

## CONTENTS

<b>Information and support services .....</b>	2
COFORd Council update .....	2
COFORd Publications.....	3
<b>Events .....</b>	4
Minister of State Tom Hayes TD launches COFORd Annual Report 2012-2013 and COFORd 'Forestry 2030' Papers – 27 June 2014 .....	4
Minister of State Tom Hayes TD launches Forest Policy Review Report 'Forests, Products and People' – 2 July 2014 .....	5
<b>Wood Matters.....</b>	6
Wood Fuel Quality Assurance Scheme .....	6
Developments in structural timber standards .....	7
International wood fuel standards – Ireland's involvement .....	8
<b>National and international news .....</b>	9
Forest sector reporting in Annual Review and Outlook for Agriculture, Food and the Marine 2013/2014 .....	9
Wood Awards .....	9
EU Commission conference on deforestation and forest degradation in the context of climate change .....	9
Future Trees Trust – and how to grow oak in (only) 100 years! .....	10
EUFORGEN Steering Committee Meeting, Edinburgh, June 2014 .....	11
Climate change matters .....	12

Forest Sector Development Division  
Department of Agriculture, Food and the Marine  
Agriculture House  
Kildare Street  
Dublin 2  
Ireland  
Tel: +353 - 1 - 6072000  
Email: [info@coford.ie](mailto:info@coford.ie)  
Web: [www.coford.ie](http://www.coford.ie)

PLEASE CIRCULATE THIS NEWSLETTER TO YOUR COLLEAGUES AND OTHER INTERESTED PARTIES

[TO SUBSCRIBE TO THE NEWSLETTER, CLICK HERE](#)

Newsletter compiled and edited by Orla Cashen, Eugene Hendrick and Noel O'Connor, Forest Sector Development Division (FSD), DAFM.

For further information please contact  
[orla.cashen@agriculture.gov.ie](mailto:orla.cashen@agriculture.gov.ie)

# Information and support services

## COFORC Council update

I am glad to provide readers of the COFORC Newsletter with a short update of the work of the COFORC Council.

The Council was appointed for a 3-year term at the beginning of 2012. At the outset we set ourselves a task to work with the Forest Service and others to address a number of important issues for forest sector development.

A COFORC group under the chairmanship of John Phelan of the Woodland Group completed the development of a national forest research strategy, in collaboration with Research and CODEX Division of the Department of Agriculture, Food and the Marine at the end of 2013. The strategy will be launched shortly and will play a significant role in charting the direction of forest research in Ireland over the coming five years.

Three further groups on land availability for afforestation, forest management planning and wood mobilisation have also been hard at work, and their endeavours are now reaching a conclusion. I'm pleased to say that all groups have fully engaged with stakeholders and experts from within the forest sector, including the Forest Service and Teagasc, and with other bodies and agencies who have an interest in forest sector matters.

Minister of State for Forestry, Tom Hayes launched the COFORC report 2012-2013, and our *Forestry 2030* papers on 27 June at Dundrum, Co Tipperary. The 2012-2013 report sets out the objectives and work of the COFORC groups in detail. The *Forestry 2030* papers distil the most recent scientific, technical and economic data on key aspects of the forest sector, and are targeted at policy makers and the general public. I want to thank Council member Donal Whelan and all of the experts for their work in compiling the papers.

Michael Lynn  
Chairman



Michael Lynn, Chairman of COFORC Council (left), with Tom Hayes T.D., Minister of State for Forestry

## COFORD Publications

COFORD report 2013-2014

COFORD's updated *Forestry 2030* papers provide up-to-date, factual information on:

- *Irish Forestry and the Economy*
- *Irish Forests and Climate Change*
- *Irish Forests and Renewable Energy*
- *Irish Forests and Biodiversity*
- *Irish Forests and Recreation*

The papers are essential reading for all those interested in the forest sector in Ireland, be they policy makers, stakeholders or forest managers.

All available at [www.coford.ie](http://www.coford.ie).



Left to right: Michael Lynn and Donal Whelan (COFORD Council) with Tom Hayes T.D., Minister of State for Forestry

## Events

### Hayes Launches COFORD Annual Report 2012-2013 and COFORD 'Forestry 2030' Papers – 27 June 2014

Tom Hayes T.D., Minister of State at the Department of Agriculture, Food and the Marine with responsibility for forestry, today launched the COFORD Report for 2012-2013 and a range of papers 'Forestry 2030' prepared by COFORD.

