearney, I. (Eds). 2013. *Medium-Term Review, 2013-2020*. Number 12. ESRI, Dublin.

Forest-based biomass for energy demand

Linked to the issue of boardmilling and sawmilling demand is the use and availability of forest-based biomass on the island. It is the predominant component of the rise in wood fibre demand, in both the Republic and Northern Ireland, mainly as a result of current policies such as the National Renewable Energy Action Plan⁵ (NREAP) in the Republic, and related measures, such as REFIT and the carbon tax, and the renewable heat incentive in Northern Ireland.

Most of the increase in forest-based biomass demand to 2020 in the Republic is comprised of the aggregate demand for Combined Heat & Power (CHP), heat only, and for co-firing with peat. To meet the stated government targets for renewable energy by 2020, the gross demand for forest-based biomass for energy use on the island increases from 1.91 million m³ in 2014 to 3.26 million m³ in 2020, an increase of 170%, or a compound annual rate of increase of just under 10% year-on-year. Such a large increase in projected demand for forest-based biomass will require the implementation of the recommendations in this report and specifically a significant investment in the sectoral supply chain, as covered in a number of recommendations in Section III. Notwithstanding implementation of these recommendations, biomass imports will still be required.

In addition the group is of the view that there is good scope⁶ to sustainably increase the level of harvest, by increasing the intensity of harvesting (for example by cutting to tip and by harvesting branches during thinning) and by collecting harvesting residues at clearfelling on fertile, high yielding sites, following needle fall. Currently Coillte harvests c 30,000 t/annum of harvest residues (excluding stumps) and this could expand to 100,000 t by 2017-2018 (including stump harvesting⁷).

Recommendation 32

The Forest Service, Coillte, Teagasc and the forest sector at large to stimulate increased intensity of harvesting at thinning and clearfelling stages through the development of good practice guidance, dissemination of research findings, and increasing the use of full tree harvesting (including tops and branches) and recovery of final harvesting residues (Priority 2).

The proposed new forestry for fibre measure in the Forestry Programme 2015-2020 will bring additional fibre to market in the period after 2020.

Recommendation 33

The Department of Agriculture, Food and the Marine to implement the forestry for fibre measure in the Forestry Programme 2015-2020, in order to provide for additional forest-based biomass (Priority 2).

Demand side incentives such as the REFIT tariff, the carbon tax and the proposed renewable heat incentive also have a positive role in stimulating demand and bringing additional volumes of roundwood and residues to market. These incentives have the effect of making early thinning interventions more economic, and bring forward the production of sawlog-sized material. It has also to be recognised that small sized roundwood suitable for energy uses is also the main raw material for board manufacture, and as well that sawmilling technology is constantly evolving and is capable of utilising smaller sized material than was traditionally the case. In this context, it is important that new demand side measures are carefully designed and set at a level that does not over incentivise particular end uses, and competition is not distorted.

5. <http://www.dcenr.gov.ie/NR/rdonlyres/C71495BB-DB3C-4FE9-A725-0C094FE19BCA/0/2010NREAP.pdf>.

6. See Kent, T., Kofman, P. and Coates, E. 2011. *Harvesting wood for energy. Cost-effective woodfuel supply chains in Irish forestry*. COFORD, Dublin.

7. Harvesting of additional biomass needs to be carefully planned and regulated, for example, by delaying residue harvesting until needles have been shed on site, so as to avoid nutrient depletion on poor sites and soil damage from harvesting machinery.

Recommendation 34

Demand side measures related to renewables, such as feed-in tariffs, the carbon tax and other measures to be updated as appropriate, in order to provide balanced incentives for increased wood mobilisation (Priority 1)

Recommendation 35

In conjunction with Recommendation 34, market impacts and wood paying capacity implications to be fully assessed by relevant government departments and agencies before the introduction or updating of demand side measures related to forest-based biomass (Priority 1)

Derivation of demand data

Further information on the derivation of demand levels for forest-based biomass for both the Republic and Northern Ireland is provided below.

Republic of Ireland (RoI)

Demand for wood biomass energy to 2020 was estimated by the Sustainable Energy Authority of Ireland (SEAI)⁸ as follows:

- By 2015, it is anticipated that 30% of the feedstock requirement of Edenderry Power Ltd⁹ will be from biomass, for co-firing with milled peat. The actual breakdown of fuel supplied will depend on market prices and on local supplies of forest-based biomass¹⁰.
- It is assumed that the renewable heat target of 12% RES-H will be met in 2020¹¹.
- By 2020, it is assumed that 80% of the heat which is provided from Renewable Energy Sources (RES H) will be supplied from biomass sources, including wood biomass and tallow/Meat & Bone Meal (MBM) from rendering plants.

