



# *Timber's Achilles Heel: Design Life and Durability*



Presentation to ForestWood (NZ)  
16 March 2016



Forest & Wood  
Products Australia

# FWPA's mission

We **collaborate** with government and industry stakeholders to determine strategy and deliver programs designed to **grow** the market for forest and wood products, increase productivity and profitability across the **value chain** and ensure positive environmental and social **outcomes**.

# Outcome-driven programs

1. Promoting the advantages of wood products
2. Aligning products to market needs
3. Assisting value chain optimisation
4. Increasing resource availability and reducing risk
5. Impacting decision making and industry capability

# Some recent achievements

- 8-storey timber buildings
- Improved social license for wood
- WoodSolutions building specifier program
- Trans-Tasman research consortia
- Research along the value chain
- More timely and relevant info to support decision making.

# Design life and durability: situation analysis

- Issues paper prepared by Peter Juniper (June 2014)
- Industry workshops by segment (Oct 2014)
- Consumer and building specifier market research (2015)
- Review of research capacity and needs by Roger Meder (2016)
- Approximately \$200K to get a clearer definition of the problem.

# What the industry tells us

- Poor market understanding of, and practice in relation to, timber durability
- The current system is disconnected from the market's service life expectations
- Unclear, inconsistent standards
- Inadequate monitoring / auditing
- Unclear compliance or verification.

# What the market tells us

- Most important selection criteria
- Timber performs poorly compared to other materials
- Higher in-service failure

## **BUT**

- In-service failure doesn't have major impact on decisions
- Timber is the most preferred material
- In service failure is viewed as wrong application or poor maintenance
- The material itself is rarely blamed.

# Lost research capacity

- Australia was once world research leader
  - Large amount of replicated observations
  - Technical capacity in preservation technologies
  - Multiple national and state laboratories
  - Active participation in standards development
- Australian expertise is now ageing consultants
- Research facilities have been closed
- Field trials have not been maintained
- Chemical companies now have global research centres based in USA and Europe.



# Other confounding factors

- Nature of the forest resource is changing
- Changes in market conditions
- Loss of traditional tradesman skills
- Current system may be barrier to innovation
- Difficulty of getting consensus in Standards arena
- Climate change
- Evolution of biotic agents



# Defining the problem

- Design life and durability is our Achilles Heel
- Lack of trust - no honest brokers
- Losing corporate memory
- Research and technical capability is essential
  - Mission critical for today's business
  - Needed as for just-in-case for resilience
- No sustainable funding structure
- Potential to lose government, consumer and specifier support.



# Rebuilding our R&D foundations

- Aggregation of existing proprietary data
- Maintaining and re-establishing field trials
  - Changing resource
  - Mixed wood
  - Composite products
- Development of predictive process model
  - Fundamental understanding of wood decay, biotic agents and biocides for long-term design life predictions
  - Climate change
  - Evolution and acquired resistance
- Verification and quality control
- Building systems and timber design life

# Rebuild technical capacity

- Two research nodes (Scion, Qld)
- Attract and retain international research leader(s)
- Postgraduate students across disciplines
  - wood mycology, entomology and wood science
  - processing modelling (big data, climate)
  - Verification technologies (chemical, non-contact)
  - Building systems research
- Industry upskilling and master classes

# Need to parallel process



Amend current standards

Rebuild technical capacity and trust

Sustainable funding model

# Key players and their influence

## Regulators

Australian Pesticides and Veterinary Medicines Authority (APVMA)

Australian Competition and Consumer Commission (ACCC)

