

Dr Jim Moore Lecture Series: Keynote Address -The History and Importance of Integrating “Innovation” in to Forging Successful Forestry Businesses

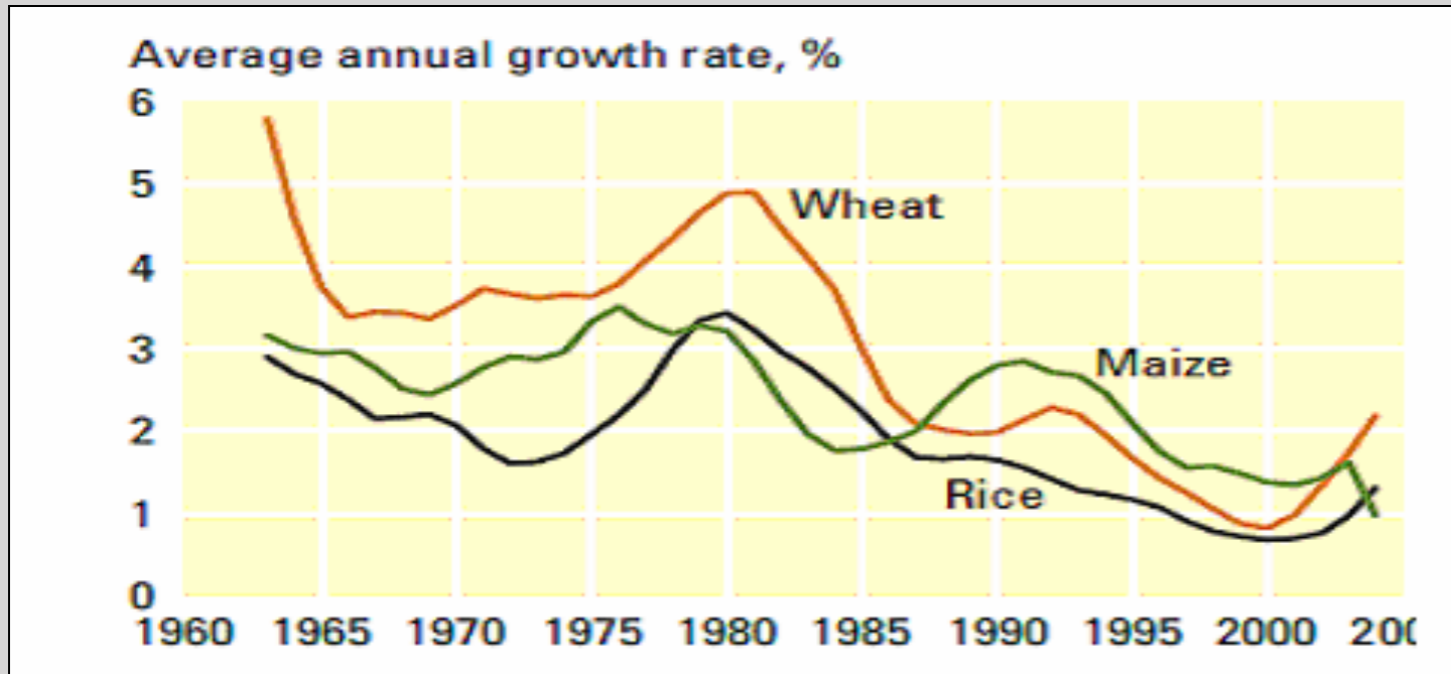
by David New Growing Excellence Inc.



“Ingredients of Innovation” - One Foresters Career Learnings

- #1 sustained improvement of profitability in forestry is all about maintaining a passion for improving cost efficiency through productivity improvements and outpacing your competitors in bringing new value to your customers
- #2 Innovation is a culture of developing tension based partnerships between science, economics and implementation
- #3 Organizations in which innovation are part of the culture invest significantly in benchmarking global best practices
- #4 Organizations that forge public private innovation partnerships succeed

Why Innovations Matter - Lessons From Agriculture?