The expected year-on-year demand growth for forest-based biomass for energy generation in the Republic of Ireland over the period 2014-2020 is shown in Table 2.

Table 2: Estimated annual demand for wood biomass energy required to meet renewable targets in the Republic of Ireland (2014-2020)¹².

Year	000 m ³ OB
2014	994
2015	1,125
2016	1,167
2017	1,331
2018	1,338
2019	1,530
2020	1,871

8. www.seai.ie

9. <http://www.edenderrypower.ie/>

10. This is taken as roundwood, forest product residues and wood chipped in forest.

11. http://www.seai.ie/Publications/Statistics_Publications/EPSSU_Publications/Renewable-Energy-in-Ireland-2012.pdf

12. Source: Sustainable Energy Authority of Ireland; www.seai.ie

Northern Ireland

Northern Ireland wood biomass energy targets to 2020 were provided by Action Renewables (Northern Ireland)¹³ and have not changed¹⁴ since the publication of the COFORD *All Ireland Roundwood Demand Forecast 2011-2020*¹⁵. Heat and power output is estimated to be split 65:35 heat:electrical; co-firing is not envisaged¹⁶. Expected demand for wood-biomass for energy production in Northern Ireland in 2020 is shown in Table 3. Most of the expected demand increase is likely to be met by a significant component of post-consumer recovered wood (PCRW).

Table 3: Estimated demand for wood biomass energy required to meet renewable targets in Northern Ireland (2020)¹⁷.

	Unit	2020
Combined heat & power (CHP)		
Required energy output	GJ	3,350,000
Roundwood equivalent demand	m ³	485,507
Heat only		
Required energy output	GJ	6,225,000
Roundwood equivalent demand	m ³	902,174
Co-firing		
Required energy output	GJ	0
Roundwood equivalent demand	m ³	0
Total demand		
Required energy output	GJ	9,575,000
Roundwood equivalent demand	m ³	1,387,681

13. www.actionrenewables.org

14. Source: Personal communication, Action Renewables (Northern Ireland); <http://www.actionrenewables.co.uk/>

15. http://www.coford.ie/media/coford/content/publications/projectreports/roundwooddemand2011/COFORD_demand01Mar11.pdf

16. Source: drima market research study (2009 & 2014).

17. Energy content/wood volume is taken as 6.9 GJ per m³

IV - Wood harvest in relation to forecasted levels

In updating information on actual harvest v forecast it is important to point out that forecasted roundwood harvest for Coillte and for the RoI private sector for the years 2010-2013 are based on the net realisable volume (NRV) methodology, which differs from the one used for the 2007-2009 period. The 2011-2028 forecast adjusts gross standing volume data for harvest losses and severe inaccessibility, but not for minor access, environment regulation issues, costs or market-related issues. It is based on a parcel-by-parcel aggregation for the Coillte estate. A similar approach was used for the private estate. A full description of the methodology is in the forecast publication¹⁸. A similar approach was used for the 2010 forecast. Harvest data for 2010-2013 were taken from the Joint Forest Sector Questionnaire, which is compiled on an annual basis by the Forest Service and published annually as the COFORD Woodflow. These factors need to be borne in mind when interpreting trends in the composite Table 1 (a and b), which is presented in Annex 1.

Overall, the production forecast did not change to any appreciable extent over the 7-year period (2007-2013), averaging at around 3.7 million cubic metres per year (Annex 1, Table 1) in total for the island. Actual harvest varied considerably from year to year, with a corresponding difference between forecast and actual levels of harvest, which was greatest (over 0.6 million cubic metres) in 2008 and 2009. Since 2010, when NRV-type forecasts were introduced in the Republic, the difference between the NRV forecast and actual harvest has been 11%, and has remained between 0.20-0.35 million cubic metres per annum.

Roundwood demand fell off in 2007 and 2008 due the building recession and the financial crisis. It has recovered somewhat in recent years, particularly as sawmills have successfully targeted the GB market.

Republic of Ireland

Closer examination of the forecast for most recent 4-year period (2010-2013) for which data are available (Table 4) for the Republic of Ireland shows that the Coillte harvest reached 89% of the net realisable volume (or 11% below NRV forecast) or a difference of 1.21 million cubic metres over the period. The private sector harvest was, on average, 9% above forecast, or 0.13 million cubic metres over the period, albeit with large inter-annual variation in the harvest level.

The overall gap in harvest against forecast is not desirable for planning, or for investment in roundwood processing. The situation can only come into sharper focus as demand is forecast to further expand to 2020 (Annex 1, Table 5).

