# Parehaka Group

## Allocation of Share of Collective Harvest

**Table of Contents**




**Graeme Tindall**
**Managed Investments Director, Forest Enterprises**


**5 November 2021**


Forest Enterprises®
Creating wealth. Naturally.

5 Papawai Place, Masterton 5810 | PO Box 128, Masterton 5840, New Zealand
Office +64 6 370 6360 | Fax +64 6 370 6369 | www.forestenterprises.co.nz

# Managed Investment Schemes in the Parehaka Group
**(for Collective Harvest by Joint Venture)**

- Bloomfield Forest Investment
- Brentwood Forest Investment
- Greenhills Forest Investment
- Woodgate Forest Investment

Also referred to as the 'Parehaka Group'.

## Background

The four investments in the Parehaka Group will be voting on a proposal to implement a collective harvest joint venture of their mature forest.

The underlying rationale of the proposal is that each investment is better off receiving a percentage share of the total revenue from the collective harvest of the forests owned by each investment in the joint venture than 100% of the revenue from the standalone harvest of their forest.

The harvest revenue sharing methodology to be used is the *Forest Crop Value,* as set out in *Appendix 1 – Notes on Harvest Share Methodology.* These notes are the relevant sections extracted from the comprehensive report entitled *Collective Harvest by Joint Venture – For Forest Enterprises Managed Investment Schemes.*

The purpose of this document is to report to Investors in the Parehaka Group investments –

1. The calculated harvest shares for each investment; and
2. Identify and discuss the differences in the participant forests impacting on the calculated harvest shares.

## Calculated Harvest Share Percentages

The methodology used resulted in Forest Crop Valuation for the four forests in the Parehaka Group as per the table below. The table shows how the respective forest crop values translate to the corresponding percentage share of the harvest allocated to each investment.

| **Investment Name** | **Forest Crop Value** | **NPV Calculation of Harvest Share %** | **Calculated Harvest Share %** |
|---|---:|---:|---:|
| Bloomfield Forest Investment | $18,370,946 | $18,370,946 / $54,601,014 | 33.6% |
| Brentwood Forest Investment | $14,662,669 | $14,662,669 / $54,601,014 | 26.9% |
| Greenhills Forest Investment | $15,757,254 | $15,757,254 / $54,601,014 | 28.9% |
| Woodgate Forest Investment | $5,810,145 | $5,810,145 / $54,601,014 | 10.6% |
| **Total Forest Crop Value** | **$54,601,014** | | **100.0%** |

The output is that the Bloomfield Investment will receive 33.6% of the total net revenue from the collective harvest, Brentwood Investment 26.9.%, Greenhills Investment 28.9%, and 10.6% for the Woodgate Investment.

The *Forest Crop Value* data used for the 31 March 2021 Audited Financial Reports was the base data for the calculated harvest share percentages and was adjusted for discount rate, standardisation of the harvest profile and road maintenance costs.

The discount rate of 3.5% has been adopted based on the review of discount rates by Deloitte. We have used a rate at the lower end of the range to rebalance the rate towards the 'time value of money' component from the 'risk premium' component of the rate. The lower rate also reflects recent declines in term deposit interest rates (see PHG Webpage for Deloitte's review).

Standardisation of the harvesting timeframe across 12 years, and the cut for the last 6 years of harvest so all investments are based on the same set of base assumptions.

Road maintenance costs are now allocated to include a charge for the use of other investments roads based on distance travelled.

## Net Stocked Area Comparison

As expressed in the Notes in Appendix 1, the key measure against which the calculated harvest share percentage is reported is by comparison with the Net Stocked Area percentage of each forest. This is because, all other factors being equal, the calculated harvest share percentage for each forest would be the same percentage as the net stocked area percentage. Any differences in the calculated harvest share percentages must therefore be explained and rationalised with reference to actual differences between each participant forest.

The table below compares the calculated Harvest Share percentage with the Net Stocked Area percentage.

| Investment Name | Net Stocked Area | Net Stocked Area % | Harvest Share % | Difference |
|---|---|---|---|---|
| Bloomfield Forest Investment | 484.8 | 32.1% | 33.6% | +1.5% |
| Brentwood Forest Investment | 501.2 | 33.2% | 26.9% | -6.3% |
| Greenhills Forest Investment | 380.0 | 25.1% | 28.9% | +3.8% |
| Woodgate Forest Investment | 145.0 | 9.6% | 10.6% | +1.0% |
| **Total Forest Crop Value** | **1,511.0** | **100.0%** | **100.0%** | |

The comparison highlights that the individual forests have differences which result in a harvest share percentage shift relative to net stocked area. This is due mainly to the relative stumpage differences (refer table below). The balance of this report identifies and discusses these forest differences.