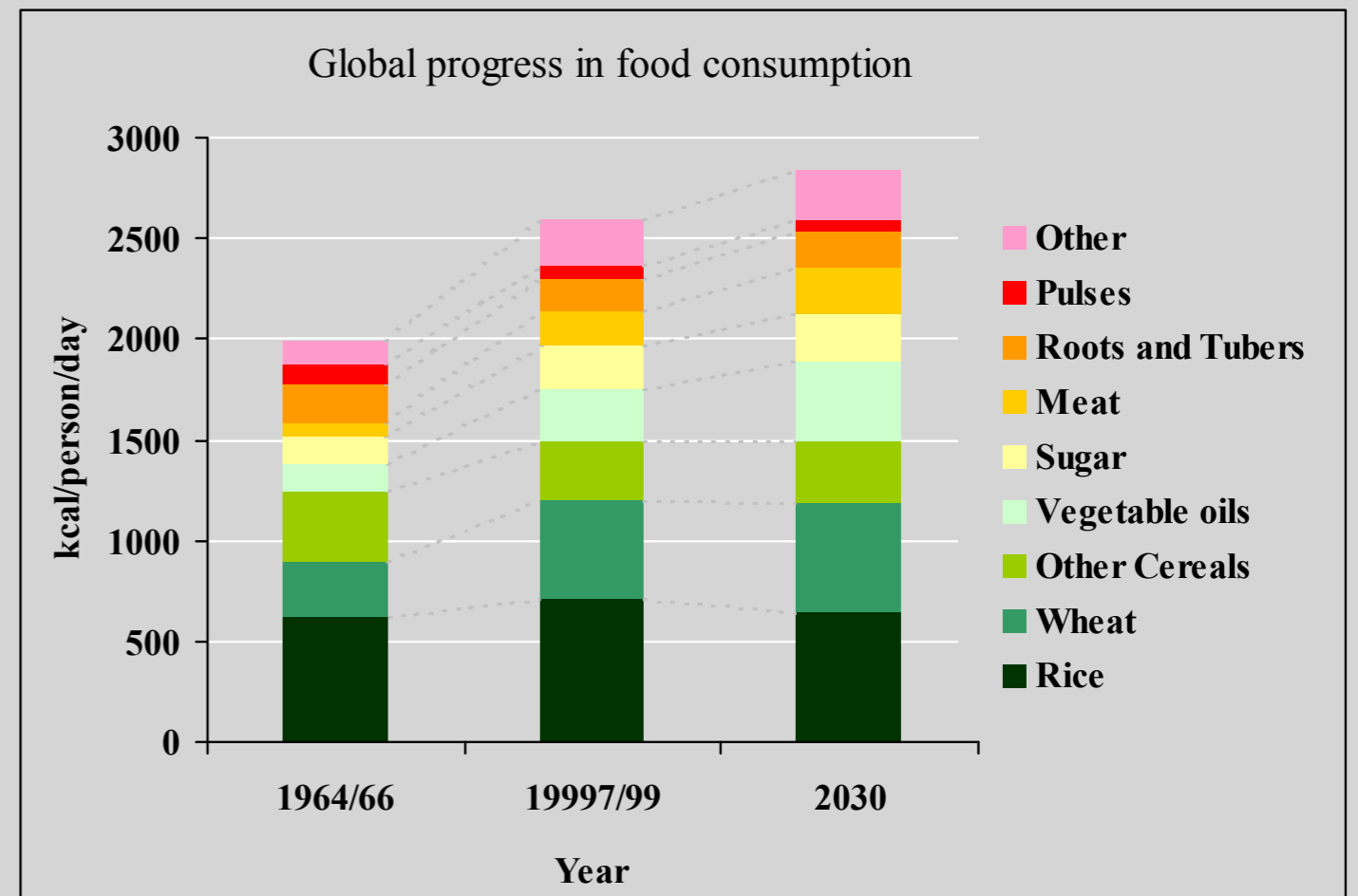


Source: World Bank (2008)

