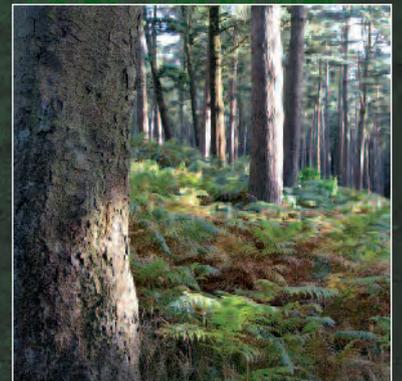


Investing in Forestry



Forestry Services Ltd. offers the complete forestry package including planting, harvesting, timber sales, reforestation and all working capital.



Forestry Services Ltd.
Experienced Professionals

Investing in Forestry



Investing in Forestry



Forestry Services Limited
Cillín Hill Business Park
Kilkenny City
Ireland
Loc8 Code: RD8-71-3FJ

t +353 (056) 770 2242
e info@forestryservices.ie
w www.forestryservices.ie
www.forestthinnings.ie
www.foresttomarket.ie
www.farmadvice.ie



At the launch of foresttomarket.ie website: Sean Kelly MEP (right), Jim Power, Economist and Paddy Bruton, Managing Director, Forestry Services Ltd.



Forestry Services Ltd., winners of the Forestry Agribusiness of the Year Award, 2015. The awards programme offers a platform to highlight the efforts of those involved in the successes in the agricultural, food and forestry sectors and to celebrate their achievements.

Foreword

Forestry Services Ltd., established in 1985, is a private forestry company specialising in providing nationwide forestry services to all woodland owners and stakeholders considering forestry. Forestry Services do everything from planting to harvesting to timber sales to reforestation. We provide all working capital – the complete forestry package.

Designated a Self Assessment Company by the Forest Service, Department of Agriculture Food and the Marine, it has a proven track record in forest establishment and management.

We provide a service through our team of foresters who are all members of the Society of Irish Foresters and are registered on the Forest Service list of approved foresters.

Forestry Services Ltd. provides long-term forest management services through our associate company, Forwood Forestry Ltd, and now provide technical advice on agriculture and forestry related issues through our association with Cillin Farm Advisory Group.

We are involved in national and international timberland investment and have an established track record in managing large-scale forestry investments.

In summary, we take the worry out of forestry and provide a complete service from planting, management, paperwork, road construction, thinning and timber sales.

This publication provides an overview of the forestry sector and analysis of forestry investment aimed at institutional and private investors alike. To encourage greater forestry investment we have launched a unique website, foresttomarket.ie which is a dedicated platform for investors to source existing forests and land suitable for forestry for sale by auctioneers in Ireland. A recent report by the Society of Chartered Surveyors Ireland showed that the average price for forestry land was almost €10,000/ha in 2015 an increase of 5% over 2014. The economic climate is excellent now for forestry and to encourage further investment, we are providing free registration to foresttomarket.ie for investors.

This and other Forestry Services initiatives demonstrate why forestry can be highly profitable and tax efficient as well as being suitable for the long-term investor seeking a stable asset-backed income.

Paddy Bruton
Managing Director
Forestry Services Ltd.



Paddy Bruton

“

We take the worry out of forestry and provide a complete service from planting, management, paperwork, road construction, thinning and timber sales.

”



Contents

Why Invest in Forestry? - - - - -	5
Other Investment Considerations - - - - -	9
Why Irish Forestry? - - - - -	11
Tax Treatment of Forestry - - - - -	15
Irish Forest Sector - - - - -	16
Risks - - - - -	19
Why Forestry Services? - - - - -	21
Forest Valuation Appendix I - - - - -	23

Why invest in forestry?

In recent years there has been an increasing interest in investment in forestry. This has been partly due to the impact of the recession across Europe with investors looking for a safe home for their investments.

Forestry is now a proven asset class^{1, 2} for institutional and private investors alike and is widely acknowledged as a staple element of investment portfolios adding diversity and reliability.

“

The combination of value in a naturally growing commodity and the security of ownership of the underlying land provides investors with a low risk asset providing long-term capital appreciation in a sustainable and tax efficient manner.

”

Forestry investment can be highly tax efficient and is well suited for the long-term investor seeking a stable asset backed investment.

The combination of value in a naturally growing commodity and the security of ownership of the underlying land provides investors with a low risk asset providing long-term capital appreciation in a sustainable and tax efficient manner.

Forestry as an investment offers a number of unique advantages:

- Low risk
- Land based asset
- Less volatility than other asset classes
- Capital appreciation even in recession
- Competitive returns
- Timing of final harvest flexible

Low Risk: Forestry investment is recognised as a relatively low risk investment as even during periods of economic downturn there is ongoing biological growth increasing timber volumes.

In January 2013, *Money Week* magazine reported that “timber is the only low risk, high return investment.”

Land Based Asset: Investment in forestry is investment in a land based "real" asset. The land and forest crop are tangible and exist as opposed to other investment classes whose value is derived from a contractual claim on an underlying asset, which may be real or intangible.

Low Volatility: Forestry investment is recognised worldwide as having low volatility in comparison with other asset classes as is evidenced by forestry investments being relatively unaffected by the tumultuous changes in financial markets in recent years. In Ireland, forestry displayed the lowest volatility of returns of all asset classes over the period of the recession.

Average 10 Year Returns to Dec 2013

	Irish Equities	Global Equities	Irish Commercial Property	Irish Forestry
<i>Index</i>	<i>ISEQ Index</i>	<i>FTSE World Index</i>	<i>Mercer Property Fund Average</i>	<i>Irish Forestry Unit Trust</i>
Standard Deviation	20.9	12.7	7.3	3.3
Best Year	35.80%	30.20%	23.90%	7.50%
	-2013	-2009	-2006	-2007
Worst Year	-65.00%	-37.80%	-38.60%	-9.60%
	-2008	-2008	-2008	-2009

¹ Greenwood Management Aps. *Forestry and Timberlands Investments 2011*.

² *Timberland Investment Resources Europe*. <http://www.tireurope.com/index.php>

Capital Appreciation: Forestry returns, excluding the underlying land, are based on a combination of biological tree growth, timber price, active forest management and the market for forest assets.

“

As trees grow they increase in size (diameter) and the value of their end uses also increases from wood energy and wood based panels through pallets / packaging and garden furniture to construction sawnwood.

”

As trees grow they increase in size (diameter) and the value of their end uses also increases from wood energy and wood based panels through pallets / packaging and garden furniture to construction sawnwood.