**IMPORTANT NOTE – The differences in the calculated harvest share percentage compared with the net stocked area percentage are NOT a measure of the investment return for each of the Parehaka Group Investments. The investment return is a factor of both the income to be received from the harvest share percentage, PLUS the costs incurred by each forest from land purchase to the conclusion of the investment, and each investment has a different cost history.**

## Forest Differences Identified

The differences between the Parehaka Group forests in Age Class Mix and Projected Stumpage impact the respective Forest Crop Values and therefore the calculated harvest share percentages for the investments.

### 1. Age Class Mix Differences

The table below analyses the Parehaka Group forests' Net Stocked Areas by age class, and the resulting totals –

| Forest Name | 1990 | 1996 | 1997 | Total | 1990 % | 1996 % | 1997 % |
|---|---|---|---|---|---|---|---|
| Bloomfield Forest | | 275.5 | 209.3 | 484.8 | | 57% | 43% |
| Brentwood Forest | | 267.4 | 233.8 | 501.2 | | 53% | 47% |
| Greenhills Forest | | 166.3 | 213.7 | 380.0 | | 44% | 56% |
| Woodgate Forest | 32.3 | 48.5 | 64.2 | 145.0 | 22% | 34% | 44% |
| **Total Forest Crop Value** | 32.3 | 757.7 | 721.0 | **1,511.0** | **2.1%** | **50.1%** | **47.8%** |

With the exception of Woodgate all forests were planted in 1996 and 1997 with plantings split relatively evenly between the years. Therefore, the age classes of the forests are similar. The discount rate adjusts for differences in age class composition and will appropriately value Woodgate earlier plantings.

Please note Woodgate and Greenhills replanted second rotation trees from prior harvesting are included in the valuation allocation for the Land LP.

## 2. Projected Stumpage Differences

The table below sets out the projected stumpage for each forest. The stumpages and projected recoverable volume differ slightly from those in the Annual Financial Report due t the standardisation of the harvest profile.

| Forest Name | Projected Stumpage |
|---|---|
| Bloomfield Forest Investment | $49,033 |
| Brentwood Forest Investment | $38,361 |
| Greenhills Forest Investment | $53,091 |
| Woodgate Forest Investment | $50,823 |

These stumpage figures are from the projected stumpage summaries set out in *Appendix 2 – Projected Stumpage Summaries*.

The differences between the Parehaka Group forests impacting on the projected stumpages are found in projected recoverable volume and log type, logging, roading and cartage costs.

Bloomfield, Greenhills, and Woodgate have comparable projected stumpage and Brentwood lower due to lower recoverable yields and higher production costs.

### a) Projected Recoverable Volume and Log Types

| Forest Name | Recoverable Volume (m3/ha) |
|---|---|
| Bloomfield Forest Investment | 841 |
| Brentwood Forest Investment | 723 |
| Greenhills Forest Investment | 832 |
| Woodgate Forest Investment | 805 |

The Brentwood Forest has the lowest recoverable yield at 723 m3 per hectares compared to 805 m3 to 841 m3 for the other 3 forests. The Brentwood Forest is a on steeper terrain and the land has been materially impacted by erosion. The stocking rate per hectare is lower than the other forests and this is reflected in the recoverable volume.

### b) Logging Costs

| Forest Name | Logging Cost |
|---|---|
| Bloomfield Forest Investment | $43.10 |
| Brentwood Forest Investment | $45.00 |
| Greenhills Forest Investment | $39.00 |
| Woodgate Forest Investment | $43.50 |

The logging costs for the four forests range from $39 to $45. This reflects the terrain - the Brentwood Forest on steeper terrain and having the highest proportion of more expensive hauler-based logging.

## c) Roading Costs (including processing areas crossings, entranceways and maintenance)

The four forests are to be treated as one large forest to be harvested in the most cost-effective manner. Therefore, a shared roading network is planned to minimise the number of roads, landings, entranceways, and infrastructure to be built in sections. This shared roading network has a total of 56 kilometres of roads, 136 processing areas, 4 river crossings and 7 entranceways.

Each investment's capital share of the roading network cost is based upon the cost of establishing the roading network that falls on their land.

All investments have either direct access or right of way access over other investments to the county roads. The arrangement when using another investment roads is pay for the roading maintenance cost related to the cartage of their own logs.

Road maintenance costs are estimated at $3.50 per tonne for the total logs extracted. Each investment has been allocated at a flat rate of $2.50 per tonne for maintenance costs within their investments own boundary and an allocation of maintenance costs for the use of other investments roads based on the distance travelled.