There is good evidence that the larger-than-forecast harvests in the private sector in 2011 and 2013 in the Republic were linked to the higher-than-average prices prevailing for parts of the two years. Experience in other European countries tends to support the conclusion that private sector harvest closely follows roundwood prices. However, longer time series will be required to develop price/demand models and elasticities.

Coillte and third parties¹⁹ harvest in 2013 (Table 4) was proportionately higher than in the earlier years, which may also be a reflection of high stumpage prices in 2013. Part of the explanation for the difference for Coillte (Table 4) may be that in addition to the actual volumes shown, over the period Coillte placed previously unoffered volume on the market, which went unsold for a number of reasons, including access. In addition a further volume included in the forecast is not placed on the market each year because it would be “cash negative” in terms of harvest, roading and restock costs versus the potential income to be gained.

The harvest against forecast for the Republic of Ireland was examined in depth by the Working Group and in discussions with Coillte. This included a field trip to Coillte stands in the Westport area, where examples of access constraints (planning for forest road entrances and environmental impacts) and low stumpage values were discussed (see Recommendations 10 and 11 and associated text).

In the overall context of harvesting levels and the NRV forecast, the implications of over- and under-achievement on future sawlog outturns needs further consideration in the context of Recommendations 1 and 2.

18. *All Ireland Roundwood Production Forecast (2011-2028)* http://www.coford.ie/media/coford/content/publications/projectreports/forecast_31Jan11.pdf

19. Coillte data includes third parties' harvest (see Table 4).

Northern Ireland

Over the 4-year period, 2010-2013 actual harvest levels from NI Forest Service forests averaged 91% of forecast (Table 5). Harvest scheduled and completed during this period, and particularly in 2012, was less than forecast figures for wood availability. Forecast figures for wood availability did not attempt to anticipate on-going forest management planning decisions required to address factors of a declining wood fibre supply in the longer term, economic and environmental considerations.

Table 4: Actual v forecast roundwood harvest by Coillte and the private sector in the Republic of Ireland (2010-2013)^{20,21}.

	2010				2011				2012				2013				Total difference (actual - forecast 2010-2013) 000 m ³ OB	Weighted average (actual/forecast 2010-2013) %	
	A	F	D	A/F															
	000 m ³ OB				000 m ³ OB				000 m ³ OB				000 m ³ OB						%
Private ²²	387	393	-6	98	460	370	90	124	354	384	-30	92	448	369	79	121	133	109	
Coillte & 3rd parties ²³	2,517	2,780	-263	91	2,492	2,979	-487	84	2,485	2,737	-252	91	2,588	2,799	-211	92	-1,213	89	
Total	2,904	3,173	-269	91	2,952	3,349	-397	88	2,839	3,121	-282	91	3,036	3,168	-132	96	-1,080	92	

Table 5: Forecast vs. actual roundwood harvest by harvest type in Northern Ireland (2010-2012)^{24, 25, 26, 27, 28}, including larch brought forward for harvest.

	2010				2011				2012				2013				Total difference (actual - forecast 2010-2013) 000 m ³ OB	Weighted average (actual/forecast 2010-2013) %
	A	F	D	%	A	F	D	%	A	F	D	%	A	F	D	%		
	000 m ³ OB				000 m ³ OB				000 m ³ OB				000 m ³ OB					
Private	66	19	47	347	68	19	49	358	60	19	41	316	30	19	11	158	148	295
NIFS	450	427	23	105	473	427	46	111	428	546	-118	78	422	546	-124	77	-173	91
Total	516	446	70	116	541	446	95	121	488	565	-77	86	452	565	-113	80	-25	99

20. All forecasts in this table are Net Realizable Volume (NRV), data source: http://www.coford.ie/media/coford/content/publications/projectreports/forecast_31Jan11.pdf

21. The actual roundwood harvest includes firewood & hardwood.

22. This harvest includes the roundwood harvest from forests owned by IForUT and that from all other private forests.

23. The 'Coillte and 3rd party harvest' is composed of roundwood harvest from Coillte lands where the decision to harvest is under the control of Coillte or third parties such as IForUT, Presscient, etc.

24. All forecast data are net of harvesting losses.

25. Firewood and hardwood is included.

26. In 2010 and 2011, 30,000 m³ of infected larch was harvested by the NIFS. This was in addition to normal harvests. This harvest is included in the analysis shown below.

27. The business plan of the NIFS sees 400,000 m³ of roundwood being harvested on an annual basis.

28. The volume of roundwood from 7 cm to tip is excluded.

Supply/demand - synthesis and conclusions

Based on the supply analysis in Annex 1 overall wood availability in 2014 is estimated as 3.62 million cubic metres in 2014, increasing to 4.31 million cubic metres by 2020. Table 5 in Annex 1 shows that expected demand will exceed supply by a 0.97 million cubic metres in 2014, with the gap expected to more than double to 2.10 million cubic metres by 2020.