Forest Investment Return Components



Forestry v Other Asset Classes

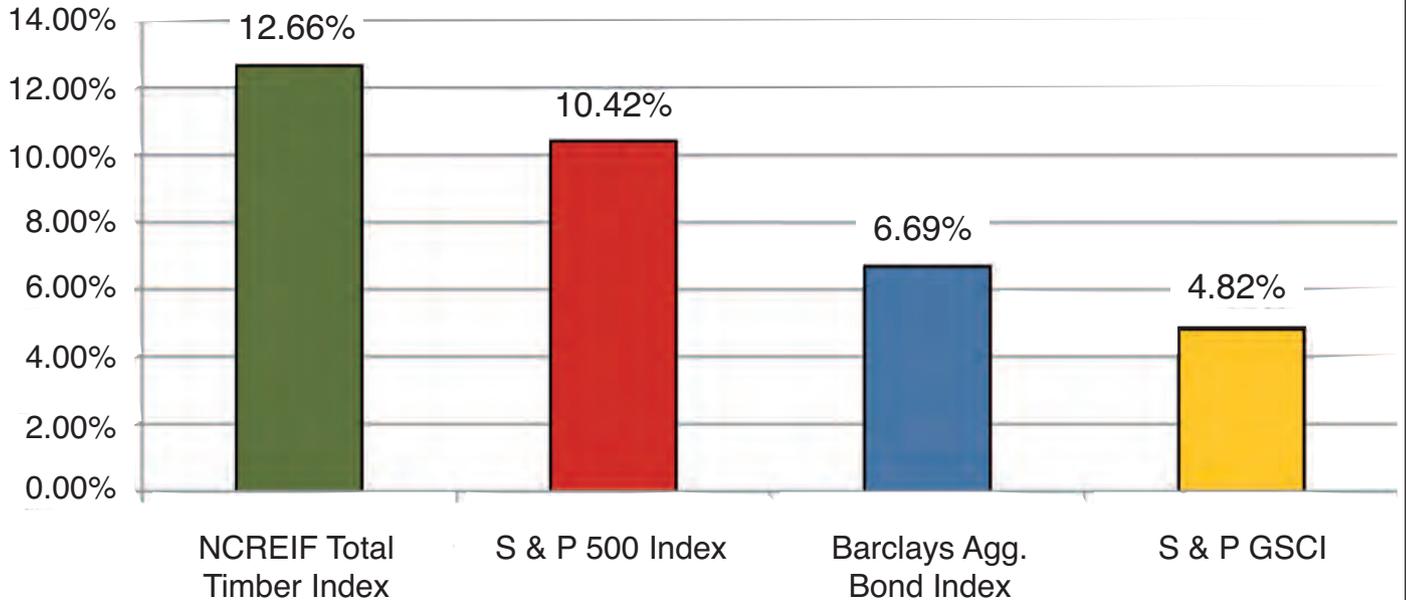
NCREIF Total
Timber Index
12.66%

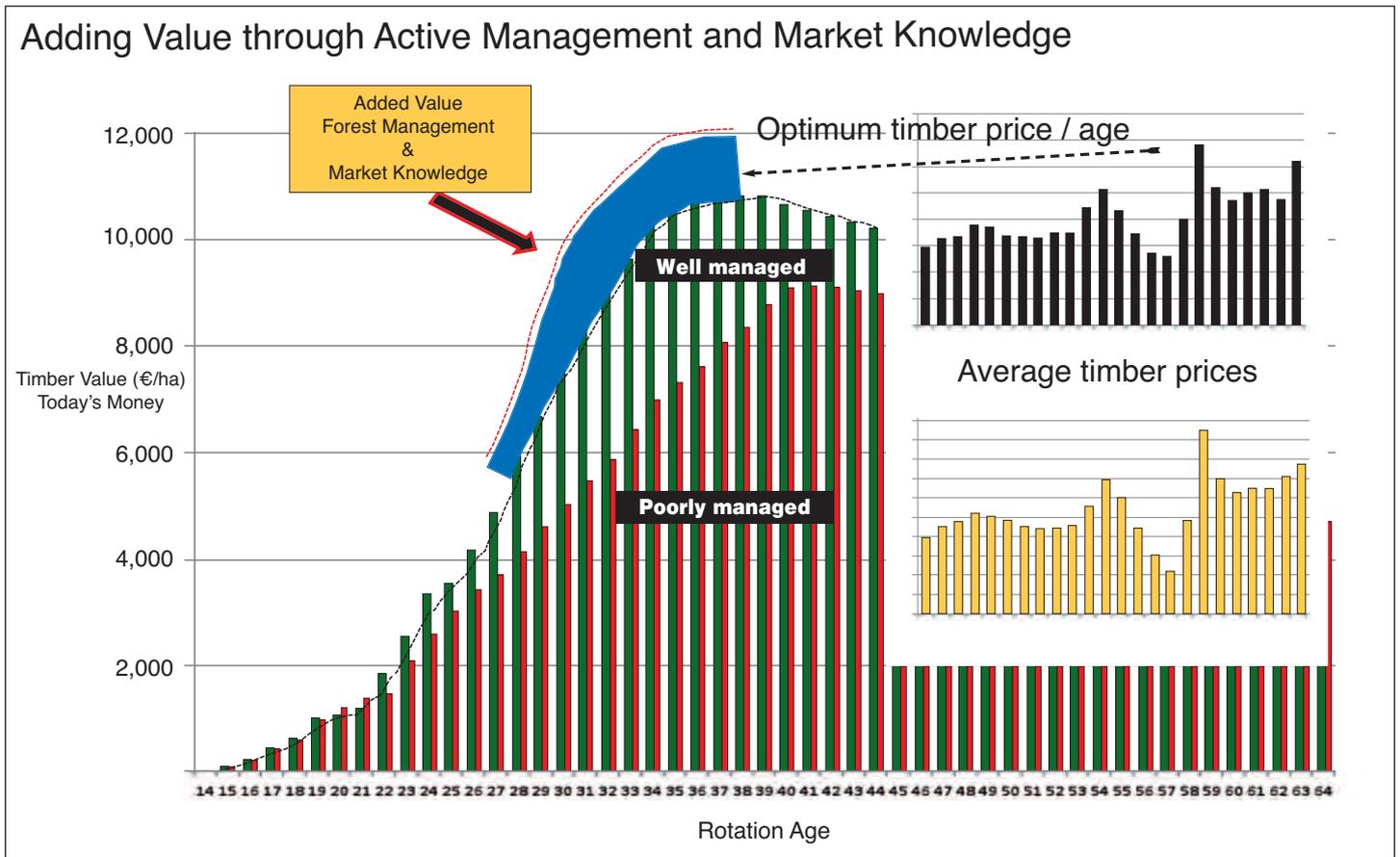
S & P Index
10.42%

Barclays Agg.
Bond Index
6.69%

S & P GSCI
4.82%

Bonds, Commodities, Stock & Timberland (1987 - 2014)





Biological volume growth also known as forest increment can under Irish conditions be as high as 36m³/ha/year depending on the productivity of the site and the age of the crop. So even during recession and excluding higher value end uses for the timber, forestry investment can increase in capital value protecting the investor from the downturns in the market.

Actively managing forests can also add significant value and increase financial return, while at the same time reducing risk. Forestry Services Ltd. uses proven technology to monitor the forests under its stewardship and complies with industry defined best management and environmental guidelines.

This ensures:

- Optimal rotation length to maximise returns
- Monitoring of prices to avoid downturn at time of harvest
- Correct timing and layout of access roads
- Ongoing maintenance of crops to ensure full stocking
- Timely thinning of crops to enhance value
- Control of competing vegetation during establishment
- Protection of crops from fire, trespass and other risks.

Competitive Returns: Timber is a global traded commodity and investment in forestry reflects this global aspect.

Forestry investment has shown that it can deliver competitive rates of return over and above inflation of the order of 5-10% across a range of markets and geographic locations.

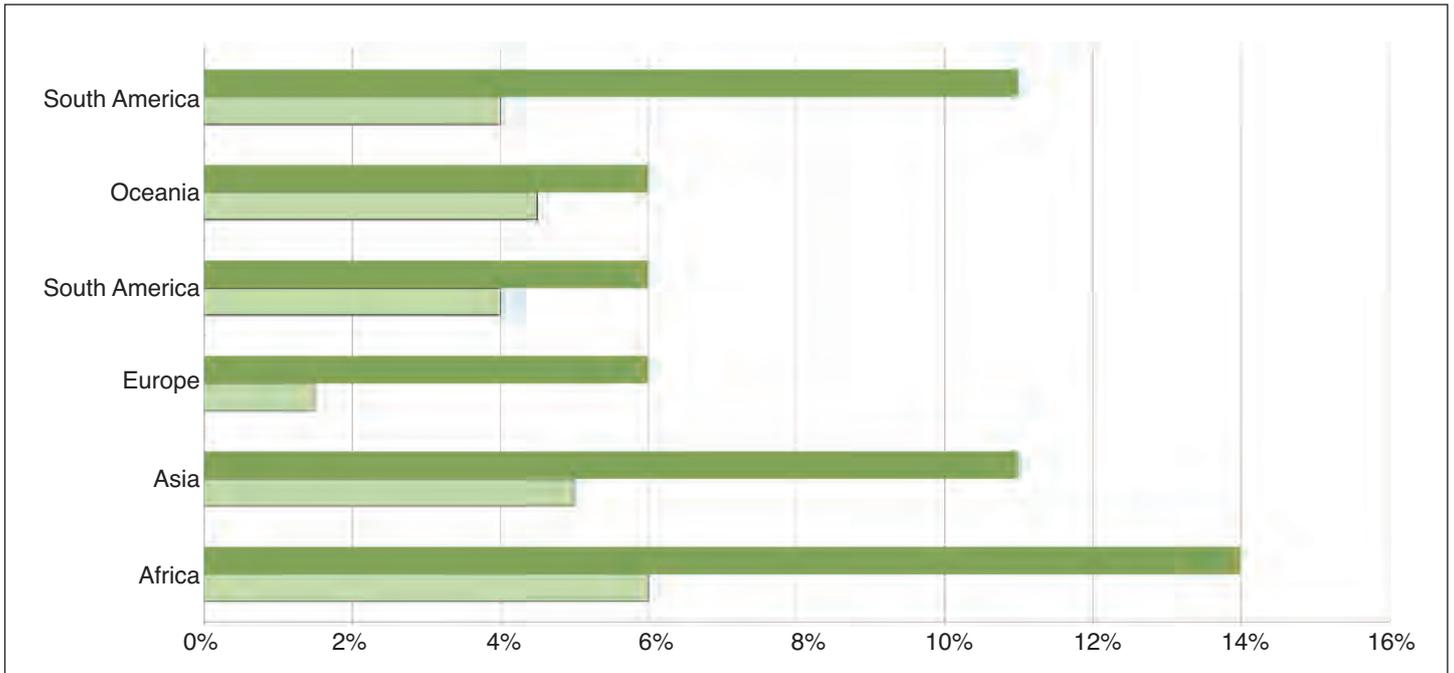
This level of return, while it cannot compare with double digit expectations around in the boom times, does represent a competitive return. Obviously returns vary with geographic location and the particular market and risk profile.

“
Under Irish conditions returns of the order
of 5% to 10% are possible
”

