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PROJECT

December 2020

CAPTURING CARBON: INVESTING IN WOODLANDS

An Options Analysis for
Welsh Housing Associations

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This project is supported by the European Agricultural Fund for Rural Development

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Annex 1: Investment Analysis

EXECUTIVE SUMMARY

Recommendation	We recommend Housing Associations consider purchasing land and then planting new woodlands. This option provides a clear path to delivery and has a proven track record. The returns from the investments are low risk and sustainable. We have completed a financial analysis in Annex 1 and summarised in table 1 below. This option directly addresses the challenge presented by climate change by offsetting carbon and delivers a future timber supply for construction projects as well as multiple social benefits for communities.
Climate Emergency	New woodland creation is one of the most cost-effective ways of reducing carbon emissions and offsetting our nation's carbon footprint. The combination of an <i>undersupply</i> of our own timber in Wales and the ambitions of Wales and the Welsh Government to create new woodlands means that an organisation interested in creating new woodlands can play a pivoting role in combating climate change.
Attractive Asset	Woodlands have proven an attractive alternative asset for long-term investors, as they provide the opportunity to benefit from the value of a naturally growing commodity and the security of ownership of the underlying land. Woodlands have multiple benefits and these can be reaped in a way that makes a financial return for the investors.
Carbon Trading	A very new and interesting market is the trading of carbon. The sale of carbon credits allows landowners who create new woodlands to increase their financial returns by selling both timber and non-timber products. Government forecasts suggest these values could rise five-fold over a 40-year period which will have a significant impact on the profitability of a woodland creation project.
Investment options Analysis	Woodknowledge Wales explored three investment options (1) Creating woodland by acquiring land. (2) Creating new woodland through novel collaboration with the public sector e.g. NRW, Local Authorities etc. (3) Acquiring existing woodland.
Next Steps	We recommend Housing Associations work with Woodknowledge Wales to clarify their objectives for investing in woodlands (section 4 of Appendix 1 provides some guidance) and move to the next stage by engaging a woodland investment advisor.

Table 1: 40 Year forecast for a 100 hectare scheme

100 Ha Scheme	
Enhanced Mixed Woodland	
	£
Income	
Timber Income (based on current value of £48/tonne)	£2225125
Fencing Grant	£18270
Plan Preparation Grant	£800
Initial plant grant	£360000
Carbon payment (based on current value of £30/tonne)	£750000
Maintenance payment	£72000
Premium Payment	£420000
SPS	£90000
Total Income	£3936195
Expenditure	
Plan preparation	£5000
Land Acquisition	£750000
Fencing	£42000
Ground preparation	£65000
Planting broadleaves	£70000
Planting conifer	£105000
Maintenance	£80000
Beating Up	£43750
Layout	£2000
Management Fee	£84000
Management Fee	£189000
Roads	£10000
Supervising timber operations	£35938
Total Expenditure	£1481688
Net Profit	£2,454,507
NPV* 3% (with grant)	£965,221
NPV 5% (with grant)	£467,255
NPV 3% (without grant)	£126,938
NPV 5% (without grant)	-£305,356

*NPV = Net Present Value

1 AIM

- 1.1 Woodknowledge Wales explored options for Housing Associations to invest in woodlands and whether a compelling case could be made.

2 CONTEXT

2.1 Undersupply

Wales is one of the least wooded countries in Europe, with trees covering just 15 percent of our land against a European average of 37%. The UK continues to import around 80% of our timber and wood products, and whilst Wales is capable of growing, producing and processing quality timber, we need to do more to ensure a healthy future supply.

2.2 National Ambition

Wales and the Welsh Government have set an aspiration of planting 2000 hectares of new woodland annually to meet their climate change strategy which in turn will help Wales meet its carbon emission reduction targets. It is widely acknowledged that new woodland creation is one of the most cost-effective ways of reducing carbon emissions and offsetting our nation's carbon footprint. Planting new woodlands also stands up as a sound financial investment when correctly managed. Estimates from a study in 2012 reveal that the overall net present value from this new planting would, over a 100-year time frame, range from £299 million (lowest estimate) to £8.6 billion (highest estimate) – that's real green growth.