The general conclusion is that rapid and effective implementation of the wood mobilisation recommendations in this report will be needed to avoid a high level of importation of biomass fibre for energy needs in the period up to 2020 (in the region of 1.2 million cubic metres per annum), and sawlog (up to 0.9 million cubic metres). While a level of sawlog imports (mostly from Scotland) is already taking place, firewood, pellets and some wood chip are being imported, and it is likely that future demand for wood fibre in Europe will drive the prices of these commodities higher (see Wood demand at the European level).

The analysis points to continuing and increased levels of competition for roundwood in the period up to 2020. As discussed earlier in the report much of the increase in demand will come from wood energy, driven by national and EU policies and a likelihood that fossil fuel prices will increase in the period up to 2020 and beyond. Under its 'Central' scenarios, the Department of Energy and Climate Change (DECC) in GB projects an increase in the price of natural gas from 66.7 in 2014 to 73.8 pence sterling/therm in 2020, and an increase in oil price from 111.3 in 2014 to 119.7 US \$/barrel in 2020²⁹.

It must also be pointed out that apart from price considerations there is an imperative for governments to address security of energy supply, and to develop and implement policies and measures that will provide benefits across the economy, and promote indigenous sector³⁰.

Wood demand at the European level

A recent European Commission study has concluded that:

- the EU annual wood harvest should grow from 436 to 454 million cubic metres by 2016, but further increase will be constrained by less than 75% of the forest area being legally available and owners' limitations on the rest;
- by 2016 a 63 million cubic metres wood raw material supply shortfall will exist for bio-energy. This equates to 16 % of the roundwood going to wood-processing or 9.6 % of their total wood raw material supplies. Without EU and MS remedial measures, imports of wood, e.g. pellets from N. America, Russia et al. will increase significantly.

Also in the context of wood fibre demand, the draft EU Forest Strategy states: "However, according to Member States' projections under Land Use, Land-Use Change and Forestry (LULUCF), harvest rates are expected to increase by around 30% by 2020 as compared to 2010.³¹

Furthermore, the European Forest Sector Outlook Study II (2010-2030) from the UNECE/FAO³² states in its conclusions:

If no major policies or strategies are changed in the forest sector and trends outside it follow the lines described by the ... scenario, consumption of forest products and wood energy will grow steadily and wood supply will expand to meet this demand ... All components of supply will have to expand, especially harvest residues.

All of the outlook studies in Europe therefore point in the same direction – increased demand for wood fibre and the need for increased mobilisation rates to meet this demand, with increased levels of imports of wood for energy and other uses likely to arise. Projections in the outlook studies also indicate that competition for wood

29. DECC Fossil Fuel Price Projections. 2013. Department of Energy and Climate Change, London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/212521/130718_decc-fossil-fuel-price-projections.pdf

30. The supply/demand gap in Northern Ireland is largely driven by the demand for wood-biomass energy (Table 2). It is expected that this gap will be filled by imports of post consumer recovered wood (PCRW) from the UK (Northern Ireland Forest Service personal communication).

31. Based on the EU's projected forest management reference levels submitted to UNFCCC CMP6.

32. European Forest Sector Outlook Study II (2010-2030). UNECE/FAO, Geneva (2010). <http://www.uncece.org/fileadmin/DAM/timber/publications/sp-28.pdf>

resources is likely to make imports of roundwood and energy wood more expensive, and supports the need for the implementation of the recommendations outlined in this report.

Implications for roundwood production forecasting

It is essential that the assumptions used to derive forecast volumes for both the private sector and Coillte are revisited for the next forecasting period (2016-2035). This work is not only to provide a greater level of assurance when planning investment in processing infrastructure, but also to quantify the amounts and location of roundwood where the measures outlined in Recommendations 9 and 10 should be applied, and to enable a better judgement to be made of the impact of mobilisation measures. As part of this process, the level of harvest against forecast for both the private sector and Coillte will need to be monitored and reported annually by the Forest Service and COFORD for the duration of the current forecast (end 2015).

Recommendation 36

The assumptions behind net realisable volume concept for both the private sector and Coillte in the development of the 2016-2035 forecast to be reviewed, in order to refine potential harvest levels (Priority 1).

Forecast updating cycle and monitoring of harvest against forecast

At its first meeting the group decided it would be preferable to have the all Island roundwood production forecast updated on a 5-year cycle, to coincide with Coillte and Northern Ireland production forecasting cycles.