To reiterate, the principle for the Collective Harvest Joint Venture is that all investments are better off. This approach to capital and maintenance cost allocation ensures all investments share fairly in the cost-saving of developing a shared roading network with no one investment receiving a significant benefit more than the others.

| Forest Name | Roading Cost | Cost per m3 |
|---|---|---|
| Bloomfield Forest Investment | 4,187,260 | $10.30 |
| Brentwood Forest Investment | 4,974,879 | $14.60 |
| Greenhills Forest Investment | 3,822,195 | $11.30 |
| Woodgate Forest Investment | 904,559 | $8.00 |

Roading costs is related to terrain with the steepest forests having to spend more to extract the logs.

## d) Cartage Costs

| Forest Name | Cartage Cost |
|---|---|
| Bloomfield Forest Investment | $22.30 |
| Brentwood Forest Investment | $21.20 |
| Greenhills Forest Investment | $19.80 |
| Woodgate Forest Investment | $19.50 |

The cartage cost for Greenhills and Woodgate is slightly lower than Bloomfield and Brentwood due to these forests closer proximity to the main road and less cartage through the forests required to reach the main road.

# Appendix 1 – Notes on Harvest Share Methodology

## Calculation of each MIS's Equitable Share of Collective Harvest

### Overview of Collective Harvest Share Calculation

The underlying principle behind sharing the total revenue from collective harvest is that each MIS is better off receiving a percentage share of the total revenue from the collective harvest of the forests owned by the multiple MIS in the joint venture than 100% of the revenue from harvest of their forest. A sharing methodology is required, and the methodology used is to calculate each MIS's forest crop value at the same date using the same assumptions, and to input the calculated figures into the following formula –

| | |
|---|---|
| **Percentage Shares =** | **The percentage of each MIS forest crop value to the total of the forest crop values for all MISs in the joint venture** |

Worked example of formula –

| MIS Name | Forest Crop Value | Calculation of % Share | Calculated % Share of Collective Harvest |
|---|---|---|---|
| MIS 1 | $10.5 million | $10.5/$43.0 | 24.42% |
| MIS 2 | $15.0 Million | $15.0/$43.0 | 34.88% |
| MIS 3 | $17.5 million | $17.5/$43.0 | 40.70% |
| **Total Forest Crop Value** | **$43.0 million** | | **100.00%** |

### Forest Crop Value

The benefit of using forest crop value is because the methodology is –

- Prescribed by International Accounting Standard IAS 41, the accounting standard for valuation of biological assets
- Complies with the New Zealand Institute of Forestry valuation standard

The calculation uses a subset of each MIS's projected Cashflow.

Given the application of the calculated value, a valid question is *Does IAS 41 result in a logical value of a forest crop, especially for comparison purposes with other forest crops?* As the name expresses, international accounting standards apply internationally and are arrived at via a consultation process. Sometimes these processes can produce a less than optimal result in specific circumstances.

### Calculation, Checking and Reporting Shares to Investors

Forest Enterprises prepares the forestry and other inputs, enters these into each MIS's Cashflow, and calculates the resulting shares for each MIS in the joint venture. The assumptions for the forestry inputs are reviewed by the Forestry Auditor (Forme Consulting Group Limited).

Forest Enterprises prepares a report to Investors in each MIS setting out the relevant forestry assumptions, the calculated forest crop values, plus resulting calculated shares of the collective harvest revenue. Supporting this report are the review letters received by the Supervisor from the Forestry auditor.

The key measure against which the calculated harvest shares is reported is comparison with the percentage of net stocked areas of each MIS in the joint venture. This is because, all other factors being equal, the percentage allocation of harvest to each MIS would be the same percentage as the net stocked area. The differences in the calculated percentage shares is therefore explained and rationalised with reference to the actual hard data relating to valid actual differences between each participant forest in the joint venture.

# Appendix 2 – Projected Stumpage Summaries

**Bloomfield Forest Investment**

| Volume Harvested | m3 | TRV m3/ha | Percentage | Price at PoS ($/m3) | Harvest Costs ($/m3) | Log & Load | Harvest Roading ($/m3) | Harvest Mgt&Mktg ($/m3) | Harvest Contingency & Levy ($/m3) | Cartage Costs ($/m3) | Net Return ($/m3) | Contribution to Stumpage ($/ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 232,956 | 481 | 57% | 137 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 53.8 | 25,841 |
| K | 43,133 | 89 | 11% | 122 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 38.9 | 3,459 |
| KI | 28,356 | 58 | 7% | 112 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 29.0 | 1,698 |
| KIS | 12,608 | 26 | 3% | 102 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 18.5 | 481 |
| P30 | 3,198 | 7 | 1% | 146 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 62.4 | 412 |
| P35 | 38,875 | 80 | 10% | 178 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 94.7 | 7,596 |
| P40 | 48,377 | 100 | 12% | 179 | - 61.0 | - 43.1 | - 10.3 | - 4.8 | - 2.8 | - 22.3 | 95.7 | 9,547 |
| **Total** | **407,503** | **841** | **100%** | **141.7** | **-61.0** | **-43.1** | **-10.3** | **-4.8** | **-2.8** | **-22.3** | **58.3** | **49,033** |