3 BENEFITS

3.1 Multiple Benefits

Woodlands can and do provide multiple benefits in the same place and at the same time, not just in terms of timber products. Trees and woodlands can make a positive difference to our lives and to those of future generations. The environments they create offer opportunities for people, businesses and biodiversity. The timber they yield is a renewable resource that helps to lock up carbon.

3.2 Products & Services

Woodlands provide things we need and use:

- Raw materials – construction materials, paper pulp and wood chip, packaging and pallets.
- Non-timber products – such as game, honey, berries, fungi.
- Wood fuel for power plants, business, community or domestic supply of heat and power.
- Timber and wood products offer a cost effective and valuable alternative to fossil fuel rich materials such as steel and concrete. The UK government should *“Develop plans to rapidly scale up the levels of wood used in construction.”* Committee on Climate Change, June 2020.

- They provide great settings for play, education and learning, outdoor pursuits, community activities and enterprise.
- Woodland is important for soil formation, nutrient and water cycling and oxygen production.
- Wooded catchments help protect the quality of our drinking water supplies and can moderate flood events.
- Trees capture harmful pollutants in our atmosphere and improve our air quality, especially in towns and cities.
- Woodlands and their soils are important reserves of carbon.

4 WOODLANDS AS AN INVESTMENT

4.1 Attractive Asset

Woodlands have proven an attractive alternative asset for long-term investors, as they provide the opportunity to benefit from the value of a naturally growing commodity and the security of ownership of the underlying land.

This allows for the following:

- An income stream from timber harvested from the forest.
- Long-term capital appreciation in a sustainable and tax-efficient manner.
- Portfolio diversification through uncorrelated returns to more traditional asset classes.
- Inflation linkage.
- Reduced volatility.

4.2 Annual Returns

Average annual returns from the IPD UK Annual Forestry Index over the past 25 years have been 9.2%, which compares favorably with more mainstream asset classes, even before taking the significant tax advantages of woodlands into account. Increasing timber prices and rising land values continue to drive returns. You can access further information relating to historic timber prices through the [UK IPD Annual Forestry Index](#). In addition to contributing to the growing global economy through an investment in real assets, investors are assured of a sustainable, tax-efficient investment.

4.3 Carbon Trading

A very new and interesting market is the trading of carbon. This is only currently available for creating new woodlands. Carbon trading is fast becoming a key driver in planting new woodlands. Financial returns from woodland creation has traditionally been generated from sales of timber, however in recent years the voluntary carbon market has established and grown in the UK and landowners can now generate an income from the sale of carbon. The sale of carbon credits allows landowners who create new woodlands to increase their financial returns by selling both timber and non-timber products. The value of carbon varies by species, land type, productivity and management regime with current values expected to yield £400-£1300/ha at £3/tCO₂ and £1100-£4000/ha at £9/tCO₂. A recent sale of carbon in England under the government's Carbon Guarantee Scheme, which pays landowners a guaranteed

price for storing carbon for 30-35 years, sold very well. We would expect this scheme to be introduced in Wales in the near future.

The carbon market therefore shows great potential. When a new woodland is planted and registered with the Woodland Carbon Code, Pending Issuing Units (PIUs) are created once the planting has been validated. These PIUs can be traded but are effectively a promise of carbon to come and have a lower value than the verified carbon units which commence from year 5. In the absence of a government scheme underpinning the market there will be a difference in price between PIUs and verified carbon units. Currently PIU carbon values are £5-£10 per tonne CO₂. To date PIUs have been purchased by brokers who hold them until the scheme is verified and the carbon units can then be sold at a higher value on the open market. Open market values can be in excess of £20/t at the present time but government forecasts suggest these values could rise to £100/t which will have a significant impact on the financial viability of a project

4.4 Woodland design and products

The type of woodland planted can vary from mixed broadleaves to commercial conifers, or a mixture of both. The financial return on the investment will be driven by the type of woodland planted, location, access and the existing and expected market for the woodland products. A rise in woodland and land values over time should also be considered. The existing timber markets for hardwoods will be predominately be firewood and biomass, with a long-term goal of producing sawn timber if good management is undertaken. The location and type of land where hardwoods are planted is critical if timber production is the objective. This does limit the land available and land prices will be higher. Softwoods will grow significantly quicker with rotations of 30-60 years in general terms for clear felled systems and longer rotations for continuous cover systems. Softwood plantations will start to produce timber from year 15, dependant of species. These type of plantations will produce biomass, round fencing, sawn fencing, panel products and construction timber. Mixed woodlands will deliver a combination of both woodland types and will be more resilient.