Launching the Council's Report on its activities in 2012-2013, Minister Hayes commented, "*I would like to take this opportunity to thank the members of COFORD Council for their ongoing work, time and commitment. The extent of their input is evident from their report for 2012-2013 which highlights the comprehensive nature of their work in assisting the development of our sector.*" In addition to developing a new national forest strategy, in collaboration with the Research and Codex Division of the Department of Agriculture, Food and the Marine, COFORD identified three priority issues in February 2012, namely the afforestation programme, forest management planning, and mobilisation of roundwood and formed Council Working Groups, chaired by Council members, to address the issues. The Annual Report outlines the progress made by each Working Group on the various issues.

The Council also updated its *Forestry 2030* policy papers on 'Irish Forestry and the Economy', 'Irish Forests and Climate change', 'Irish Forests and Renewable Energy', 'Irish Forests and Biodiversity', and 'Irish Forests and Recreation'. The Minister of State welcomed the publication of the papers and noted that "*There are often general statements made about the importance of the forestry sector to the Irish economy and society. These papers give the facts and the figures to support those statements and the fact that they have been issued by COFORD, a respected and reputable body, enables us to rely on those figures*".

Minister of State Hayes added that "*All of this material and the recommendations contained therein will be carefully considered by my Department. I look forward to working with COFORD and all of the stakeholders who have contributed to these papers. Our common goal is the ongoing development of Irish forestry policy and to develop Ireland's forestry industry to maximise the returns, economic, environmental and social, that flow from the State's investment.*"



Members of the COFORD Council with the Minister of State after the Council meeting, 27 June 2014.

Left to right back row: Eugene Hendrick, John McCarthy, John Phelan, Michael Fleming, Gerard Murphy, Richard Howell, Fred Tottenham and Donal Whelan

Left to right front row: Seamus Dunne, Michael Lynn, Tom Hayes T.D., Minister of State, Nuala Ní Fhlatharta and Mike Glennon

(COFORD Council members not in the photograph: Niall Coulston and John Joe O'Boyle)

## **Hayes Launches Forest Policy Review Report 'Forests, Products and People' – 2 July 2014**

Tom Hayes, TD, Minister of State at the Department of Agriculture, Food and the Marine with responsibility for forestry, formally launched the final report and recommendations of the Forestry Policy Review Group, entitled 'Forests, Products and People – Ireland's forest policy – a renewed vision', in Farmleigh House, Phoenix Park, Dublin.

A Forest Policy Review Group was established by the (then) Department of Agriculture, Fisheries and Food in April 2010 to review State forestry policy to take account of its critical role in relation to climate change and its importance to construction, bio-energy, bio-diversity and its potential to deliver long-term employment in other downstream industries such as eco-tourism, furniture, crafts etc. The Group, which comprised of a wide range of stakeholders, met on a number of occasions in the period 2010 to 2012, with the review process also consisting of an open call for submissions and workshops.

Welcoming the Report of the Group, Minister of State Hayes acknowledged the contribution and input of the members and those who made submissions to the process. He added "The outcome of this review, in the form of this wide-ranging report and many recommendations, is a milestone in the development of the policy framework for the forest sector. As Minister of State with responsibility for forestry, I am pleased to launch this report as the forest sector makes a significant contribution at national level. I believe that the sector has enormous potential to further contribute to the economic, environmental and social development of the country into the future. I welcome the report as a means to assist in achieving this potential."

Commenting on the wide-ranging Report, which consists of 13 Chapters covering all aspects of the forest sector and 7 Appendices, the Minister of State noted "The title of the Report 'Forests, Products and People' flags the comprehensive nature of the review. The wording of the strategic goal also sums up what the aims of a modern forest policy should be – that is 'To develop an internationally competitive and sustainable forest sector that provides a full range of economic, environmental and social benefits to society and which accords with the Forest Europe definition of sustainable forest management'."

Minister of State Hayes outlined some of the recommendations in the Report in his speech, including those relating to expansion of the forest area, ensuring sustainable management of national forest resource, environmental considerations and cost effective mobilisation of the forest resource. He concluded by saying that "The review is an important document that represents a consensus view among a wide range of forest sector stakeholders, and therefore merits very serious consideration. Already it has been considered in formulating our national forestry programme, and we are in the process of conducting further analysis of the recommendations."