**Brentwood Forest Investment**

| Volume Harvested | m3 | TRV m3/ha | Percentage | Price at PoS ($/m3) | Harvest Costs ($/m3) | Log & Load | Harvest Roading ($/m3) | Harvest Mgt&Mktg ($/m3) | Harvest Contingency & Levy ($/m3) | Cartage Costs ($/m3) | Net Return ($/m3) | Contribution to Stumpage ($/ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 196,373 | 412 | 57% | 137 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 48.7 | 20,078 |
| K | 36,056 | 76 | 10% | 122 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 33.8 | 2,559 |
| KI | 25,469 | 53 | 7% | 112 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 24.0 | 1,281 |
| KIS | 10,781 | 23 | 3% | 102 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 13.4 | 304 |
| P30 | 2,955 | 6 | 1% | 146 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 57.4 | 356 |
| P35 | 33,158 | 70 | 10% | 178 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 89.7 | 6,240 |
| P40 | 39,666 | 83 | 12% | 179 | - 67.2 | - 45.0 | - 14.6 | - 4.8 | - 2.8 | - 21.2 | 90.6 | 7,544 |
| **Total** | **344,457** | **723** | **100%** | **141.4** | **-67.2** | **-45.0** | **-14.6** | **-4.8** | **-2.8** | **-21.2** | **53.1** | **38,361** |

**Greenhills Forest Investment**

| Volume Harvested | m3 | TRV m3/ha | Percentage | Price at PoS ($/m3) | Harvest Costs ($/m3) | Log & Load | Harvest Roading ($/m3) | Harvest Mgt&Mktg ($/m3) | Harvest Contingency & Levy ($/m3) | Cartage Costs ($/m3) | Net Return ($/m3) | Contribution to Stumpage ($/ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 181,312 | 477 | 57% | 137 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 59.2 | 28,242 |
| K | 33,036 | 87 | 10% | 122 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 44.3 | 3,850 |
| KI | 21,797 | 57 | 7% | 112 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 34.4 | 1,975 |
| KIS | 9,507 | 25 | 3% | 102 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 23.9 | 598 |
| P30 | 2,612 | 7 | 1% | 146 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 67.8 | 466 |
| P35 | 30,095 | 79 | 10% | 178 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 100.1 | 7,931 |
| P40 | 37,697 | 99 | 12% | 179 | - 58.1 | - 39.0 | - 11.3 | - 5.0 | - 2.8 | - 19.8 | 101.1 | 10,028 |
| **Total** | **316,056** | **832** | **100%** | **141.7** | **-58.1** | **-39.0** | **-11.3** | **-5.0** | **-2.8** | **-19.8** | **63.8** | **53,091** |

**Woodgate Forest Investment**

| Volume Harvested | m3 | TRV m3/ha | Percentage | Price at PoS ($/m3) | Harvest Costs ($/m3) | Log & Load | Harvest Roading ($/m3) | Harvest Mgt&Mktg ($/m3) | Harvest Contingency & Levy ($/m3) | Cartage Costs ($/m3) | Net Return ($/m3) | Contribution to Stumpage ($/ha) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | 66,802 | 461 | 57% | 137.1 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 58.5 | 26,962 |
| K | 10,868 | 75 | 9% | 122.2 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 43.6 | 3,269 |
| KI | 9,183 | 63 | 8% | 112.3 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 33.8 | 2,139 |
| KIS | 3,391 | 23 | 3% | 101.8 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 23.2 | 543 |
| P30 | 1,529 | 11 | 1% | 145.8 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 67.2 | 708 |
| P35 | 8,473 | 58 | 7% | 178.1 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 99.5 | 5,813 |
| P40 | 16,443 | 113 | 14% | 179.0 | - 59.1 | - 43.5 | - 8.0 | - 4.9 | - 2.8 | - 19.5 | 100.4 | 11,389 |
| **Total** | **116,688** | **805** | **100%** | **141.7** | **-59.1** | **-43.5** | **-8.0** | **-4.9** | **-2.8** | **-19.5** | **63.1** | **50,823** |