5 OPTION 1: CREATING FORESTS BY ACQUIRING LAND

5.1 Successful Track Record

There are many clear advantages to taking a proactive direct approach to creating new woodlands by purchasing land on the open market and planting with trees. What you get with this approach is a clear delivery mechanism which is proven to work with lots of examples of success.

5.2 Land Prices

Land availability for undertaking such an approach is good with reasonable prices in the region of £3500/ha - £11,000/ha so we have assumed a cost of £7500/ha as shown in appendix 3.

Publicly marketed land is quite scarce in Wales with some being traded off-market. The picture may change as agricultural subsidies are gradually removed making agriculture non viable on marginal land

5.3 Costs

The cost involved in creating a new woodland is predictable and can be forecasted in advance of any investment taken. Cost will vary according to the type of woodland being created, whether that be a native broadleaf woodland or a more commercial mixed conifer/broadleaf design. The costs involved in creating forests of this type does vary from £3,000/ha to £5,000/ha

5.4 Grants

To offset this cost and promote woodland creation in Wales, The Welsh Government have a grant scheme called Glastir Woodland Creation. This grants scheme offers capital grants to offset the cost of establishing a new woodland and it is possible, dependant on qualifying criteria, to receive annual payments for the first 12 years. The capital grants vary according the type of woodland being planted from £3,000/ha to £4,500/ha and are considered a good level of grant support to enable woodlands to be created at little costs to the landowner. The downside of the current grant system is the limit in the funds available. The demand has exceeded the budget in recent years resulting in Welsh Government introducing a scoring system to select the schemes which provide best value and deliver the objective set by the Woodlands for Wales strategy. The result is an unpredictable position which can result in delays in delivering woodland creation projects and the potential of receiving no grant at all. Therefore, buying land to plant based on access to grant does come at a risk. To plant new woodlands without grant support is the alternative which is not constrained by grant systems. The return on the investment is considerably less, but all the key benefits of planting a new woodland are achieved. The newly established market for selling carbon credits does however provide an opportunity for non-timber related income for woodland creation schemes. If Housing Associations were to make a considerable financial investment in the sector then there's a possibility of approaching Welsh Government directly should be considered.

5.5 Planning and Approvals

All woodland creation projects over 1ha in National Parks and 5ha on other land will need to go through an environmental screening process. This process ensures any proposed project fulfils the necessary environmental standards required for the type and location of any new woodland. This process will consider all the potential impacts and highlight any concerns or constraints. The private woodlands sector can advise on the purchase of land for afforestation and can undertake a risk assessment for each proposal. This can provide purchasers with the confidence to buy land for planting new woodlands.

If land prices fell in Wales for marginal land it may become more common to plant without grant. The advantages would be that much of the bureaucracy associated with Glastir applications could be avoided although an Environmental Assessment determination

would still be required. It would also be possible to plant a higher percentage of conifers as it would only be necessary to comply with the UK Forest Standard which is less onerous than Glastir. This flexibility would improve the economics of the scheme e.g. through quicker carbon yields and through selling the timber.

6 OPTION 2: CREATING NEW FOREST THROUGH NOVEL COLLABORATION

6.1 Partnerships

Managing and delivering projects with the public sector can be an attractive proposition with a perception of lower risk and greater influence. There are many good examples of public private partnerships delivering great results, but it can add undue delays and complications to projects.