Copies of the report and accompanying documentation can be accessed at:

<http://www.agriculture.gov.ie/forestservice/forestservicegeneralinformation/forestpolicyreviewforestsproductsandpeople/>

Or ordered from Orla Cashen, Forest Sector Development/COFORD Division, Department of Agriculture, Food and the Marine, Agriculture House, Kildare Street, Dublin 2 (price €14 including postage and packing).



Some of the Forest Policy Review Group with the Minister of State, left to right: Pearse Buckley, Georgina Hughes Elders, John Phelan, Henry Phillips, Eugene Hendrick, Tom Hayes T.D., Minister of State, John Cross, Nuala Ní Fhlatharta, John Joe O'Boyle and Gerard Murphy.

---

## Wood Matters

---

### Wood Fuel Quality Assurance Scheme

Over the last decade wood has grown significantly in importance as a fuel in Ireland. Domestic usage of firewood and wood pellets has increased significantly, while commercial and industrial use of woodchip has also increased in popularity.

Quality is a central to the specification and use of wood fuels. To that end the Wood Fuel Quality Assurance Scheme (WFQA) was launched in 2010 to address quality in wood fuel supply and to allow suppliers be certified to a recognised quality mark. In June 2014 the WFQA reaches an important milestone, certifying its 10<sup>th</sup> firewood supplier and 14<sup>th</sup> supplier of wood fuel overall. Over the past 12 months the scheme has taken hold in the market place, certifying eight new entrants to the scheme and seeing certification as a qualifying mark for large supply tenders. The WFQA is overseen by an industry representative steering committee and is run by the Irish BioEnergy Association with grant support from the Department of Agriculture, Food and Marine. Further information on the scheme, including how to become a certified supplier, is available at [www.wfqa.org](http://www.wfqa.org)

Current Certified Suppliers	County	Fuel Type
Forest Fuels Ltd	Meath	Firewood
Clare Woodchip	Clare	Woodchip
Worrell Woodchip	Laois	Woodchip & firewood
Aughrim Timber and Stake	Galway	Woodchip
Woods Fuels	Roscommon	Firewood
McCauley Woodfuels	Leitrim	Woodchip

K's Sustainable Energy Ltd	Wicklow	Firewood
Balcas	Fermanagh	Wood pellets
Cotter Bros Firewood	Limerick	Firewood
Woodside Garden Products	Carlow	Firewood
Sherlock Wood Products	Meath	Firewood
O'Brien Timber Products ( Celtic Logs)	Galway	Firewood
Butterly Fuels Ltd	Dublin	Firewood
Logs 2 Go Ltd	Westmeath	Firewood

*Noel Gavigan  
Irish Bioenergy Association*

## Developments in structural timber standards

A new Structural Recommendation SR71 (Timber in construction - Span tables and guidelines) is due to go to the NSAI board shortly for approval. It effectively replaces IS 444 (The use of structural timber in buildings) which was withdrawn in 2010 (as were the associated loading standards), under European agreements to use European Standards (ENs) rather than existing national standards. Work on the SR71 was carried out under Working Group 2 of the Timber Standards Consultative Committee (TSCC) of the NSAI. The load span tables in SR71 have been designed using Eurocode 5 (EN 1995-1-1) using European loading standards and the standard is complementary to the Eurocodes.

Structural Recommendation SR70 (Timber trussed rafters) is also nearing completion and is expected to go for NSAI approval later in the year. SR70 replaces IS 193 (Timber trussed rafters for roofs) and is also complementary to the Eurocodes; it too was developed under Working Group 2 of the TSCC and is expected to go to the NSAI board for approval before the end of the year.

The new SRs incorporate the latest design and loading standards (including wind and snow) produced by CEN, the European body responsible for producing standards. These standards use a limit state approach rather than the permissible stress approach used by the withdrawn standards (which included the main timber standard BS 5268 Part 2 - Code of practice for permissible stress design, materials and workmanship). A quick description of the difference between limit state design (the Eurocodes) and permissible stress design (Irish and British standards): permissible stress design essentially took the characteristic value and divided it by a global factor of safety to get a basic design stress. Limit state design splits the global factor of safety between the materials (to get a basic design value) and the applied loads. Thus the loads are factored upwards and the stresses factored downwards - but not as much as the permissible stress method.

The revision of IS 127 (the standard for visual strength grading) is essentially complete, and once the final revisions to EN 14081-1 are agreed, which should take place at the upcoming CEN Working Group 2 meeting in July, it is expected that it will also go to the NSAI board before the end of the year.

