Woodco
Wood Council of New Zealand Inc
C/- P O Box 10-937
Wellington
Ph: 04 473 9220
Fax: 04 473 9330

Woodco R S & T Advisory Group Statement on Research and Development for the Forest Industry

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Statement on Research and Development for the Forest Industry

Purpose:

- To provide pan-industry strategic direction on RS & T.
- To outline the key elements that the forest industry expects to see in any Statements of Core Purpose (SCP) and Statements of Core Intent for CRI's delivering research to the forest sector.
- To be used as the basis of input to Government, including MoRST and FRST, to influence the development of SCP's and SCI's for relevant CRIs.

Background:

The New Zealand forest industry (covering growing/protection, processing/products, design/construction), contributes around 3% of GDP and employs 20,000 workers directly and many more indirectly. At $ 3.2 billion pa it is New Zealand's third largest export earner and has a projected potential harvest increase of almost 70% by 2025.

The Woodco Advisory Group welcomes the new science priorities for the Government's investment in RS&T announced in 2010. As a key participant in the Biological Economy we support investment in the key platforms of :

Higher Value Wood Products
Derive higher value products from wood through improving processing technologies and developing alternative uses

Forestry Production

Enhance forestry productivity and profitability by developing sustainable management and improvement systems.

Biosecurity

Protect New Zealand's biological economy from biosecurity threats by identifying, preventing and mitigating diseases, pests and weeds.

Ref: page 14
http://www.morst.govt.nz/Documents/publications/policy/NZ%20RST%20priorities%20feedback%20document.pdf

The Advisory Group is able to work with Research providers to shape the type of research carried out and will look to assist in building collaborative research teams to ensure high quality, relevant and successful research outcomes.

The immediate, as well as longer-term goal of the forest sector is to be more profitable while continuing to be environmentally and socially responsible. The sector is striving to improve productivity through innovation and the development of new solutions to current issues and opportunities; thereby delivering greater benefit to NZ. The forest sector will invest in quality research that will provide a return to the industry. This research will be delivered via CRI's, Universities and a combination of in-house capacity and research and technology providers.

Critical Industry Issues as drivers of forest research

In response to the government's stated intent of aligning research more closely with end user needs we have set out many of the key challenges facing the sector where research effort will help provide solutions.

- Wood quality – Plantation grown timber that has the properties that can effectively challenge and replace less environmentally sustainable materials such as concrete and steel.

- Improved genetics and deployment technologies are needed to ensure the future crop meets end user needs.

- Improved wood quality segregation technologies in the forest, in the log yard, and in processing to reduce costs and improve profitability; optimal clearfell ages based on end user demand for stability, strength and stiffness.

- Land use – quantifying economic impacts of land use options and associated costs on society and knowledge transfer to regulators and decision makers.

- Use of chemicals – both sides of industry; investigating opportunities to use less and more benign chemicals in establishment and pest control operations; in wood preservation: in treating logs and lumber for export, and in pulp and paper manufacture.

- Bioenergy – with an increased emphasis on improving the economics of near-term opportunities

- Productivity – being internationally competitive – growing/ harvesting /processing/ marketing.

- Market Education and Tech Transfer – identify and address technology gaps in key export markets in processing and end use.

- Logistics and efficiency – smart scaling, labelling and tracking technologies.

- Biosecurity threats – need for solutions to pests and diseases already present in NZ and also those that have a high probability of arriving and causing problems

- Biosecurity obligations (including freedom to trade logs). Specifically social issues including issues associated with the use of methyl bromide and other fumigants.

- Sawmills - increasing productivity from log segregation through sawing to drying.

- Pulpmills: increasing productivity, lowering energy consumption and increasing value by producing higher value added products,

- Remanufacturing – increasing productivity, optimising value recovery, enhancement in jointing and laminating processes, advanced gluing, treating and finishing systems.

- Appearance Products – enhancing aesthetics, modifying technologies and discovering combinative solutions

- Design and construction – prefabrication, adaptive wood building systems and carbon foot printing via Life Cycle Inventory and Life Cycle Analysis across all building materials