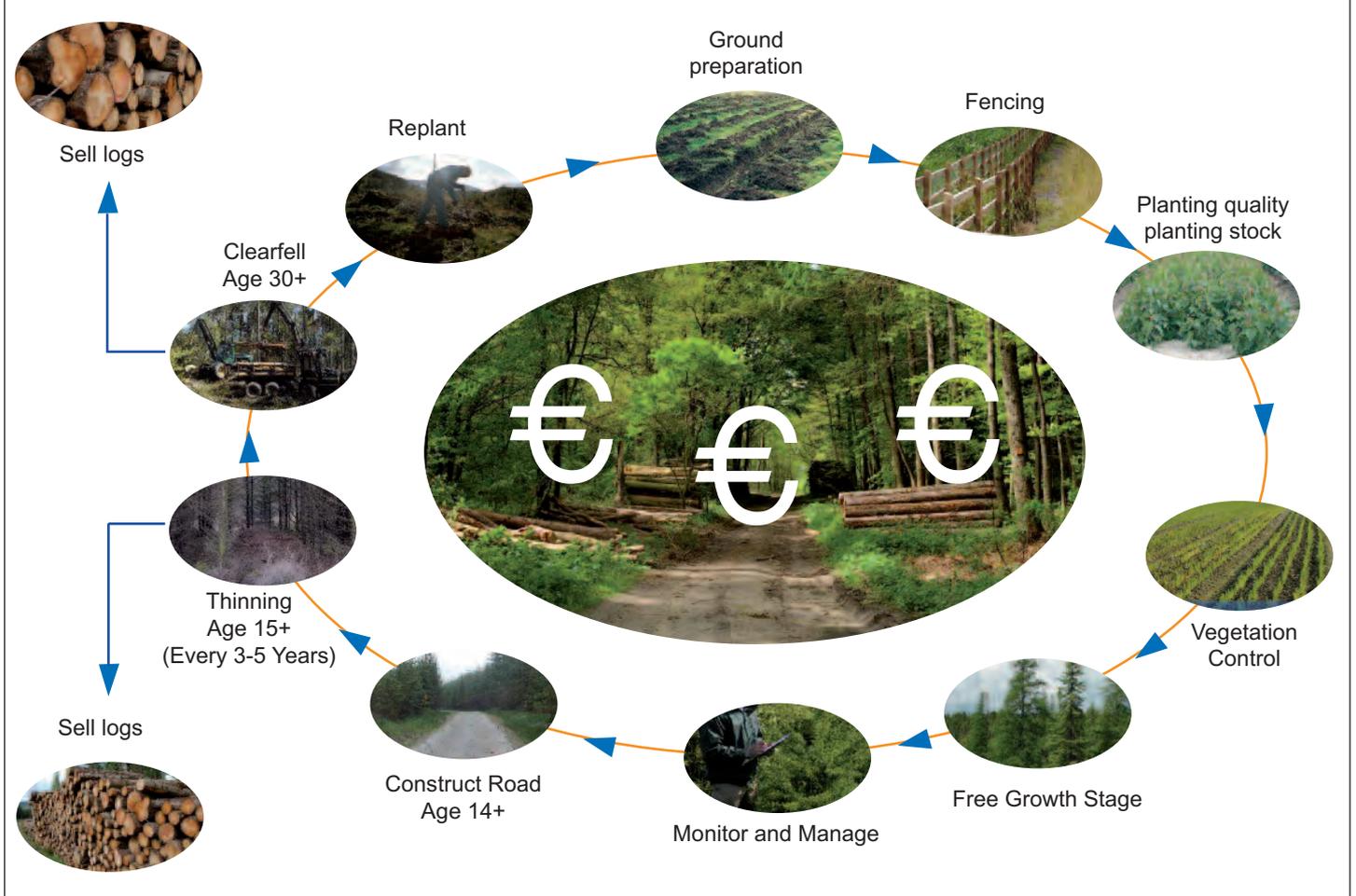
Under Irish conditions returns of the order of 5% to 10% are possible but dependent upon good site productivity, location close to end market and prudent active forest management.

Timing of Harvest: Unlike other land based products as for example, cereals or beef which have a definite life cycle and must be harvested irrespective of market price, forestry offers the investor a time period window of opportunity as to when to harvest. This allows the private investor who typically would not have any timber supply commitments, to be a price maker, harvesting when timber prices are good, thereby protecting his or her investment from downward price movements.

IRR Range from Forestry Investment



Forest Rotation Investment Cycle



Other Investment Considerations



Apart from financial considerations, many investors now require that their investment is ethical and provides benefit to society as a whole. Forestry investment provides a range of well recognised additional benefits including:

- Climate change contribution
- Rural development
- Environmental services
- Ethical Investment

Climate Change: Catastrophic weather events attributable to world climate change are becoming more frequent. Climate change, caused by emissions of greenhouse gases, is forecast to have devastating impacts on human society, unless emissions are checked and reversed. Deforestation (loss of forest cover) is one of the major contributors to climate change, and currently accounts for 17% of global greenhouse gas emissions.

“
Forests play an important role in climate change mitigation through the sequestration and storage of carbon from the atmosphere.
”

Forests play an important role in climate change mitigation through the sequestration and storage of carbon from the atmosphere. Annual removal of carbon dioxide from the atmosphere by Ireland’s forests exceeds 6 million tonnes per annum. Investing in forestry through afforestation is also investing in measures which will directly mitigate against the impacts of climate change.

Rural Development: Forestry is one of the very few rural based activities in Ireland which are increasing in terms of contribution to the overall national economy and which has a projected high level of future growth. Forestry is estimated to employ circa 14,000 with the greater proportion rural based. Investment in forestry is also an investment in rural development and the maintenance of rural communities.

“
Forestry investment provides a range of well recognised additional benefits
”

Environmental Services: In addition to timber and carbon sequestration, forests also provide a range of non market benefits or environmental services. These include:

- Biodiversity
- Landscape
- Recreation
- Water quality

While these environmental services do not as yet have a market value in Ireland, increasingly society is recognising their value worldwide and there are many examples where forest owners are rewarded for the environmental services provided by their forests especially in relation to water and biodiversity.

Ethical Investment: The past two to three decades has seen a dramatic increase worldwide in ethical or socially responsible investment, as investors seek to balance profit with sustainable development and the impact of their investments on society and the environment. Investing in Forestry is investing in the future of our planet and in making the world we live in a better place for all.



Why Irish Forestry?

In addition to the underlying rationale for investment in forestry in general, there are additional reasons why to invest in Irish Forestry in particular and these include:-

- Generous grants and premium payments
- Fast growth rates
- Timber prices
- Proximity to major markets
- Expanding private sector
- Favourable tax regime (see next section)

Forestry Programme (2014-2020): The Government has renewed its long term commitment to forestry through its Forestry Programme (2014 - 2020). The programme is 100% funded from the Irish Exchequer and has been granted State Aid approval by the European Commission. The programme provides for:

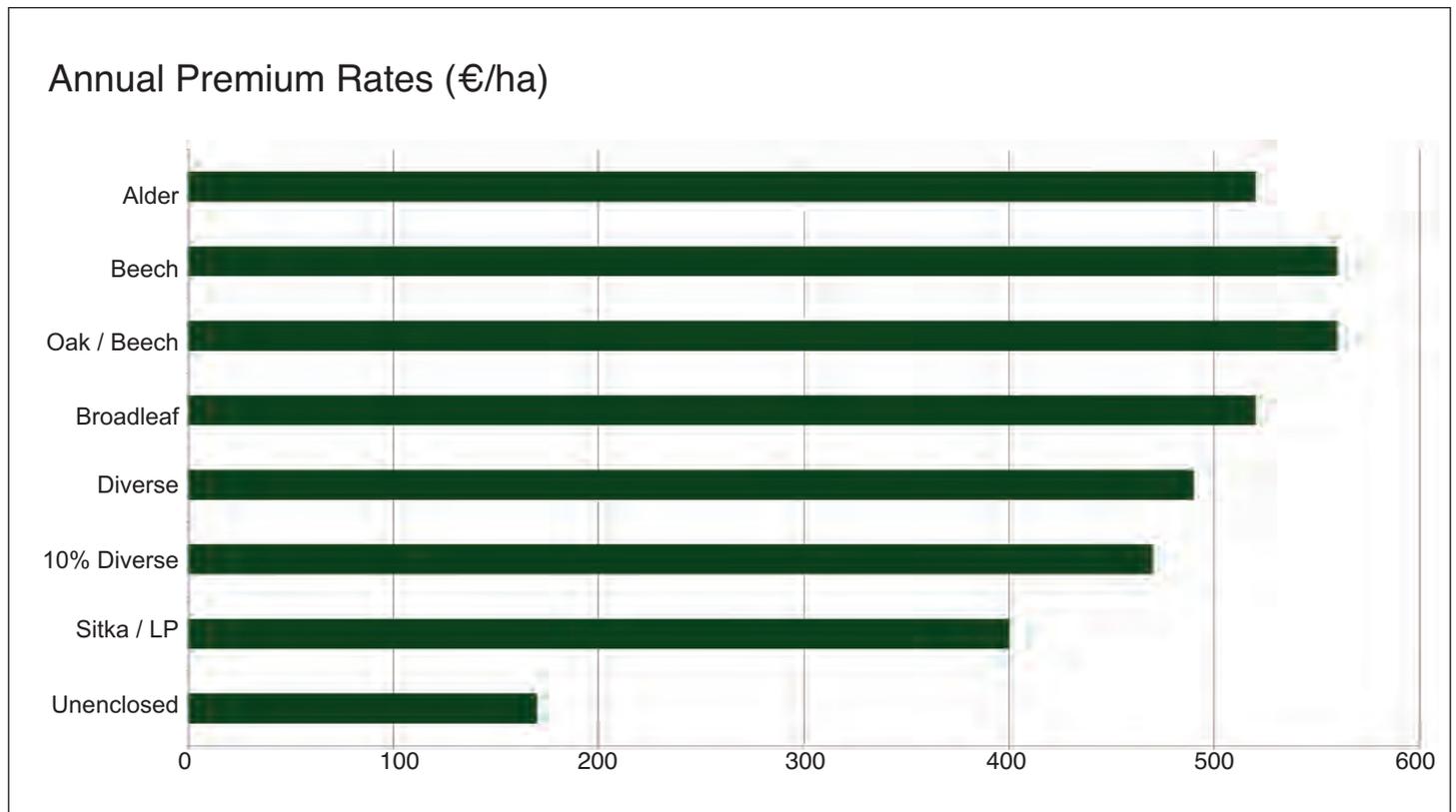
- An investment of €482 million in new forests over the programme period.
- The establishment of 44,000 ha of new forests by 2020.
- Building of 700 km of new forest roads by 2020.

The programme includes for the first time a Forestry for Fibre scheme to produce biomass for the rapidly expanding wood energy sector.

Afforestation Grant and Premium Scheme: Under the Forestry Programme (2014-2020), the Forest Service administers the state funded Afforestation Grant and Premium Scheme. This provides grant aid in two instalments to those who plant forests.

