

# **Guidelines for the valuation of forest properties**

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**There are a number of valuation methods which can be employed to value a forest crop.**

**The three main potential valuation methods include:**

- 1) Historical cost valuation**
- 2) Realisation/liquidation value**
- 3) Net Present Value (NPV) or Net Discounted Revenue (NDR) Value**
- 4) Transaction based approach**

**1) Historical cost valuation:**

**This involves valuing the forest crop at cost (i.e. the total cost actually incurred to date in establishing and maintaining the forest crop) and increasing this value yearly to account for the growth increment in the crop. This method of valuation would generally only be applicable to very young crops, and would generally be employed by an owner to update the value for accounting purposes on an annual basis. While there may be certain circumstances in young crops in which this valuation method might be used, it does not take into account the productivity of the crop, which ultimately will define its value. Also, sites of lower productivity may be more difficult and costly to develop and establish due to difficult site conditions, poor drainage, repeated fertiliser requirements, elevation, poor access and other factors. Because higher costs may be involved in establishing such areas they would be given higher values employing this valuation method than areas of higher productivity. The most important factor that militates against employing this method of valuation in recent years is that grant aid will currently cover the entire costs involved in developing and establishing a plantation. Therefore, the actual cost incurred by a landowner in establishing the forestry investment is nil other than the land opportunity costs involved.**

**2) Realisation/liquidation value:**

**The realisation value of a forest crop, as its name suggests, values a forest at the value it would realise if the crop is harvested at that particular point in time. It therefore only values the stage of a crop when timber is marketable, effectively from the time of first thinning onwards by assessing standing timber volume and valuing this using current market timber prices. A problem with this valuation method is that a forest crop in the establishment and thicket stage up to the time of first thinning has no realisable value. This effectively neglects the potential value of the immature crop and therefore is not an appropriate method of valuation until there is a realisation value after first thinning stage. Also, as for the historical cost valuation method it does not take into account the productivity of the crop, which ultimately will define the longer term value of a forest.**

**3) Net Present Value or Net Discounted Revenue valuation:**

**The Net Present Value (NPV) or Net Discounted Revenue (NDR) value is unlike the two previous valuation methods in that it is based only on projected future incomes and expenditures and these are discounted to the present day at a particular discount rate decided by the valuer or buyer. Therefore, no account of either past income or expenditure is taken into consideration and the valuation is based effectively on the future potential of the crop. This method should therefore more accurately reflect what an interested purchaser is likely to consider the value of a crop, as this valuation method will assess his future return on an investment.**

**The return which an investor is likely to seek from a forestry investment will be dependent on a number of factors, but the most significant influence will be the return he can achieve from competing investments and the comparative risks associated with these alternatives. For general forestry valuation purposes the net discounted revenue valuation method is therefore the most appropriate basis of valuation to employ in most cases. This method of valuation is also recommended by the Society of Irish Foresters, which is the representative body for the forestry profession in Ireland, in their Policy Position Paper, “Investing in Forestry”.**

**As the most important factor in determining the NDR valuation is the discount rate that is employed in the projected cashflow, careful consideration must be given to this rate. The internal rate of return (IRR) for a particular crop or investment is the discount rate at which the total of the discounted revenues equals the total of the discounted costs. This is effectively the real rate of return or the financial yield of the investment.**

**4) Transaction based valuation:**

**The transaction based approach involves the analysis of market transactions. It is the theoretically correct procedure to estimate the market value for a forest. The analysis essentially involves an interpolation or extrapolation of the values of past sales and applying the result to the forest of interest. Even if forest value is not inferred from past transactions, it may be possible to infer other relevant factors from sales e.g. implicit discount rate or timber price assumptions.**

**The availability of transaction information varies from country to country as does the volume of transactions. The volume of annually traded private forests varies from 0.1 to 0.15% in Austria (Sekot 1999) and 0.17 to 0.23% in Finland (Muukkonen 1999). Transaction information is, as a general rule, more available in free market countries with a long forest tradition. Despite the availability of transaction information in Finland, the net present value is the preferred valuation method and that most widely used in the sales of forest properties (Muukkonen, 1999).**

Muukkonen, J. – Statistics Finland (1998): European Forest Accounting: Pilot accounts for forest accounting in Finland: a pilot study for Eurostat and DGXI

Muukkonen, J. – Statistics Finland (1999): Valuation of forests: a pilot study for Eurostat and DGXI

Sekot, W. – Universitat fur Bodenkultur Wien (1999): Comparing results of alternative methods for the valuation of forest assets: a pilot study for Eurostat and DGXI