Draft Code of Practice - Valuation of Commercial Plantations

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"It will be essential for continued confidence in private afforestation, and for liquidity in forest markets that forest owners are confident in selling and seen to receive fair compensation for their forests."

There is an absence of a standardised approach to forest valuation in the Republic of Ireland (RoI). With approximately 11% of the country under forests, increasingly many more forest plantations will need to be valued not just for sale and purchase but as part of probate, as security for loans, family settlements and mediation, insurance, annual and investor reporting, utility compensation, compulsory purchase orders, stamp duty, arbitration and other reasons. It will be essential for continued confidence in private afforestation, and for liquidity in forest markets that forest owners are confident in selling and seen to receive fair compensation for their forests.

Against this background, the Forest Service agreed to support the development of a Code of Practice (CoP) for the Valuation of Commercial Forest Plantations. The CoP is at draft stage and the final version is expected to be published in early 2013. It is comprehensive and covers all aspects of forest valuation including (a) factors affecting value, (b) valuation methods, (c) land value, (d) revenues and costs, (e) forecasting timber volumes, (f) discount rates, (g) treatment of risk, (h) special considerations, (i) preparing a valuation including the valuation report.

The CoP aims to provide guidance to all involved and with an interest in the valuation of forest assets. It is limited in scope to the commercial aspects of forest management and does not address "values" which are not traded or recognised directly in the market place.

Valuation Methods

Market value is the estimated amount for which an asset or liability should exchange on the valuation date between a willing buyer and a willing seller in an arm's length transaction after proper marketing and where the parties had each acted knowledgeably, prudently and without compulsion (*1*). Forest valuation is the process of establishing, by conventional calculation, a figure that is a surrogate for the market price and should contain any procedure that increases its realism (*2*).

There are a variety of methods used to estimate forest value. Some are based on accounting practices, while others

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owe their origin to either modern economic theory or are rooted in the approaches adopted by such foresters as Cotta and Faustmann in the first half of the nineteenth century (*3*). The four main methods for valuing forests are:

a) Transactions Method;
b) Cost Based Methods;
c) Lump Sum Method; and
d) Expectation Value - present value or discounted cash flow (DCF).

Irrespective of the 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. Thus before one selects the most appropriate methodology, 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:

a) Physical factors;
b) Forest crop details;
c) Legal and regulatory factors;
d) Forest policy and support measures; and
e) Market considerations.

The CoP provides guidance on how these can influence the determination of market value.

Growth Models

Traditionally in forestry in Ireland static stand growth models have been used to predict future volume production. These models, as for example the Forestry Commission Yield Tables, predict stand parameters (such as volume, stocking or basal area) over time based on assumed management interventions (thinnings). In this regard they are limiting as any deviation from the norm is not catered for within the model.

Dynamic models exhibit greater flexibility in terms of modelling different crop treatments. They can cater for a range of initial stand states (stocking, basal area and height) and variation of management intervention (timing of thinnings, number of thinnings and thinning intensity). GROWFOR refers to the software package that provides a user interface for the Irish suite of dynamic stand level growth models. In addition to facilitating interactive modelling of different management regimes, GROWFOR has some additional functionality such as the option to define different timber size assortments (*4*). Use of GROWFOR requires a software licence and participation in an official training course.

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Discount Rate

The discount rate expresses the investor's time preference for funds and their perception of risk. Forest valuations are extremely sensitive to the discount rate used due to the length of time between planting and final harvest which can vary from 30 years for conifers to over 100 years for some broadleaf species like oak.

In general terms, the discount rate represents the sum of a benchmark risk free rate and a risk premium, which in turn can be broken into two components (*5*):

a) *Systematic risk* (also known as non-diversifiable risk and market risk when related to an investment). This part of the risk in a business's performance is attributable to market wide economic forces, such as inflation, interest rates or business cycles that affect all investments to some extent.
b) *Non-systematic risk* (also known as diversifiable risk or unique risk). This component is due to factors that are specific to the investment, in this instance to forestry.

There is no perfect "discount rate reference manual" that identifies a suitable discount rate for every type of forest investment, rather discount rates must be estimated. The CoP provides guidance on a number of approaches to determine the appropriate discount rate.

Treatment of Risk

There is no such thing as a completely risk free investment. As a form of investment, forestry in countries with a stable political system, clear land ownership rights and access to timber markets can be considered a low to medium risk investment. There are risks however and it is important to state them clearly and where possible to account for them in any valuation. Risks can be classified as being either:

a) Nature based; or
b) Market based.

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Nature based risks include windthrow, fire, frost, flooding, disease, and pests. The impact of the risk can be reduced through insurance, the selection of appropriate management

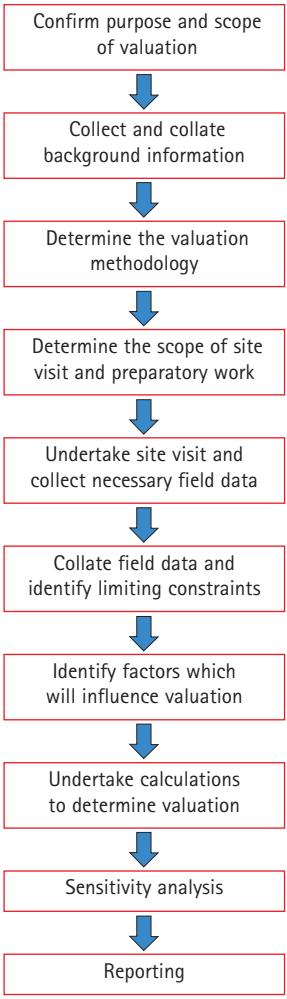

Figure 1: Steps in preparation of forest valuation

regimes and adherence to best practice. As a general rule, risk should be accounted for in the future cashflows rather than simply increasing the discount rate and the CoP provides guidance in this regard.

There are a number of aspects to market based risks. The industry capacity may not expand in line with forecast roundwood production, resulting in an oversupply of timber. Timber price increases may not keep pace with inflation resulting in lower timber revenues than anticipated. Irish forest industry is increasingly dependent on export markets and changes in the exchange rate may either have a negative or positive impact on the price that the industry can afford to pay for timber raw material.

Preparing a Valuation

There are a number of defined steps in the preparation of any forest valuation (Figure 1). The resources required to undertake a valuation will be related to a combination of the purpose and scope of the valuation as provided by the client together with the extent and stage of development of the forest plantation. The larger the plantation area and the more mature the forest crop, the greater the resources required to determine value and the more intensive any sampling of crop data.

The steps can be considered as comprising four phases:

a) Preparation phase;
b) Site visit and data collection phase;
c) Calculations and modelling phase; and
d) Reporting phase

For each of these phases, the CoP provides guidance on what to be aware of including the information to be collected, a checklist for the most appropriate method, sources of useful information and headings for the valuation report.

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