The grant covers the full cost of establishing the forest crop and maintaining it up to free growing stage which is typically at the end of year four. In essence investors will get their forest planted for free, thus limiting their investment to the capital cost of the underlying land.

Investors are also entitled to annual forest premiums for a period of 15 years with the rate varying depending on species and area. Up to this year, farmers received a much higher rate of premium but now the annual premium is the same for all, increasing the attractiveness of forestry as an investment for those previously classed as non-farmer.



Growth Rates: The two key factors that determine the returns from investment in forestry, other things being equal, are the biological growth of the trees and timber price movements. Growth rates are usually expressed in terms of yield class which is the average volume (cubic metres) growth per hectare per year over the life of the crop. Regarding biological growth, Ireland has a number of distinct advantages over other European countries due to its mild climate and relatively longer growing season:

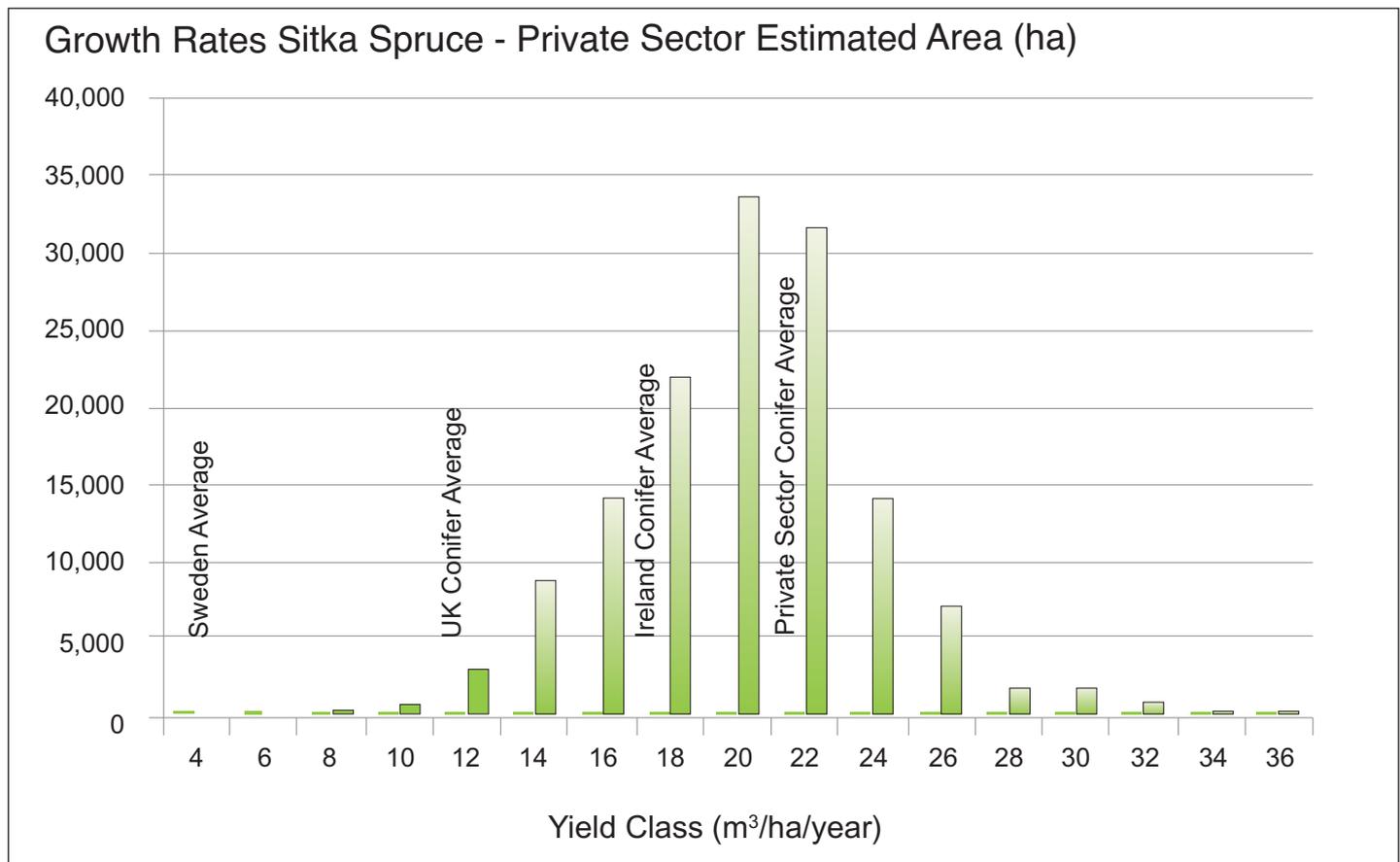
- Growth rates are 2-3 times greater than those achieved in mainland Europe; and
- Ireland's relatively low incidence of tree diseases means that growth losses are minimal in comparison with other countries.

Timber Prices: The timber prices achieved in Ireland have traditionally been higher than those achieved in our nearest neighbour in the UK. Over the years timber prices have kept pace with inflation and many analysts believe that timber prices especially within Europe will increase relative to inflation in the long term due to a combination of emerging energy markets, compliance with EU renewable energy targets and the forecast supply demand for traditional wood products.

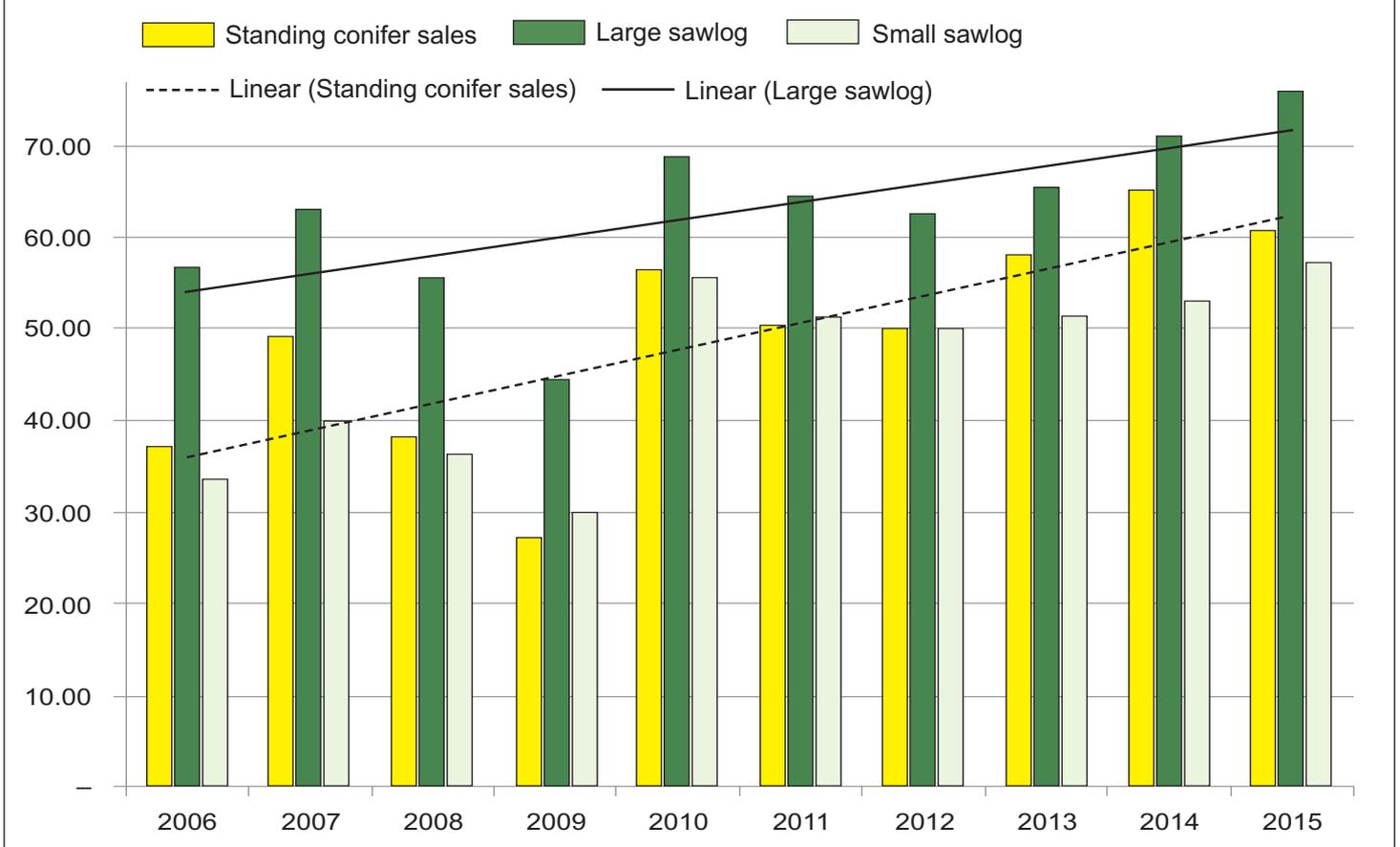
Having fallen between 2007 – 2009 as a result of the steep decline in demand from the domestic construction industry, timber prices have recovered as a result of the sawmills developing export markets. Prices are now above 2007 levels while the Irish construction demand has now begun to recover.