Recommendation 37

The all Ireland roundwood production forecast to be updated on a 5-year cycle, the second forecast to cover the period 2016-2035, incorporating results of research on access, site productivity and information on changes in forest area (Priority 1).

Recommendation 38

In conjunction with the update of the forecast, the stakeholder group to clarify the overall purpose of the national forecast and associated definitions and how to disseminate the forecast through web-based interfaces, and provide better estimates of the forest-based biomass resource potentially available for energy purposes (Priority 1).

Recommendation 39

Forest Service to continue the annual determination of harvest through the COFORD Woodflow and to continue to report on harvest in relation to forecast levels and to examine ways to improve the understanding and utility of national forecasts (Priority 1).

V - Research and development, and innovation

The COFORD Forest Research Ireland report identifies a number of research topics related to wood mobilisation. This research needs both industry and third level involvement, and to be part of an innovation-led and cost competitive supply-chain, so it results in outputs that can be taken up in support of wood mobilisation.

Research currently underway on mobilisation in the SIMWOOD project, which is being funded under the EU's 7th RTD Framework Programme, and in which Ireland is a partner, is aiming to provide practical tools in support of wood mobilisation (Annex 2).

Recommendation 40

Continue state and private investment in R&D and demonstration related to thinning and wood mobilisation generally (Priority 1).

Annex 1: The comparison of actual volume harvested to forecasted net volume, and processing outturn

The objective in constructing Tables 1 (a and b) was to update Table 1 in the COFORD *All Ireland Roundwood Demand* publication³³, which covered the period 2007-2009 (Table 1 (a)). Table 1 (b) covers the period 2010-2013.

Annex 1, Table 1 (a): Actual volume harvested and forecasted net volume, and estimated processing outturn (2007-2009)^{34, 35, 36, 37, 38}.

Top diameter category	2007			2008			2009		
	ROI	NI	Total	ROI	NI	Total	ROI	NI	Total
cm	000 m ³ OB								
7-13	650	76	726	667	76	743	779	76	855
14-19	970	135	1,105	929	135	1,064	966	135	1,101
20 +	1,683	234	1,917	1,627	234	1,861	1,564	234	1,798
(a) Forecasted net volume	3,303	445	3,748	3,223	445	3,668	3,309	445	3,754
(b) Harvested volume³⁹	3,112	456	3,568	2,569	457	3,026	2,671	467	3,138
Difference (a) - (b)	191	-11	180	654	-12	642	638	-22	616

Processing outturn ^{40, 41}	%								
Pulpwood	29.6	20.8	27.7	32.0	20.7	29.6	30.2	20.8	28.0
Stakewood	6.0	17.2	8.5	3.0	17.3	6.1	3.6	17.3	6.8
Sawlog	64.4	62.0	63.9	65.0	61.9	64.3	66.2	61.9	65.2
Total⁴²	100.0								

33. http://www.coford.ie/media/coford/content/publications/projectreports/forecast_31Jan11.pdf

34. Volume from 7 cm to tip is excluded.

35. Forecast volumes for Coillte (2007-2009) were provided by Coillte; www.coillte.ie

36. Forecast volumes for the private sector in the ROI (2007-2008) are from Gallagher & O'Carroll (2001), adjusted for harvest loss. The 2009 volumes are from Phillips et al. (2009).

37. Forecast of production (2010) was provided by Henry Phillips (un-published), it is net of harvest losses.

38. The forecast of production (2011-2013) is a Net Realisable Volume (NRV) forecast, see http://www.coford.ie/media/coford/content/publications/projectreports/forecast_31Jan11.pdf

39. Harvested volume includes hardwood and firewood.

40. The processing outturn excludes hardwood and firewood.

41. Processing outturn (2007-2013) is taken from the COFORD Connects Notes: <http://www.coford.ie/publications/cofordconnects>.

42. Due to rounding, not all of the processing outturns add to 100%.

Annex 1, Table 1 (b): Actual volume harvested and forecasted net realisable volume, and estimated processing outturn (2010-2013)^{43,44,45,46,47}.