*Bill Robinson  
Structural Engineer*

## International wood fuel standards – Ireland's involvement

Due to increased use and trade of solid biofuels (such as wood, straw and olive stones to name a few) it was decided to start a European Standardisation (CEN) process on solid biofuels. The work was carried out in Technical Committee TC335 of CEN. Ten years later, 28 standards on all aspects on solid biofuels have been completed and published. However the work has not finished there. Trade in solid biofuels has now expanded to the global level, which has provided the impetus to convert the CEN solid biofuels standards to worldwide standards, through a new technical committee TC238 Solid Biofuels, under the auspices of the International Organisation for Standardization (ISO), for which NSAI is the contact organisation in the Republic.

This new TC238 has a wider field of interest than its CEN antecedent; it includes aquatic biomass (seaweeds, algae), as well as other materials that were not covered in CEN standards, such as spent palm kernels (after the oil has been extracted) or rice husks.

Ireland has been represented from time to time on TC335, but over the more recent past there has been a constant involvement in the ISO TC238 process, through the NSAI. Research done in Ireland on for example size distribution of wood chips, and carried out under the COFORD programme, has contributed to an improvement of the important standard ISO EN 17225<sup>1</sup> on *Fuel requirements and Classes*. This standard describes, defines and classifies the quality parameters of many different solid biofuels. Part 1 lists the general requirements, while the subsequent 7 sections states requirements for fuels that are specifically suited for smaller boilers (up to 500 kW). These quality classes can then be used by certification bodies (like the Wood Fuel Quality Assurance system in Ireland) to certify that fuels match up to these requirements.

Because of the legwork that was done as part of the CEN process, the ISO standards can move ahead much more rapidly. The EN ISO standard on fuel requirements and classes was published on the 1 May, while many other standards are already in the last round of balloting. Once these ballots are concluded, the finishing touches can be completed and the standards are ready for publication.

The new ISO TC238 will also look at other subjects, which had not been covered by CEN TC335, in a newly formed Working Group 7 on safety aspects, such as safe handling of wood pellets, which includes the risk of dust explosions, self ignition, and off gassing of biofuels (which apparently emit carbon monoxide and consume oxygen), the amount of fungi and bacteria spores in the fuels, which also can be a health hazard if the fuels have not been stored properly. Initially this working group will look on the industrial use of wood pellets, but at a later date also other wood fuels such as wood chips will be drawn into the work.

All the standards that are developed in the ISO Technical Committee will be published as full EN ISO standards, which means that once the ISO standard has been published, they will automatically cause the withdrawal of the previous European Standard. As such the new EN ISO 17225 Solid Biofuels - Fuel Specifications and Classes will replace EN 14961 Solid Biofuels - Fuel specifications and Classes before the end of the year.

All published standards can be bought at NSAI (<http://www.standards.ie/>). Click here on “Online Catalogue of Irish Standards - Guest User” and then type in either the number of the standard you are looking for or the name. You will then get a listing with the price of each part of the standard.

The COFORD Newsletter will contain updates on the progress in the standardization process. For a list of published European Standards one is referred to [www.woodenergy.ie](http://www.woodenergy.ie), which will soon contain a list of standards in progress or published within the ISO Technical Committee.

*Pieter D. Kofman  
Wood energy consultant to DAFM*

---

<sup>1</sup> [http://www.iso.org/iso/catalogue\\_detail?csnumber=59456](http://www.iso.org/iso/catalogue_detail?csnumber=59456)

# National and international news

## Annual Review and Outlook for Agriculture, Food and the Marine 2013/2014

The *Annual Review and Outlook for Agriculture, Food and the Marine 2013/2014*, launched by Minister Coveney on the 7 July provides expanded reporting on the forest sector in areas such as economic contribution, forest genetic resources and climate change and forests. The publication is available at <http://www.agriculture.gov.ie/media/migration/publications/2014/ARO2014010714.pdf>.

## The Wood Awards – innovative design and use of wood products

The Wood Marketing Federation, with sponsorship from the Department of the Agriculture, Food and the Marine, is organising a major national initiative – the national Wood Awards – with eight separate categories related to the use of wood and wood products. Entries to be submitted by 23 July 2014 - see [www.wood.ie](http://www.wood.ie).