“
The timber prices achieved in Ireland have traditionally been higher than those achieved in our nearest neighbour in the UK.
”

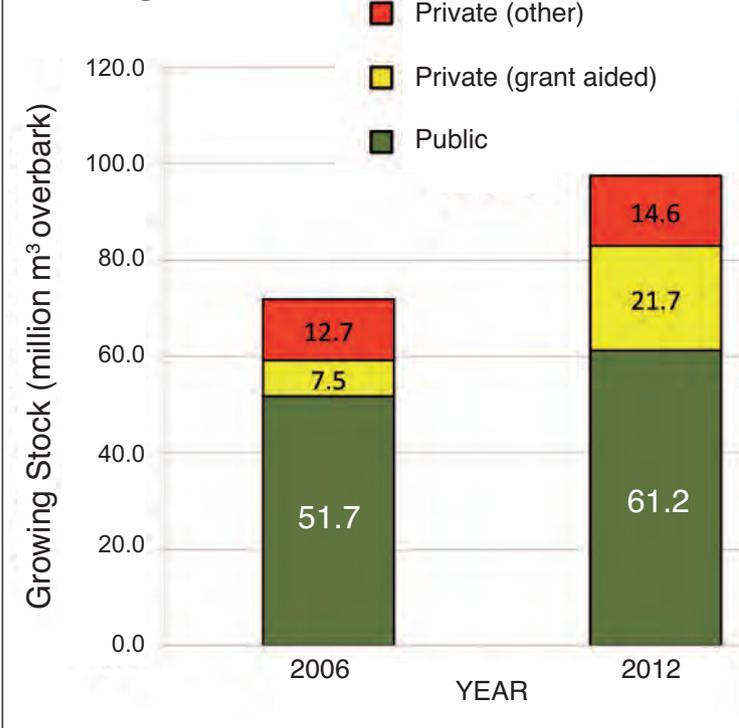
In 2010 the UK was the third largest global net importer of timber after China and Japan. The UK will continue to be one of the world's largest importers due to the relatively small volumes of home-grown timber forecast to be available into the future. Ireland is ideally positioned to access this major market and this proximity to the UK combined with our excellent growth rates provides forestry investors here with a competitive advantage over their counterparts on mainland Europe and elsewhere.



Timber Prices Ireland



Growing Stock NFI



Private Sector: Coillte manages approximately 53% of the forest area in Ireland and currently supplies circa 80% of the volume sold to the wood panels and sawmilling sectors. The introduction of improved grants and forest premium payments for afforestation towards the end of the 1980's and their continuance saw the expansion of the private sector which now extends to circa 360,000 ha.

“

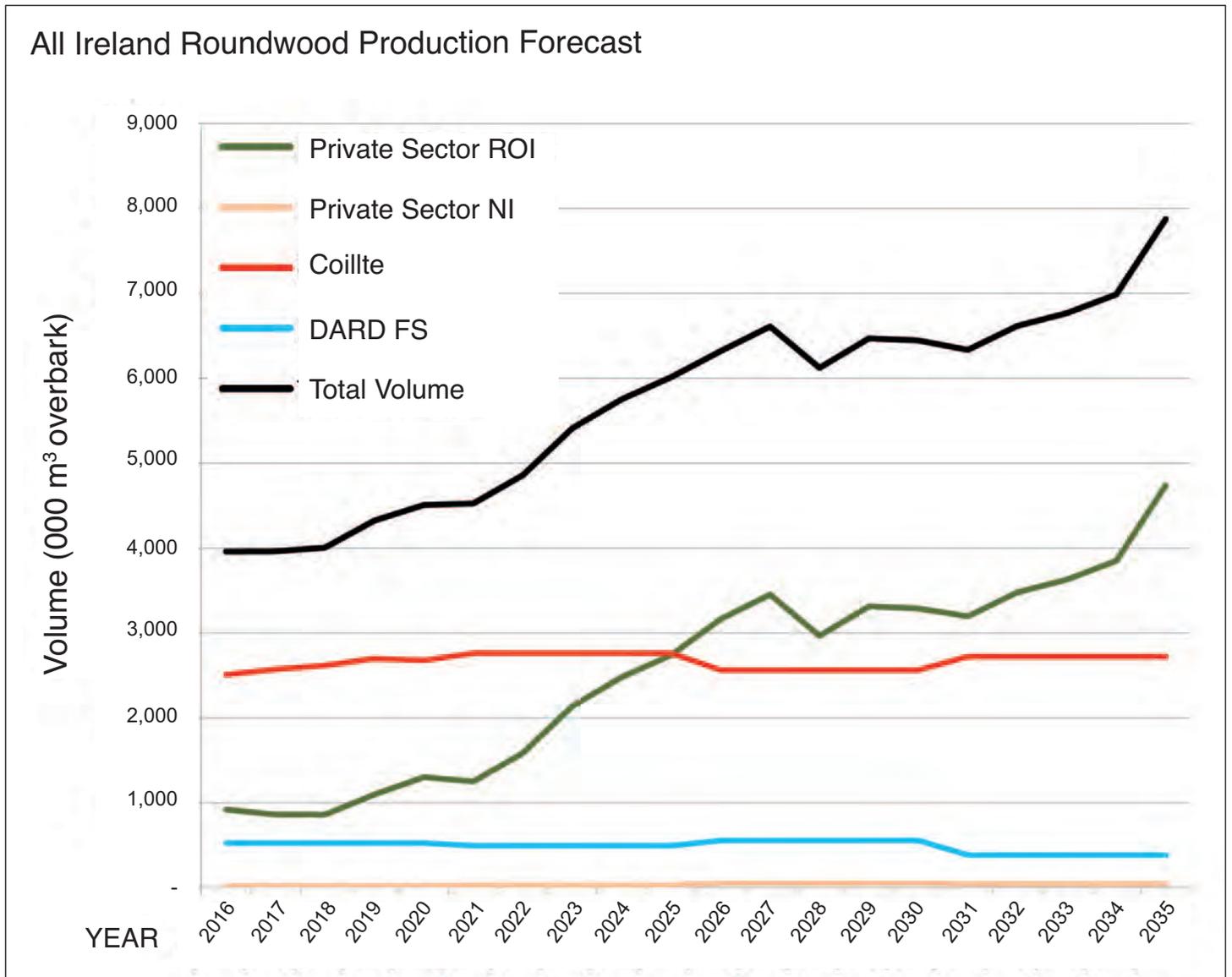
The National Forest Inventory (NFI) estimated the total standing growing stock in forests as 97.48 million m³ in 2012. This represents an increase of 25.62 million m³ on the 2006 standing volume³

”

The National Forest Inventory (NFI) estimated the total standing growing stock in forests as 97.48 million m³ in 2012. This represents an increase of 25.62 million m³ on the 2006 standing volume³.

³ Forest Service. 2013. National Forest Inventory – Republic of Ireland – Results Covering the National Forest Inventory, 2009 to 2012. Forest Service, Wexford.

All Ireland Roundwood Production Forecast



During the same period the growing stock has nearly tripled in the private (grant-aided) forests. Public forests contain nearly twice the growing stock of private forests, but the gap is decreasing rapidly as the younger private forests begin to mature.

This is reflected in the recent All Ireland roundwood production forecast where supply from the private sector is responsible for the increased volumes and is estimated to exceed that of Coillte by 2025.

Recent analysis undertaken by COFORD estimates that despite an increasing timber supply from the private sector, demand will continue to outstrip supply into the foreseeable future. This has resulted in some sawmills resorting to importing round logs to ensure sufficient supply of raw material to meet orders.

“
Recent analysis undertaken by COFORD estimates that despite an increasing timber supply from the private sector, demand will continue to outstrip supply into the foreseeable future.
”

Future increases in supply are dependent on those coming from the private sector as both Coillte's and the DARD FS (Northern Ireland) future roundwood supply forecasts show little if any increase.

Income from the occupation of woodlands in the State, managed on commercial basis and with a view to the realisation of profits, is exempt from Income Taxes for individuals and companies regardless of their residence or domicile. The High Earners Income Tax restriction which limited the exemption to €80,000 per annum was abolished on 1 / 1/ 2016.

Woodland Grants are not treated as income but in the preparation of Annual Accounts by an owner the cost of planting and maintenance should be shown as net of grants received.

PRSI: Income from commercial woodlands, including the forest premium, is reckoned for the purposes of PRSI.

Universal Social Charge: Income from commercial woodlands, including the forest premium, is reckoned for the purpose of USC.

Rates of Charge:

- 1% of income up to €12,012
- 3% of income from €12,013 to €18,668
- 5.0% of income from €18,669 to €70,044
- 8% of income from €70,045 to €100,000
- 11% of income over €100,000 on Self-employment income only

Capital Gains Tax: Commercial woodlands occupied by individuals are exempt from CGT on the growing timber. The underlying land is not exempt but chargeable gains are restricted to the surplus over inflation adjusted cost. CGT is not applicable to a disposal on death. The exemption does not apply to companies which occupy woodlands. The current rate of CGT is 33%.

Value Added Tax: Commercial forestry operation is regarded as agricultural production and exempt from VAT but the exemption may be waived. It may be efficient to waive exemption and thus recover VAT on all the inputs of goods and services supplied to the woodland occupier.

Repayments of VAT are made promptly even though the woodland may not produce any taxable supplies for many years. Once registered for VAT, any supply by the woodland, including disposal, will attract a charge to VAT.

An unregistered woodland owner can add flat rate VAT of 5.2% to an invoice to compensate for VAT inputs that were incurred but cannot be recovered. The invoice must make it clear that the owner is not registered and that it is merely the flat rate refund.

Stamp Duty: Growing timber in commercial woodland is exempt from Stamp Duty but the underlying land is not.

Non-residential property:	2%
Residential up to €1m:	1%
Over €1m:	2%

Transfers of property between spouses and within group related companies are exempt.

“

Income from the occupation of woodlands in the State, managed on commercial basis and with a view to the realisation of profits, is exempt from Income Taxes for individuals and companies regardless of their residence or domicile.

”

Capital Acquisitions Tax (Inheritance and Gifts):

Commercial woodlands in the State are subject to CAT on gifts to, or inheritance by individuals regardless of the residence or domicile of the donor and beneficiary. In addition to specified exempt thresholds, relief is available to commercial woodlands as agricultural property.