Top diameter category	2010			2011			2012			2013		
	ROI	NI	Total	ROI	NI	Total	ROI	NI	Total	ROI	NI	Total
	000 m ³ OB											
7-13 cm	760	77	837	759	77	836	777	96	873	725	96	821
14-19 cm	909	135	1,044	943	139	1,082	950	176	1,126	961	176	1,137
20 + cm	1,505	234	1,739	1,647	230	1,877	1,394	293	1,687	1,482	293	1,775
(a) Forecasted net realisable volume	3,174	446	3,620	3,349	446	3,795	3,121	565	3,686	3,168	565	3,733
(b) Harvested volume ⁴⁸	2,904	516	3,420	2,952	541	3,493	2,839	488	3,327	3,036	462	3,498
Difference (a) - (b)	270	-70	200	397	-95	302	282	77	359	132	103	235

Processing out-turn ^{49,50}	%											
	ROI	NI	Total									
Pulpwood	36.4	20.8	33.1	38.1	20.9	34.7	32.4	21.0	30.1	35.9	20.3	33.0
Stakewood	4.4	17.3	7.1	4.2	17.0	6.8	5.1	17.1	7.5	4.1	17.4	6.6
Sawlog	59.2	61.9	59.8	57.7	62.1	58.5	62.5	62.0	62.4	60.0	62.3	60.4
Total ⁵¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

43. Volume from 7 cm to tip is excluded.
 44. Forecast volumes for Coillte (2007-2009) were provided by Coillte; www.coillte.ie
 45. The forecast volumes for the private sector in the ROI (2007-2008) are from Gallagher & O'Carroll (2001), adjusted for harvest loss. The 2009 volumes are from Phillips et al. (2009).
 46. Forecast of production (2010) was provided by Henry Phillips (un-published), it is net of harvest losses.
 47. The forecast of production (2011-2013) is a Net Realisable Volume (NRV) forecast, see
 48. http://www.coford.ie/media/coford/content/publications/projectreports/forecast_31Jan11.pdf
 49. Harvested volume includes hardwood and firewood.
 50. Processing out-turn (2007-2013) is taken from the COFORD Connects Notes (CCN): <http://www.coford.ie/publications/cofordconnects/>
 51. Processing outturn excludes hardwoods and firewood.

Estimation of the wood fibre supply/demand situation in 2014 and 2020

Methodological overview

Estimated product composition of harvesting outturn

Domestic roundwood/wood fibre supply and demand have been analysed for the years 2014 and 2020 as part of this report and as an updating of the COFORD *All Ireland Roundwood Demand Forecast 2011-2020*, which was published in 2011.

Roundwood imports have been excluded, and hence the historic harvesting outturn by product as shown in Table 2 in this Annex differs slightly from the product outturns in Table 1 in this Annex. The percentages obtained are used to ascertain the volumes of pulpwood/stakewood and sawlog which are expected to be produced in 2014 and 2020 (Table 4).

Annex 1, Table 2: Harvesting outturn by product (2010-2013).

Harvesting outturn % ^{56, 57}	2010			2011			2012			2013			Average 2010-2013	
	ROI	NI	Total	ROI	NI	Total	ROI	NI	Total	ROI	NI	Total	ROI	NI
	% of domestic harvest													
Pulpwood & stakewood	38.7	40.0	38.9	39.8	40.0	39.8	37.1	40.0	37.5	39.2	40.0	39.3	38.7	40.0
Sawlog	54.4	50.0	53.7	52.8	50.0	52.4	55.0	50.0	54.3	53.5	50.0	53.0	53.9	50.0
Firewood	6.9	10.0	7.4	7.4	10.0	7.8	7.9	10.0	8.2	7.4	10.0	7.7	7.4	10.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Roundwood production forecast adjustment for historic actual harvest (2009-2013)

The forecast data are net realisable volumes (for an explanation see the COFORD *All Ireland Roundwood Production Forecast*⁵². The NRV forecast (2010) is unpublished (Henry Phillips, personal communication), while the NRV for the period 2011-2013 is from Table 4 of the forecast.

Table 4 shows that, on average, actual harvest in the Republic of Ireland (2010-2013) reached 92% of the NRV forecast. To arrive at an estimate of the supply/demand dynamic in 2014 and 2020 the NRV forecast for those years for the Republic of Ireland was discounted by 0.92. On the same basis and over the same period, a factor of 0.99 was applied for Northern Ireland. The adjusted forecast volumes are in Table 3.

Annex 1, Table 3a: Adjustment of NRV forecast for historic harvest in the Republic of Ireland.

Year	NRV forecast	Adjustment factor	NRV forecast adjusted for historic harvest
	000 m ³		000 m ³
2014	3,330	0.92	3,064
2020	4,083	0.92	3,756

52. http://www.coford.ie/media/coford/content/ublications/projectreports/forecast_31Jan11.pdf

Annex 1, Table 3b: Adjustment of NRV forecast for historic harvest in Northern Ireland.