## EU Commission conference on deforestation and forest degradation in the context of climate change

The European Commission hosted an important international conference on deforestation and forest degradation in Brussels on 26- 27 May 2014.

The event was co-organised by the three Directorate Generals of the Commission (DG CLIMA, DG DEVCO and DG ENVI) which have particular interest, and whose remit covers deforestation and forest degradation in the context of climate change and biodiversity loss.

The conference was opened by the European Commissioner for Environment, Mr Janez Potocnik, while the Head of Cabinet of the European Commissioner for Climate Action, Mr Peter Vis, provided the closing address.

Over 100 delegates attended; among them representatives from the public and private sector as well as civil society, research, industry, and financial institutions. Delegates were drawn from EU Member States, Asian and African countries, and the European Commission.

The conference aimed at building synergies between key players from EU and developing countries - and between public, private and civil society - with a view to helping future climate negotiations in the sphere of REDD+ implementation and the continued fight against deforestation.

The concept of REDD+ includes REDD (reducing emissions from deforestation and forest degradation) and (+) conservation of forest carbon stock, sustainable management of forests and enhancement of forest carbon stocks.

Information provided by keynote speakers and also the final conclusions of breakout working groups included:

The three Fs (food, fibre and fuel) are the main drivers of deforestation.

Main activities associated with deforestation include production of palm oil, soya, beef, energy and pulp/paper.

Agriculture is estimated to be the primary driver behind up to 85% of global deforestation. Commercial agriculture accounts for up to 54% of global deforestation, while subsistence agriculture accounts for 31%.

Deforestation thrives where weak governance exists. Deforestation and land conversion is also influenced by a drive to provide arms for national conflicts.

Validation processes in developing countries needs to use and take account of law, land use planning, special mapping and stakeholder dialogue.

Recognition of traditional knowledge and the role of women.

Increase transparency in land allocation systems and granting of concessions.

Land tenure and indigenous people's rights need to be robustly integrated into national implementation modalities for REDD+. FAO Guidelines on Good Land Tenure Governance may provide a template for this.

Food waste in developed countries needs to be substantially reduced from present high levels of 40%. This is also considered to contribute to deforestation through increased demand for agriculture products.

High protein diet in developed countries and in emerging economies is also considered to be a driver.

These and other outcomes will now be considered by the European Commission in formulating a strategy for upcoming REDD+ and climate negotiations in 2014 and 2015.

## Future Trees Trust – and how to grow oak in (only) 100 years!

Future Trees Trust, previously the British & Irish Hardwood Improvement Programme, is dedicated to improving broadleaved trees through selective breeding programmes in

1. ash,
2. birch,
3. cherry,
4. oak,
5. sycamore,
6. Spanish chestnut and
7. walnut.

The work is supported by the Department of Agriculture, Food and the Marine. The objective is to increase disease resilience, promote carbon sequestration, and improve form and timber yield in the seven species, making planting quality broadleaves a better economic choice.

Last year was the busiest year yet, and saw the work of FTT develop following the launch of its key policy-influencing document *A future with broadleaved trees* at Dublin's Botanic Gardens in November 2013.

*A future with broadleaved trees* outlines three principal objectives:

1. delivering improved broadleaved trees through research,
2. raising awareness of the benefits of using improved broadleaved trees and
3. establishing a policy framework that encourages planting of improved broadleaved trees.

Already, some of the success criteria described in the document have been achieved:

- A working group has been established to discuss potential new species groups such as beech.
- Forestry Commission, GB has commissioned an audit of existing broadleaved seed stands on the Forest Reproductive Material register, in order to determine how to bring these stands back into effective seed production and how to ensure sustainable seed supply.
- Forestry Commission has commissioned research into the effects of seed source on tree performance.

Currently, the oak species group (chaired by John Fennessy) is in the process of identifying a further 50 'plus trees'—healthy trees of superior form - to become parents in the Irish FTT oak breeding programme. These new

additions will help to ensure that the breeding population is representative of the genetic diversity found within oak in Ireland. In this way, future populations of Irish oak will have a broad genetic base, with increased diversity and greater resilience to current and future pests and disease. The project — identifying the trees, taking samples and creating grafted plants, will start this autumn.

#### **FTT publication – *Oak: fine timber in 100 years***

Future Trees Trust has also just published the definitive guide to growing fine quality oaks - *Oak: fine timber in 100 years*. Originally published as *Le chêne autrement*, the book by Jean Lemaire has been translated by FTT oak group member Bede Howell, a chartered forester who has worked in British and French oak woods and sawmills. and whose has an broad knowledge of oak silviculture.