The relief, as a reduction in market value is available as follows:

- A flat rate reduction of 90% applies to both inter-vivo gifts and inheritance of commercial woodlands
- All gifts and inheritance between husband and wife are exempt from CAT
- The woodlands can be located in any Member State of the European Union and still attract Agricultural relief.

Agricultural relief is restricted and is subject to the '80% agricultural property' test and 'active farmer' requirements. The recipient of the woodlands must retain them for 6 years but can sell and purchase replacement woodlands in the 6 year period without losing the 90% Relief. Sale of timber in the 6 year period does not affect the Relief.

Relevant Contract Tax: This is not a tax on forestry but it is a procedure to ensure tax compliance by forestry contractors. It can apply where a forest owner engages a contractor to harvest timber. If in doubt Revenue should be contacted and set procedures followed. Revenue will then instruct on any relevant deductions.

⁴ Forest Service. 2013. National Forest Inventory – Republic of Ireland – Results Covering the National Forest Inventory, 2009 to 2012. Forest Service, Wexford.

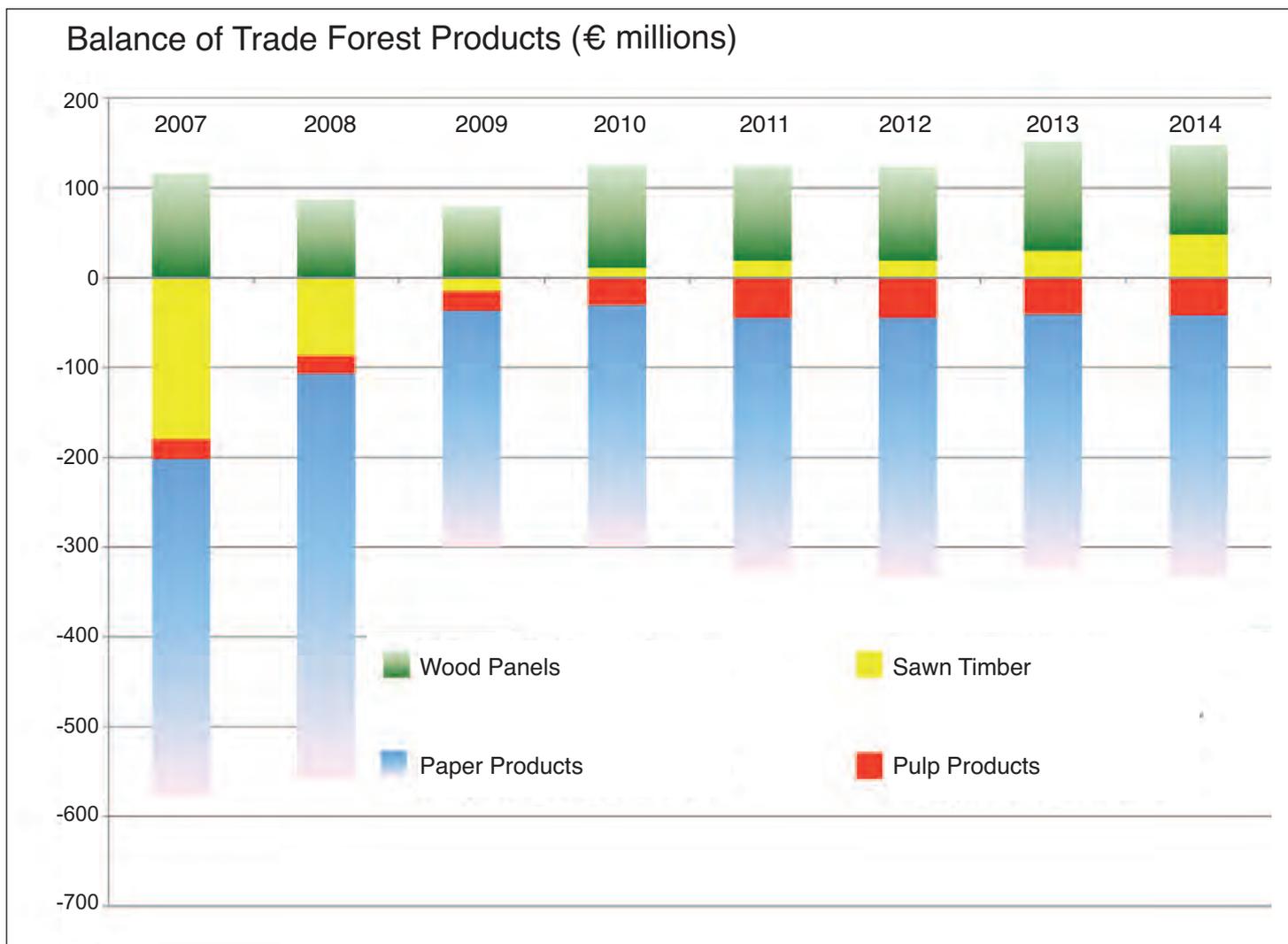
Irish Forest Sector

Ireland has a well developed wood processing sector with a number of large modern high technology sawmills and three world class wood panel manufacturing plants. The wood energy sector is relatively young but recent developments has seen the commissioning of one large combined heat and power (CHP) plant and two wood pellet manufacturing plants. An additional CHP plant is under construction and planning approval has been granted for two more.

Ireland is a net exporter of wood based panels and sawn timber. Irish manufactured forest products continue to perform well in export markets. Ireland's market share of the UK sawn softwood timber market has more than doubled from 3.3% in 2007 to 7.0% in 2014. Moreover, in 2014, Ireland was the fourth largest exporter of sawn softwood timber to the UK. There are further opportunities for the Irish sawmilling sector to grow market share in the UK⁵.

Irish timber processors and panel manufacturers have developed innovative new products, such as eased-edge structural timber by the Murray Timber Group and the development of SmartPly SiteProtect by Coillte Panel Products (CPP).

The success of the wood processing sector is reflected in the strong demand for timber. The 2014 COFORD wood mobilisation report concluded that rapid and effective implementation of its recommendations will be needed to avoid high levels of imports of biomass fibre for energy needs (in the region of 1.4 to 1.6 million cubic metres per annum), and sawlog (in the range 0.1 to 0.4 million cubic metres). The report noted that while a level of sawlog imports (mostly from Scotland) is already taking place, and firewood, pellets and some wood chip are being imported, it is likely that future demand for wood fibre in Europe will drive the prices of these commodities higher.



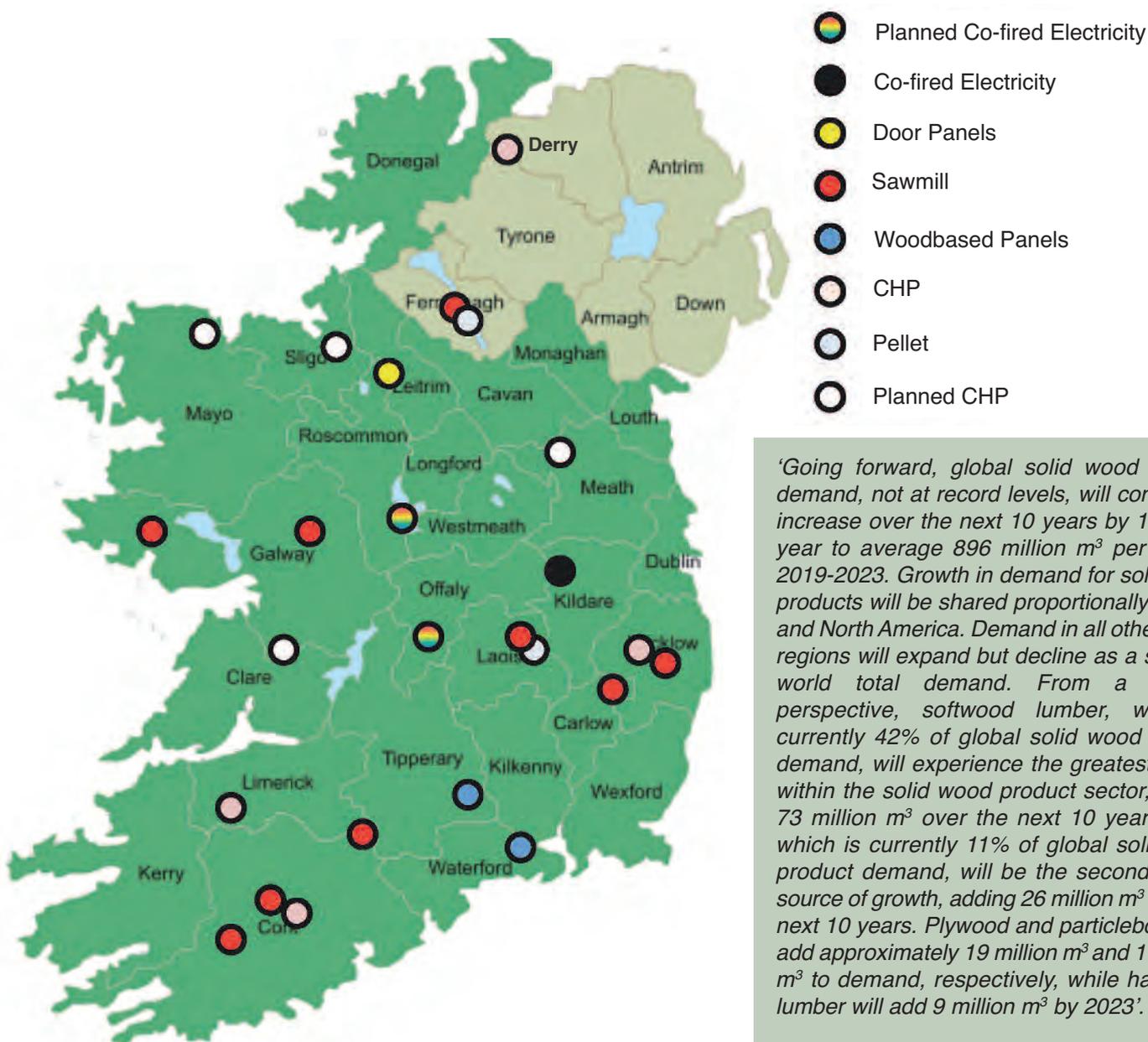
⁵ Forest Service. 2013. National Forest Inventory – Republic of Ireland – Results Covering the National Forest Inventory, 2009 to 2012. Forest Service, Wexford.