National and State building regulators

## Collaborative

Australasian Wood Preservation Committee

Standards Australia TM12

Industry associations

## Industry

forest growers

chemical suppliers

wood manufacturers

treaters

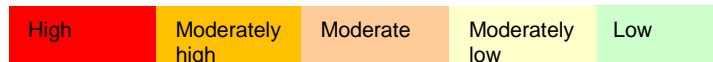
resellers

Builders/installers

specifiers

**Home owners and the community**

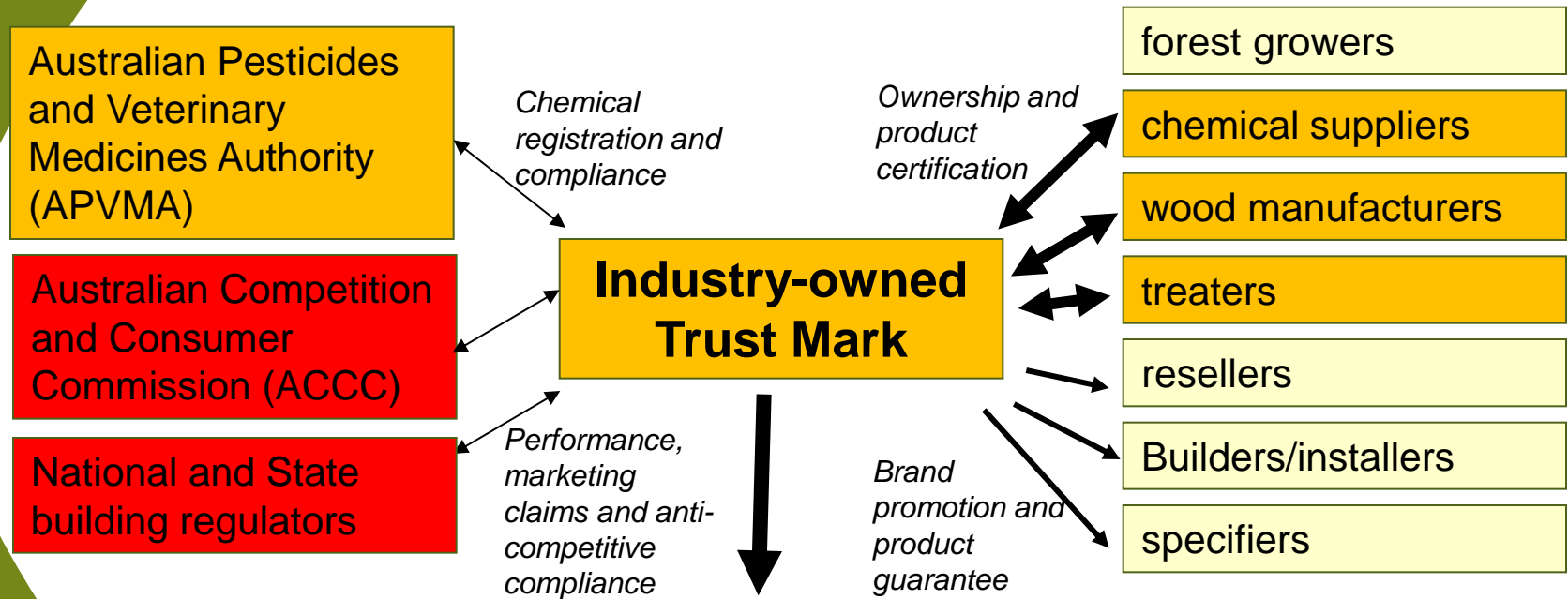
### Level of influence



*For illustrative purposes only*



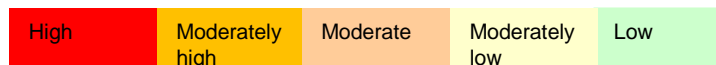
# An industry trust mark



## Home owners and the community

*A possible market solution funded by licence and registration fees that would guarantee product performance backed by appropriate insurance.*

### Level of influence



# 5 year program – Proposed annual funding

	Cash	In-kind	Total
<b><u>AUSTRALIA</u></b>			
Timber industry (via FWPA)	\$300K	\$50K	\$350K
Chemical companies	\$150K	\$150K	\$300K
Government (via FWPA)	\$450K		\$450K
Researchers		\$150K	\$150K
<b>SUBTOTAL</b>	<b>\$900K</b>	<b>\$350k</b>	<b>\$1,250K</b>
<b><u>NEW ZEALAND</u></b>			
Timber industry	\$200K	\$50K	\$250K
Chemical companies	\$150K	\$150K	\$300K
Government	\$500K		\$500K
Researchers		\$200K	\$200K
<b>SUBTOTAL</b>	<b>\$850K</b>	<b>\$400K</b>	<b>\$1,250K</b>
<b><u>TOTAL</u></b>	<b>\$1,750K</b>	<b>\$750K</b>	<b>\$2,500K</b>

# Inclusive and collaborative approach

- Aust and NZ are small players and need to work together
  - Protect markets from competing materials
  - Build systems of trust for all stakeholders
  - Avoid unnecessary duplication
- Aust is a major market for NZ exporters
- Harmonisation of standards
- Chemical suppliers are part of the solution
- Build upon SWI and STIC