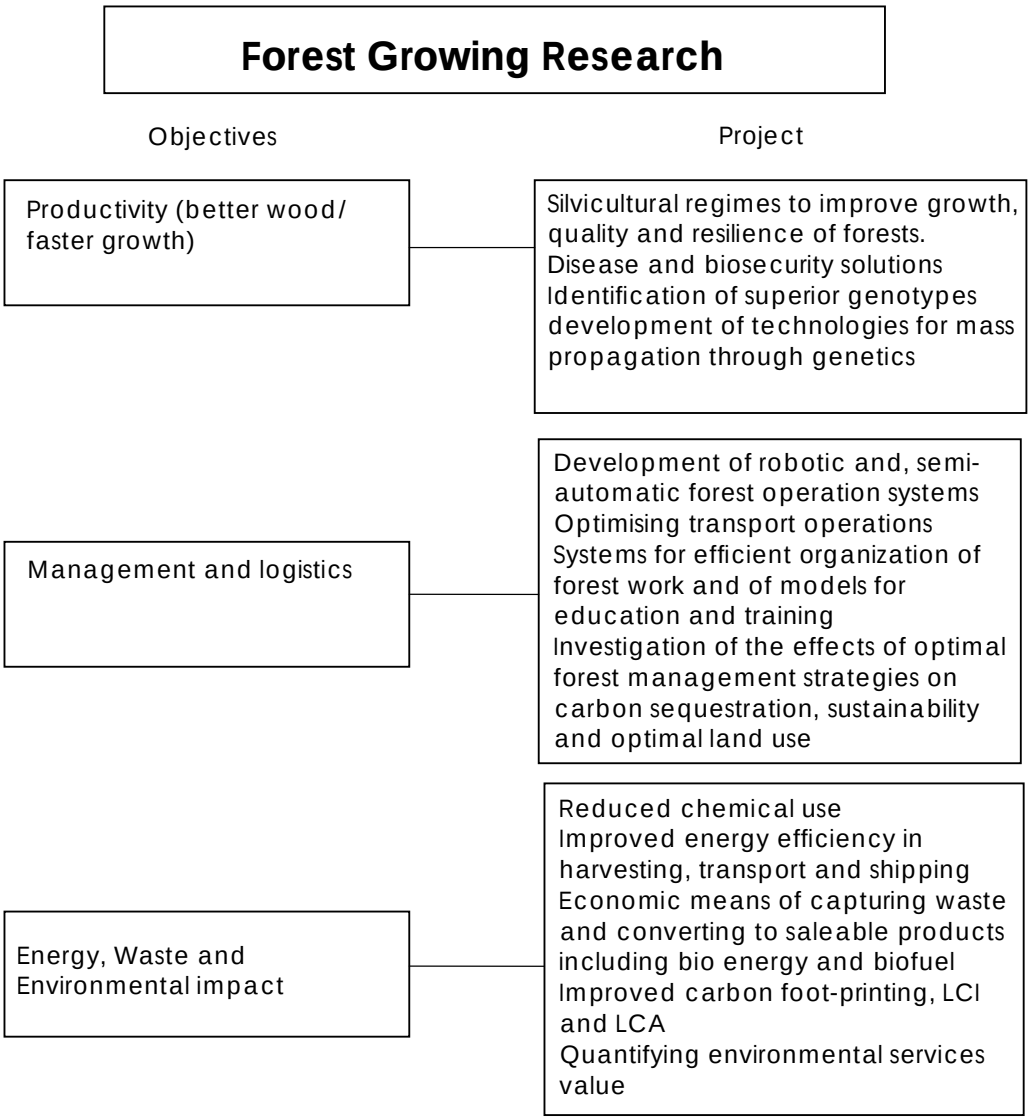
- Perception of non-performance by wood – vs steel and concrete

CRI Statements of Core Purpose (SCP) and Core Intent SCI):

Consistent with the above, the forest sector will support and partner with CRI's that can deliver across the industry's research needs spectrum and would like to see these needs reflected in SCP's and SCI's of key CRIs.

In particular we urge research providers to give appropriate recognition to the industry goals as outlined in its Strategic Plan when evaluating research priorities and performance. The industry Strategic Plan includes a range of relevant R&D objectives, and also a number of overarching quantitative goals related to increasing consumption, profitability, and market share both domestically and offshore. Examples include growing domestic consumption annually by 4% annually, increasing secondary processing by 2% annually, and reducing the cost of doing business by 5% annually.

CRI focus areas for advancement through RS & T have been identified as follows:



Solid Wood Research

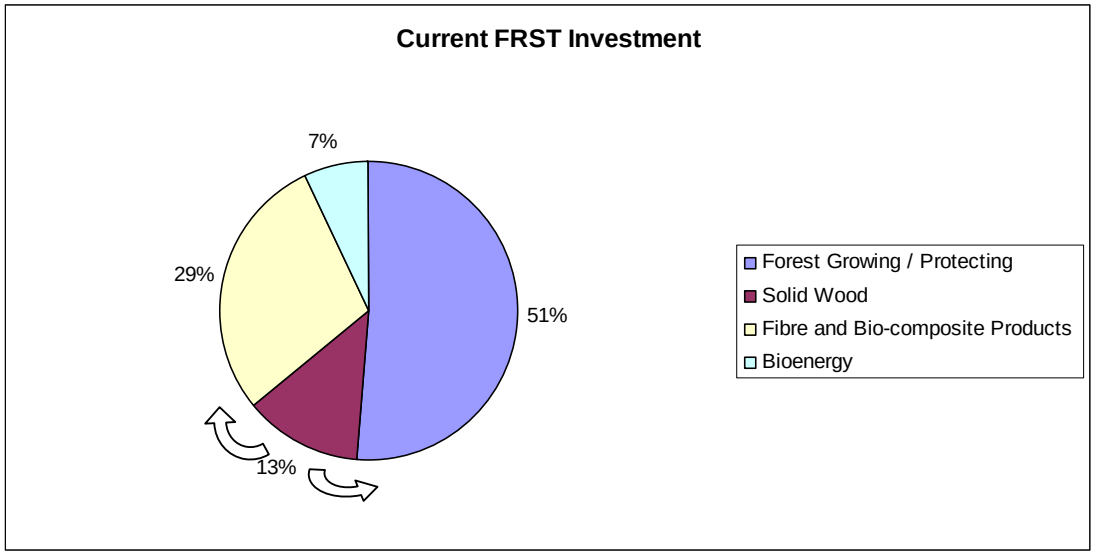
Objectives	Projects
Advanced processing systems	Advanced primary breakdown technologies Automation / robotics Sawing / planning /grading technologies Stability and durability enhancement Segregational and optimisation technologies Optimisation and decision support systems
New product and building systems	Advanced prefabrication systems Multi-material concepts and functionality Advanced adhesive, treating and finishing Revision of regulations and standards
Energy, waste and environmental impact	Low energy and faster wood drying processes Recycling of wood Disposal pathways for treated wood Carbon foot printing – LCI and LCA
Health & Safety	Noise and dust reduction and control Performance measurement & benchmarking

Fibre Products and Bio-energy Research

Objectives	Projects
Next generation	Replacing non-renewable materials and chemicals in newsprint, market pulp, packaging and hygiene Advanced labelling and tracking Automated material handling and robotics Next generation composites
Energy, waste and environmental impact	Reduced energy in P&P mills Streamlined recycling
Sustainable energy production	Advanced conversion technologies production of base or platform chemicals

Proposed Research Balance

Overall it is considered there needs to be a general shift in government-funded research effort away from growing/protection and transformational "biocomposites" research to the wood products and processing operations in existence now or that can envisioned in the next 5-10 years. The shift should be significant over the next two years and involve redirecting of the total Govt applied research fund. In addition there is Govt funded operational research (e.g., PGP) that needs to be directed by an industry approved research strategy.



(Based on F10,F11 & F12 FRST investment excluding Research Consortia)

It is considered that this current balance should be adjusted (as indicated by the arrows above) by increasing the share in solid wood significantly (ie in the order of a two to three fold increase) with a consequent realignment in the other three areas.

Key CRI's and Universities Relevant to the Forest Sector:

We encourage Government to ensure that SCP's and SCI's for the following CRI's reflect the research needs of the forest sector.

CRI	**Needs**
Scion	Forest growing/protection Wood processing/products Design/construction
IRL	Wood processing/products Scanning / sensor technologies
GNS	Wood processing/products Scanning / sensor technologies
Landcare & NIWA	Optimum land use and sustainability

University	Needs
University of Canterbury	Tree improvement and growing Wood processing/products Design/construction
University of Auckland	Composites Design/construction
Waiariki Institute of Technology	Wood processing / optimisation

Expected implications for forest-research delivering CRI's

As has been acknowledged, NZ science would benefit considerably from a greater degree of collaboration between CRI's and, with respect to those key CRI's with a potential role in delivering forest research we suggest the following "needs" should be addressed.

CRI	Refocusing
Scion	Enhanced capability - new skills to address industry issues Greater level of tech transfer Increased communication with industry
IRL	Greater focus on forest sector Greater core funding in key areas Increased capability Increased communication with industry
GNS	Greater focus on forest sector Greater core funding in key areas Increased capability Increased communication with industry

If these needs were addressed the sector would welcome a renewed and reinvigorated partnership with these organisations.

The industry supports an on-going investment in strategic research but considers an assessment of the realistic uptake by the NZ forest industry must be considered prior to undertaking such longer-term commitments. At present the balance is skewed far too heavily toward high risk, future focussed research. Also, for nearer term research a balance is required between new research and utilising existing technology, possibly offshore technology, and applying it in New Zealand.

Proposed KPIs for CRIs and CRI Scientists

In order to achieve a common understanding of direction and to ensure change is measurable /transparent our view is that the statements must go beyond generic comments of intent and overarching outcomes. In particular we urge the inclusion of Key Performance Indicators (KPI's).

KPI	Definition
Industry satisfaction survey	Independent annual survey to determine industry satisfaction with CRI
Project satisfaction survey	Questionnaire to be completed at the end of each project to determine level of industry satisfaction
Technology transfer uptake	Number and value of successful uptakes of knowledge by industry.
Peer-reviewed publications	Numbers of scientific peer-reviewed publications (we need this to encourage excellence in science)
Industry conference presentations	For each scientist
CRI-organised industry workshops	For each CRI