The UNECE Outlook Study⁶ concluded that 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 used for wood energy. Furthermore, if wood is to play its part in reaching the targets for renewable energy, there would have to be a strong mobilisation of all types of wood.

Supply would have to increase by nearly 50% by 2030.

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.

Current and Planned Wood Industries



'Going forward, global solid wood product demand, not at record levels, will continue to increase over the next 10 years by 1.9% per year to average 896 million m³ per year in 2019-2023. Growth in demand for solid wood products will be shared proportionally by Asia and North America. Demand in all other global regions will expand but decline as a share of world total demand. From a product perspective, softwood lumber, which is currently 42% of global solid wood product demand, will experience the greatest growth within the solid wood product sector, adding 73 million m³ over the next 10 years. MDF, which is currently 11% of global solid wood product demand, will be the second largest source of growth, adding 26 million m³ over the next 10 years. Plywood and particleboard will add approximately 19 million m³ and 17 million m³ to demand, respectively, while hardwood lumber will add 9 million m³ by 2023'.

Source: RISI 2014 World Sawlog Study

⁶ UNECE (2011) The European Forest Sector Outlook Study II



There are various risks with any investment asset class or opportunity. Forestry is regarded as a low risk investment. However, low risk is not the same as "no risk" and it is important that investors in forestry are aware of the potential risks to their forest asset which under Irish conditions include:-

- Wind damage
- Pest and diseases
- Liquidity
- Economic

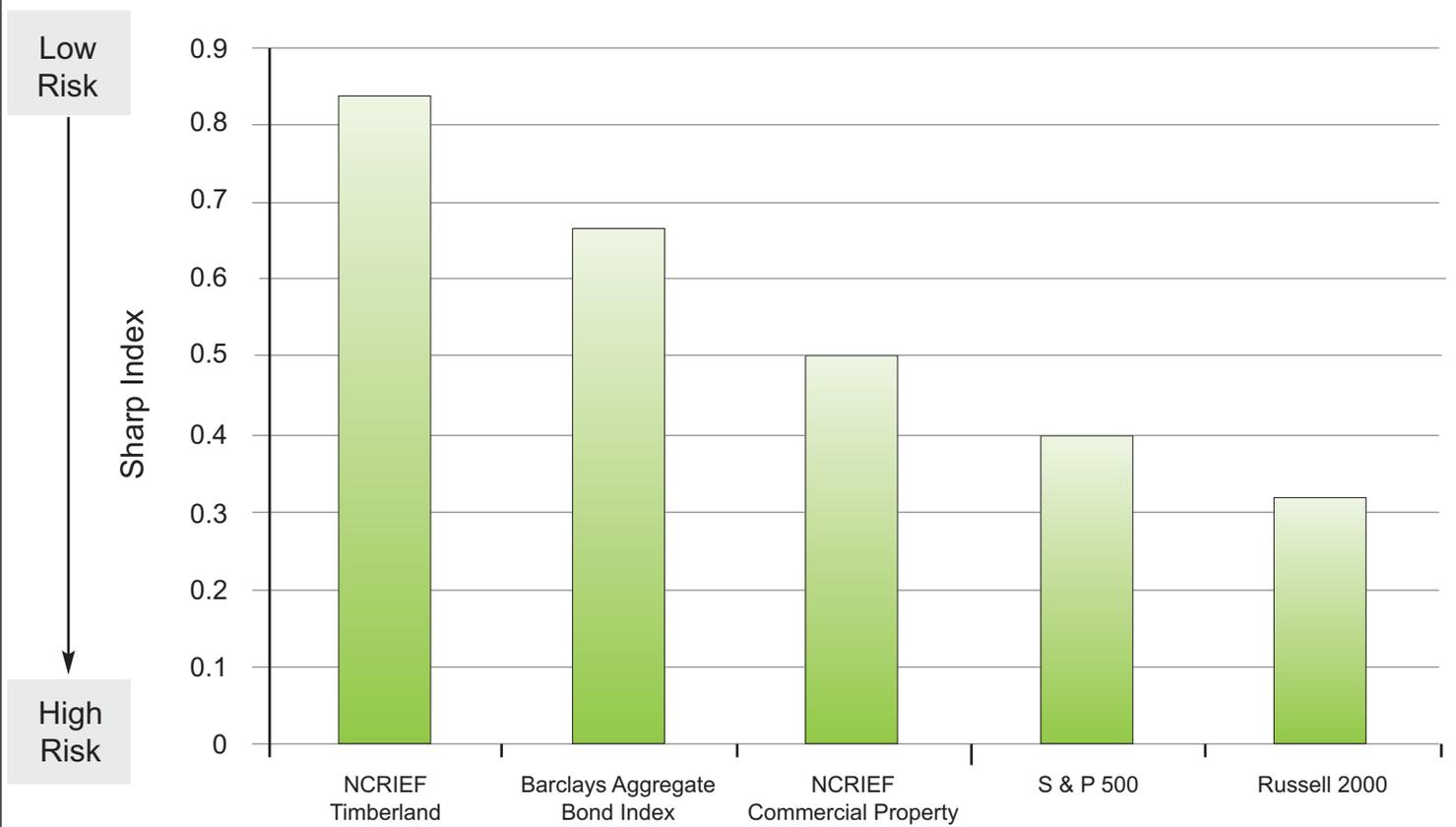
Wind: Ireland is a windy country relative to most others in Western Europe, although perhaps not experiencing the extreme wind speeds that sometimes occur elsewhere. Wind coupled with wet mineral or organic soils can predispose forest crops to windthrow, often cutting short the preferred rotation length and reducing the overall financial return.

This risk can be mitigated by careful site selection, best practice site cultivation and appropriate silviculture and thinning practices.

Pests and Diseases: Globally there have been outbreaks of different pests and diseases in commercial forestry, as for example the mountain pine beetle outbreak in British Columbia which has since the early 1990s devastated circa 50% of Lodgepole pine stands. Luckily there have been no major pest or disease outbreaks in Ireland due in part to our island status and the strict phyto-sanitary regulations regarding the import of timber and forest reproductive material.

The reported incidence of *Chalara* (Ash dieback) and *Phytophthora ramorum* (Sudden oak death) in the media affect Ash and Larch respectively, neither of which would be a first choice as a major species for forestry investment.

Investment Risk



Ireland has Protected Zone status for a range of forest pests under EU Directive 2000/29/EC and the Forest Service undertakes annual monitoring of imports and the forest estate to maintain this status.

The risk of pests and diseases can be mitigated at local level through active and vigilant forest management.

Liquidity: A forest investment is relatively illiquid and cannot be cashed in the same way as say for example money on deposit or shares in a company. It takes time to sell a forest plantation / forest portfolio due to the time for due diligence and to ensure value for the seller. The secondary market for plantations is however actively growing in Ireland. It is possible to mitigate against illiquidity through careful site selection, species choice and active management making the plantation attractive to potential purchasers.

Economic: Economic risk can be defined as the historical volatility associated with an investment's return.

The Sharpe ratio which measures risk adjusted performance shows that forests / timberland exhibits less risk and volatility than other asset classes.

Demand for timber, which is a globally traded commodity, could reduce leading to a fall in timber prices and a reduction in the value of the forest investment. Any such future drop in demand is impossible to predict.

“

It is possible to mitigate against illiquidity through careful site selection, species choice and active management making the plantation attractive to potential purchasers.

”

The UNECE (United Nations Economic Commission for Europe) study⁷ shows that the expectation is for wood demand to increase from 739 million m³ in 2010 to 853 million m³ by 2030. This same study also expects steady increases in price driven by demand and emerging scarcities. The study concludes that in relation to wood for energy that, although at present there is no shortage of energy wood on world markets, the level of future reliable long term supplies is rather uncertain.



⁷ UNECE (2011), *The European Forest Sector Outlook Study II*

Why Forestry Services?

Forestry Services Ltd. is a private forestry company established in 1985 specialising in providing the complete range of professional forestry services to all forest owners and persons considering investing in forestry in Ireland.

Afforestation: Our team of professional foresters have specialist knowledge and expertise in afforestation across all sites types, species and planting schemes. We offer a tailored four year contract to clients for the establishment and maintenance of their plantation. This covers all aspects relating to approval and payment under the Afforestation Scheme. We can complete all paperwork and applications for grant aid, if required.

Forest Investment: Irrespective of whether you have a large or small sum to invest in existing forests or in afforestation, we can identify a suitable portfolio of forests or lands for planting to match your needs and the level of your investment. We can advise on species choice and future management to maximise returns.



Forest Valuation: We can provide forest valuations for a wide range of purposes. We have our own dedicated timber growth and financial modelling software to assist in the valuation process and can provide detailed cashflows over the life of the forest investment. We can provide annual valuations to assist in the financial management of your investment.