Year	NRV forecast	Adjustment factor	NRV forecast adjusted for historic harvest
	000 m ³		000 m ³
2014	565	0.99	559
2020	559	0.99	553

Estimation of end product supply outturn for 2014 and 2020

The methodology used to estimate product supply outturn in 2014 and 2020 for the Republic of Ireland is outlined in the preamble to Table 2. For Northern Ireland, pulp and stakewood were taken as 40% of the adjusted NRV and 50% was taken as sawlog. The volume from 7 cm to tip was excluded in both cases.

Expected pulp & stakewood, and sawlog volumes for the Republic of Ireland for 2020 reflect the change in top diameter category in 2020 (7-13 cm forecast to increase by 4% over 2014, while 14 cm + expected to reduce by the same amount (-4% over 2014)).

Annex 1, Table 4: Estimation of product outturn in 2014 and 2020.

Item	Unit	Republic of Ireland		Northern Ireland	
		2014	2020	2014	2020
NRV forecast adjusted for historic outturn	m ³	3,064,000	3,756,000	559,350	553,410
Estimated % pulpwood and stakewood from Table 2	%	38.7	42.7		
Estimated volume of pulpwood & stakewood	m ³	1,186,000	1,604,000	224,350	221,410
Estimated % sawlog	%	53.9	49.9		
Estimated volume of sawlog	m ³	1,651,000	1,874,000	279,000	277,000

Estimated supply/demand for 2014 and 2020

Estimated demand for pulpwood, stakewood and sawlog are taken from a demand survey of boardmills and sawmills, undertaken by drima marketing in April 2014 for the COFORD WMG. Supply data are based on the methodologies outlined. The demand and supply data are brought together in Table 5 to arrive at net demand and to estimate the difference between supply and demand in 2014 and 2020, respectively. Commentary on the table is provided in the main body of the text.

Annex 1, Table 5: Estimated supply/demand for wood fibre⁵³ on the island of Ireland (2014-2020)^{54, 55}.

	2014						2020										
	ROI ⁵⁶			NI			ROI			NI							
	WR+R	P+S	S	Total	WR+R	P+S	S	Total	WR+R	P+S	S	Total					
Roundwood supply forecast^{58, 59} (a)	327	1,086	1,651	3,064	56	224	279	559	422	1,460	1,874	3,756	55	221	277	553	
Demand forecast⁶² and residue offset	000 m³ OB																
Roundwood for sawmilling		120	1,939	2,059		100	510	610		120	2,497	2,617		100	566	666	
Roundwood for boardmills		730		730						880		880				880	
Residues for boardmills	670			670					720			720				720	
Forest-based energy ^{61, 62}	994			994	918			918	1,871			1,871	1,388			3,259	
Sawmilling residues offset ^{63, 64}	-1,016			-1,016	-279			-279	-1,315			-1,315	-318			-1,633	
Boardmilling residues offset ⁶⁵	-89			-89					-89			-89				-103	
Net demand (b)	559	850	1,939	3,348	639	100	510	1,249	4,597	1,173	1,000	2,497	4,670	100	566	1,736	
Supply position (a-b)⁶⁶	-232	236	-288	-284	-583	124	-231	-690	-974	-751	460	-623	-914	-1,015	121	-289	-1,183
																	4,309

53. Wood fibre includes roundwood and wood residues for use in sawmills and boardmills, and forest-based biomass for energy use.

54. Roundwood from 7 cm to tip is excluded.

55. Demand comprises wood fibre for process and energy use by sawmills and by boardmills + the demand for forest-based biomass for use in the energy sector.

56. WR+R: wood residues + roundwood (includes sawmill + wood-based panel residues + roundwood chipped in forest); P+S: pulpwood & stakewood; S: sawlog.

57. The 2020 supply of the WR+R category in the Republic of Ireland was estimated as comprising 144,000 m³ of roundwood chipped in forest (for wood-biomass energy use) and 278,000 m³ of firewood. The growth in roundwood chipped in forest was estimated as the ratio of the forecasted roundwood in the top diameter category 7-13 cm in 2020 compared with 2014 (Table 4 of the All Ireland Roundwood Production Forecast (2011-2028)). [http://www.coford.ie/media/coford/content/publications/projectreports/projectreports/forecast_31Jan11.pdf].

58. Product breakdown is from Annex 1, Table 4 above.

59. Firewood supply is taken as 7.4% of forecast roundwood supply adjusted for actual harvest for the Republic of Ireland for both 2014 and 2020. In both 2014 and 2020, it is estimated that firewood supply in Northern Ireland is 10% of the NRW roundwood forecast as adjusted for historic roundwood harvest. Forecast roundwood supply is taken from Table 4 of the All Ireland Roundwood Production Forecast (2011-2028). http://www.coford.ie/media/coford/content/publications/projectreports/forecast_31Jan11.pdf

60. Estimated by survey of sawmills' and boardmills' roundwood demand (drima marketing April, 2014). Sawmill roundwood demand comprises stakewood and sawlog.