The book is the outcome of 30 years of research in France, and shows that high quality, timber-yielding oak can be grown over a much shorter time than was previously the case in France. Copies are available at €35 (including p&p) through Orla Cashen – email [orla.cashen@agriculture.gov.ie](mailto:orla.cashen@agriculture.gov.ie) to order.

### **EUFORGEN Steering Committee Meeting, Edinburgh, June 2014**

Since the late 1990s Ireland has been an active member of the European Forest Genetic Resources Network (EUFORGEN) and has along with the other 24 member states, been promoting the overall goal of EUFORGEN which is to develop conservation methods and appropriate use of forest genetic resources as an integral part of sustainable forest management. This programme has brought together experts from the member states to exchange and monitor information, analyse relevant policies and practices and to work together to develop methods for better management of forest genetic resources at a pan-European level.

The Tenth Steering Committee Meeting was held recently in Edinburgh from 16-18 June. Several important issues were aired and discussed, among which were the implementation of the final elements of the Phase IV programme of work (2010-2014). Other elements progressed at the meeting include the establishment of core networks of genetic conservation units for forest trees, as well as an update and discussion on the draft programme proposal for Phase V (2015–2019). Other important issues included finalisation of inputs to the State of Europe's Forests, particularly the collection of European data for Indicator 4.6 (Area managed for conservation and utilization of forest genetic resources including *in-situ* and *ex-situ* gene conservation units and area managed for tree seed production (seed stands and seed orchards)..

Further information on the EUFORGEN programme is available at [www.euforgen.org](http://www.euforgen.org)

*John Fennessy  
Forest geneticist*

### **Climate change matters**

#### **UN Framework Convention on Climate Change (UNFCCC), Bonn Climate Change Conference, June 2014**

Over the past two and a half years, since the Durban climate change conference at the end of 2011, the international climate change process has been focusing on developing a new framework for the post 2020 period. The intention is reach an international agreement at the Paris conference at the end of 2015. Called the Ad Hoc Working Group on the Durban Platform for Enhanced Action, or ADP for short, the most recent meeting of the process took place in Bonn over a 2-week period in June. One of the outcomes was a draft text: ‘Communication of intended nationally determined contributions (INDCs) of Parties in the context of the 2015 agreement’. It deals with the mechanisms whereby INDCs by Parties to climate change mitigation and adaptation would be made (preferably by the first

quarter of 2015). Earlier this year the European Commission put forward ‘A policy framework for climate and energy in the period from 2020 to 2030’, which calls for a reduction in greenhouse gas (GHG) emissions by 40% below the 1990 level, an EU-wide binding target for renewable energy of at least 27%, renewed ambitions for energy efficiency policies, a new governance system and a set of new indicators to ensure a competitive and secure energy system’ (see <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52014DC0015&from=EN>). for further information) The intention is that the 40% headline figure would be agreed by the EU Council and Parliament by the end of 2014, for tabling in early 2015.

Section 4.2 of the Commission’s policy framework is entitled Agriculture and land use, and states, *inter alia*, ‘to ensure that all sectors contribute in a cost-effective way to the mitigation efforts, agriculture, land-use, land-use change and forestry should be included in the GHG reduction target for 2030’. Precisely how this could best be done is open to further analysis and discussion. The framework sets out in a number of options, including a separate framework that would combine agriculture and land use, land-use change and forestry LULUCF). Among the important considerations in any framework are how to incentivise mitigation in the forest sector, and as well to ensure that all emissions resulting from harvest and land-use change are fully accounted. Ireland, as readers will be aware, has a significant potential to increase forest cover, and thereby to enable climate change mitigation through sequestration, forest-based biomass replacing fossil fuels, and the use of long-lived forest products. The mitigation potential can be seen in a recent EPA report<sup>2</sup> on Ireland’s greenhouse gas emissions over the period 2008-2012, when new forests established since 1990 removed a net 17 million tonnes of carbon dioxide from the atmosphere.

---

<sup>2</sup> [http://www.epa.ie/pubs/reports/air/airemissions/Ire\\_GHG\\_Emissions\\_1990\\_2012\\_handout.pdf](http://www.epa.ie/pubs/reports/air/airemissions/Ire_GHG_Emissions_1990_2012_handout.pdf)