



# Steepland Harvesting Programme

Forest Growers Conference  
17 October 2017



## Programme Overview

- 7 year programme to 30 June 2017
- **Primary goals:** To improve productivity and safety of harvesting on steep land and develop new forestry equipment and technology for both domestic and export sales
- **Vision:** “No worker on the slope, no hand on the chainsaw”
- **Total programme funding = \$7.60 million**
  - Industry      \$3.92m
  - PGP            \$3.68m
- **Target benefits = \$255m by 2017**



## PGP Outputs

- **ClimbMAX Steep Slope Harvester**
  - Commercially available (ClimbMAX Equipment Ltd)
  - 11 sold (3 in NZ, 7 in Canada, 1 in U.S.)
- **HarvestNav on-board navigation**
  - 18 implemented as free download 'app'
  - 2 new "out of the box" units sold

**ClimbMAX**  
INTERNATIONAL LTD [WWW.CLIMBMAX.CO.NZ](http://WWW.CLIMBMAX.CO.NZ)



**MARGULES  
GROOME**

## PGP Outputs

- **Teleoperation Control System**
  - First teleoperation console built
  - Demonstrated performance
  - New start-up company to commercialise
- **Robotic Tree to tree felling machine**
  - Prototype built and tested
  - Demonstrated in Christchurch Sept 2016

**ATL**  
APPLIED TELEOPERATION LTD



## PGP Outputs

- **Alpine Grapple carriage**
  - Modified and trialled in NZ
  - Commercially available (Logpro Ltd)
  - 13 sold to date
- **CutoverCam hauler vision system**
  - Commercially available (Applied Teleoperation)
  - New model launched at HarvestTECH



## PGP Outputs

- **Skyshifter Tail Hold Carriage**
  - Prototype built and tested
  - Production trials completed
  - Available for lease (Awdon Technologies)
- **Tension monitoring 'app'**
  - Prototype built by Univ. of Canterbury
  - Commercialised by DC Equipment Ltd



## Technology Transfer

- **19 conferences, 11 workshops, 170 technical reports, conference papers and refereed publications**
- **13 Field demonstrations to industry stakeholders:**
  - Farm Forestry Assoc. Conference – Wanganui 10 April
  - HarvestTECH Conference – Bay of Plenty 19 June
  - Wood Contracting Nelson Ltd – Nelson 3 August
- **Engaging industry to support implementation**



## Programme Benefits

- **\$6.18/m<sup>3</sup> lower cable harvesting costs (-17%)**
- **Commercialised 7 new products suited to NZ conditions**
- **De-risked investment by harvesting contractors**
- **Assisted local engineering companies with business development**
- **Continued to catalyse innovations in harvesting**
- **Speeded up delivery of productivity and safety benefits**



## Sector-wide Benefits

- **30% increase in cable harvesting productivity**  
(29.4 tonnes/hr vs. 22.6 tonnes/hr – FGR Benchmarking)
- **57% of harvesting ops now using mechanised felling**  
(up from 23% in 2009 – FGR Benchmarking)
- **1/6 the number of serious harm injuries in 2016 vs 2010**  
(28 SHI in 2016 vs. 170 SHI in 2010 – WorkSafe NZ)
- **165 workers removed from felling and breaking out**



## Sector-wide Commercial Outcomes

- **65 new mechanised felling operations in NZ**
  - plus over 60 machine exports to North America
- **Over 50 new mechanised grapples now in use**
  - Alpine, Falcon and Hawkeye grapple carriages
- **75 new camera systems now in use, more coming**
- **20 HarvestNav navigation systems in use**
- **Total cumulative benefits to 2016/17 = \$151 million**
  - Operational cost savings = \$71 million
  - Cumulative machinery sales = \$80 million