Forest Management: We have a team of dedicated foresters countrywide who have specialist knowledge and expertise in forest management. We pride ourselves on how we manage each and every plantation under our stewardship. We agree and implement with our clients an annual work programme to ensure that their forests are appropriately managed and that all potential risks to their investment are minimised through expert professional care.

Forest Roads: We arrange for the necessary permissions in relation to forest roads. We can arrange for the design, construction and any special construction works required and ensure compliance with all aspects of health and safety and guidelines on forest road construction. We maintain and repair the roading infrastructure if required.



Harvesting: We have a dedicated Harvesting Manager who collaborates with our countrywide team to ensure the delivery of a first class professional harvesting service. We can arrange for the necessary felling licence; undertake the marking and measurement of the timber; package and target the sale to ensure the best price; arrange, organise and supervise the harvesting; ensure compliance with health and safety, environmental and industry best practice guidelines.

Reforestation: We offer a tailored contracts to clients for the reforestation of their plantation following clearfell and can undertake and supervise all operations ensuing the establishment of a healthy and fully stocked replacement crop.



Appendix I Forest Valuation

Forest valuations have a number of features related or common to other asset classes, however they present some unique challenges in terms of:

- Biological processes and their performance over time;
- The ability, within limits, to defer timber harvesting and resultant revenues to take advantage of market prices;
- The evaluation of risk that can impact on timber volumes and revenues e.g. storms, disease, pests and climate change;
- The apportionment of value between the forest crop and the underlying land (may be required for taxation purposes); and
- The impact of external roading infrastructure and access and distance to markets;

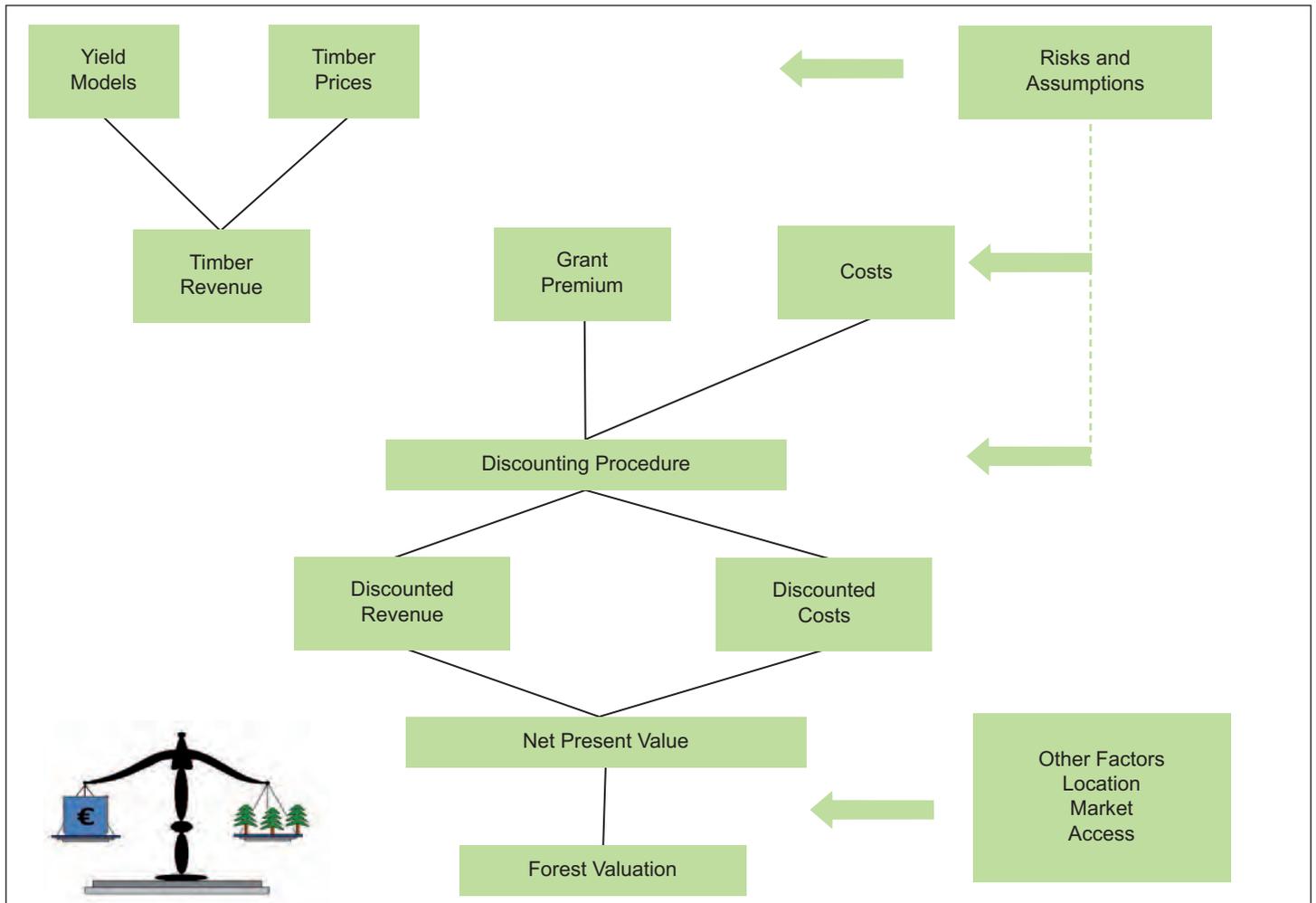
The main method used for valuing forests to approximate the market value is Discounted Cash Flow (DCF) adjusted to take account of recent forest sale transactions where present and other relevant factors.

Irrespective of the actual method used to determine the value of a forest, there are a number of factors which can either singly or in combination impact on the particular valuation. It is important to have an understanding of these factors and their influence on any valuation.

The factors fall into a number of main categories:

- Physical factors;
- Forest crop details;
- Legal and regulatory factors;
- Forest policy and support measures; and
- Market considerations.

A forest valuation is generally required for a specific purpose e.g. sale, insurance cover, disclosure in financial statements, probate, compulsory sale, compensation etc. The same valuation may be appropriate for a number of different purposes but there will be important differences in forest valuations for some purposes.



Sample cash flow forecast including costs, timber volumes and revenues

Client	Sample Cashflow
Reference	Ex 1
Total Area	10.00 ha
Productive	9.00 ha

Unadjusted NVP	120,380	Per Acre
Total Revenues	335,643	13,583
Total Costs	10,560	427
Balance	325,083	13,156
Adjusted NVP	126,399	5,115

Totals	Costs					Revenues		Volumes		Annual Equivalent		NPV	Year
Year	Estab + Refor + Inv	Maint	Insurance	Paths + Fertilizer	Roads + Repairs	Other Revenues	Timber	Thin	Clearfell	Net Cash	Cumulative	NPV	Year
2016	-	180	160	-	-	4,400	-	-	-	4,060	4,060	3,867	2016
2017	-	180	160	-	-	4,400	-	-	-	4,060	8,120	3,683	2017
2018	-	180	160	-	-	4,400	-	-	-	4,060	12,180	3,507	2018
2019	400	180	160	800	-	4,400	-	-	-	2,860	15,040	2,353	2019
2020	-	180	160	-	-	-	-	-	-	- 340	14,700	- 266	2020
2021	-	180	160	-	-	-	-	-	-	- 340	14,360	- 254	2021
2022	-	180	160	-	2,880	-	6,004	650	-	2,784	17,144	1,979	2022
2023	-	180	160	-	-	-	-	-	-	- 340	16,804	- 230	2023
2024	-	180	160	-	-	-	-	-	-	- 340	16,464	- 219	2024
2025	-	180	-	-	-	-	-	-	-	- 180	16,284	- 111	2025
2026	-	180	-	-	-	-	-	-	-	- 180	16,104	- 105	2026
2027	-	180	-	-	240	-	21,543	665	-	21,123	37,227	11,762	2027
2028	-	180	-	-	-	-	-	-	-	- 180	37,047	- 95	2028
2029	-	180	-	-	-	-	-	-	-	- 180	36,867	- 91	2029
2030	-	180	-	-	-	-	-	-	-	- 180	36,687	- 87	2030
2031	-	180	-	-	-	-	-	-	-	- 180	36,507	- 82	2031
2032	-	180	-	-	240	-	33,643	696	-	33,223	69,730	14,495	2032
2033	-	180	-	-	-	-	-	-	-	- 180	69,550	- 75	2033
2034	-	180	-	-	-	-	-	-	-	- 180	69,370	- 71	2034
2035	-	180	-	-	-	-	-	-	-	- 180	69,190	- 68	2035
2036	-	180	-	-	-	-	-	-	-	- 180	69,010	- 65	2036
2037	-	180	-	-	240	-	36,816	696	-	36,396	105,406	12,442	2037
2038	-	180	-	-	-	-	-	-	-	- 180	105,226	- 59	2038
2039	-	180	-	-	-	-	220,037	-	3,685	219,857	325,083	68,171	2039
2040	-	-	-	-	-	-	-	-	-	-	-	-	2040
2041	-	-	-	-	-	-	-	-	-	-	-	-	2041
2042	-	-	-	-	-	-	-	-	-	-	-	-	2042
2043	-	-	-	-	-	-	-	-	-	-	-	-	2043
2044	-	-	-	-	-	-	-	-	-	-	-	-	2044
2045	-	-	-	-	-	-	-	-	-	-	-	-	2045
	400	4,320	1,440	800	3,600	17,600	318,043	2,706	3,685	325,083		120,380	



Forestry Services Limited
Cillín Hill Business Park
Kilkenny City, Ireland
Loc8 Code: RD8-71-3FJ

Tel: +353 (056) 770 2242
Email: info@forestryservices.ie
Website: www.forestryservices.ie