61. The estimated demand for forest-based biomass energy in the Republic of Ireland was provided by the Sustainable Energy Authority of Ireland in April 2014 www.seai.ie.

62. Estimated demand for forest-based biomass energy in Northern Ireland is from Action Renewables, as of April 2014; http://www.actionrenewables.co.uk/

63. Residues arising from sawmilling include bark, sawdust and woodchip, which are primarily used as a feedstock for boardmill manufacture and for the production of process heat (see the 2013 COFORD Woodflow www.coford.ie). Volumes assume that the demand for stakewood and sawlog will be met.

64. Data on the production of wood residues is taken from Woodflow 2013: http://www.coford.ie/media/coford/content/publications/cofordarticles/Coford%20Connex%20-PP3-4.pdf

65. Boardmill residues comprise bark and sawdust arising at Medite and SmartPly.

66. Supply position is net demand less supply.

Annex 2: The SIMWOOD project



Forests are a major natural resource

Forests cover 159 million hectares or 37% of Europe's land area (Eurostat 2013). As a major biological resource they have multiple ecological, economic and social functions. Besides preserving diverse landscapes, ecosystems, natural cycles and biological diversity, they provide a multitude of forest products - and are the backbone for employment and growth in forestry and the numerous industries which use wood as the primary raw material.

The 'forest-based sector' includes all uses of wood from raw timber up to high value end products, such as furniture, construction, paper, renewable energy or bio-based chemical products. Europe's forest-based industries have 4-5 million employees, around 600,000 enterprises and a turnover of 550 billion Euro, which represents around 10-15 % of total manufacturing.

An increasing demand for wood

The sector's forecasts for the coming decades predict a substantial increase in the demand for wood: 'solid' uses will grow steadily, while new chemical uses of wood will emerge and start to gain momentum. The highest growth rate is expected in bioenergy - wood energy plays a critical role in Europe's future renewable energy supply and the achievement of climate protection objectives.

Current trends in increasing demand are expected to lead to a scarcity of wood, stronger competition and structural shifts in the forest sector.

Unlocking forest resources

There is lots of **unused wood potential in European forests**. Most of this is 'locked' in forests that belong to an estimated **16 million private forest owners**.

Forest ownership is changing. Rural owners, together with their capacity for actively managing their own forests, are declining. The new generation of forest owners lives a more modern urban lifestyle and loses interest in their land or sees other priorities than timber production.

Socio-economic and technical barriers

The main challenges in forest ownership are demographic change, the increasing fragmentation of forest lands and the low income incentives from timber sales per owner.

- Timber is no longer their first priority and other uses such as recreation or nature conservation are gaining in importance, so **integrated forest land use approaches** are needed.
- In a marginal/unstable income situation, novel practices have to offer economically viable solutions, so **collaborative forest management approaches** are required.
- The **transfer of useable forestry knowledge** to forest owners and stakeholders is also needed.

Environmental barriers

Sustainable forest management has to ensure a variety of forest functions as well as wood production. There is growing demand from society for non-economic ecosystem services like biodiversity conservation and water quality regulation.

The SIMWOOD project aims to **mobilise forest owners, promote collaborative forest management and ensure sustainable forest functions**.

The project concentrates on **five research themes**: forest governance; forest ownership; forest management; forest functions; forest harvesting.

It carries out case studies in **14 model regions**, with the help of local stakeholders in Regional Learning Labs, and develops regional profiles. These contain:

- Information about the region's specific challenges and opportunities for wood mobilisation
- Goals and strategies, and proposed measures/suitable initiatives
- A proposed list of criteria and indicators for cross-regional comparison of wood mobilisation

The proposed solutions and measures will be tested, and this information and analysis will feed into the project's main output: the **SIMWOOD Mobiliser**.

The Mobiliser is a unique online knowledge base of innovative practices and technologies, existing collaborative initiatives and effective support programmes in the regions, and includes an expert system to evaluate the impact of up-scaling innovative solutions to the larger EU context.

This pan-European information system will help unlock substantial forest resources in a sustainable manner, and spread transferable solutions and viable policies across Europe.

About the project

SIMWOOD – Sustainable Innovative Mobilisation of Wood

Duration: 4 years (2013-2017)

Budget: 7.5 million euros (EU contribution 5.9 million euros)

Funder: EU 7th Framework Programme (FP7)

Partners: a total of 28 organisations from 11 European countries

Find out about SIMWOOD in your region: www.simwood-project.eu/contacts.html

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