6.2 Natural Resources Wales (NRW)

In relation to woodland creation the one partner which stands out is Natural Resources Wales (NRW). NRW are the government agency in charge of the environment, which includes woodlands. They manage the Welsh Government Woodland Estate (WGWE) which amounts to 126,000ha across Wales, making up 40% of the woodlands of Wales. The remaining 60% is held within private ownership. NRW has not focussed on creating new woodlands to date and therefore has limited proven experience of delivery in this field. Their role has been as the regulator and policy maker on behalf of Welsh Government.

As a public body NRW are under constant scrutiny which adds pressure in terms of risk, costs and responsiveness which affects value. They act as the regulator when it comes to woodland creation, which creates a unique position in terms of NRW having to scrutinise NRW woodland creation projects. They do bring a very strong public engagement focus to any project but they do not own land suitable for planting and would need to procure land through open market mechanisms. This is no different to the private sector, although NRW would be tied by public procurement rules. Where the private sector will drive best value through market forces, the public sector is not in competition with others, often resulting in higher costs of delivery. As a public body, NRW do not have access to grants for creating new woodlands.

6.3 Other public sector land owners

It may be, however, that Local Authorities are more suitable partners. They often own land and may be interested in working with a Housing Association to deliver objectives of mutual benefit. It may be that these plantings could form part of the new National Forest in Wales which would also help meet a Welsh Government targets.

7 OPTION 3: ACQUIRING EXISTING FORESTS

7.1 Competitive Market

Another approach to becoming woodland owners is to purchase an existing forest. This would provide the benefit of being a woodland owners from day one (allowing for early returns from timber sales), but lacks the new development potential of new woodlands. The woodlands investment market is very competitive, especially if you are only looking at Wales. Following the very impressive performance of woodlands as an asset class over the past 20+ years, demand for properties is very competitive. Investment appraisals can be undertaken with high level of certainty based on previous performance.

7.2 Carbon v. Timber

Unfortunately purchasing existing woodland will preclude Housing Associations from entering the carbon trading market. Existing woodland are exempt from selling the carbon they sequester under current rules, as there they fail the additionality test. It is additionality that enables the offset purchaser to claim to be reducing emissions. There is currently no grant support for existing woodlands with the government focus on creating more woodland. The advantage of owning an existing woodland is that you could lay claim to the benefits of owning a woodland from day one. It would provide ecosystems services and deliver public goods and there may be future opportunities for land purchase surrounding the woodland to expand the holding and enter the carbon market.

The woodland investment market is competitive in Wales and prices are high but nevertheless it is an option worth considering. There are other natural capital advantages (water quality, biodiversity, soil carbon, flood risk reduction) which may also have a 'value' to a Housing Association and, in due course, may have a monetary value. There is growing interest in natural capital which the marketplace may be willing to purchase in order to demonstrate sustainable credentials although a metric for calculating these needs to be explored.

In summary, If a Housing Association wishes to utilise timber from its own woodlands within a shorter time frame then this option provides a faster turnaround.

8 RECOMMENDATIONS & NEXT STEPS

8.1 A Recommendation

The three options put forward in this analysis are not mutually exclusive and a package could be considered of new planting, cooperation and purchase of existing forests. **However, after taking account of the options available we recommend Housing Associations work with professionals in the private woodlands sector to appraise the opportunity that is presented by purchasing land and planting new woodlands. This option, as has been highlighted, provides a clear path to delivery and has a proven track record. The returns from the**

investments are low risk and sustainable showing great returns. We have completed a financial analysis of this option in Annex 1.

Such an investment in woodland creation delivers multiple benefits which Woodknowledge Wales believes is in synergy with the work of Housing Associations. Not only is it contributing positively to the challenge presented by climate change by removing carbon from the atmosphere, it is also delivering future timber supply for the construction industry, multiple social benefits for the communities which Housing Associations support in their mainstream business and improving the environment on all fronts.

8.2 Woodland Design

We would recommend looking at mixed woodland which include a mix of tree species which will provide for a resilient forest portfolio with real commercial returns.

8.3 Next Steps

We would recommend that, following study of this report Housing Associations clarify their objectives for investing in woodlands as this will influence the type and location of woodland and the level of return. A further step would be to engage woodland investment advisors to explore the land available and to prepare an investment appraisal which will set out the detail of the project.