Global gains in productivity of major food grains decline while demand grows =

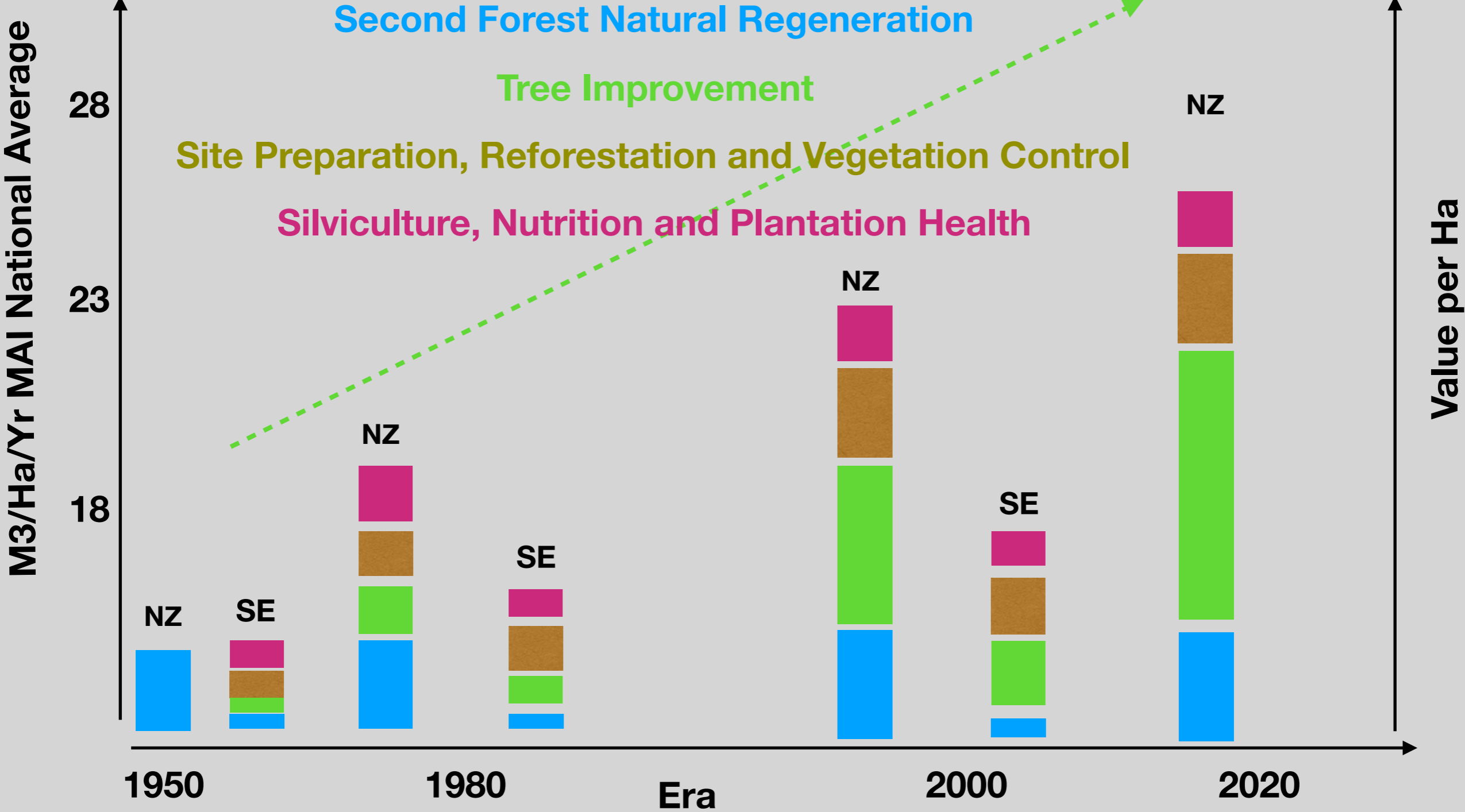
- **GMOs**
- **Precision field management**
- **Increases in acres irrigated and efficiency**
- **Acres converted to arable ag**

Innovators that invest in beating the trends are highly profitable



Source: FAO (2002)

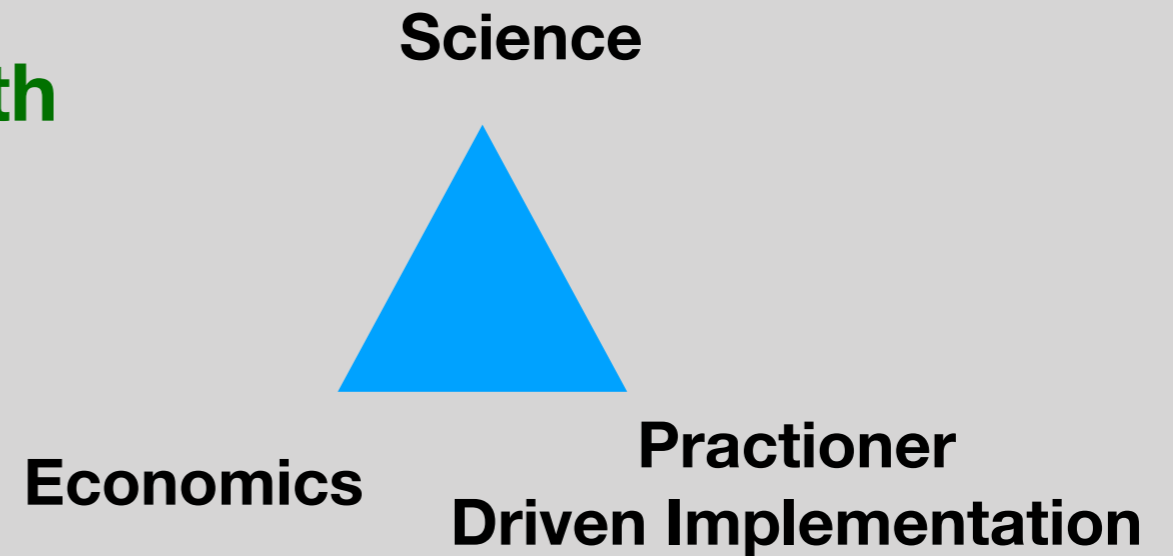
The History of Innovations in New Zealand and US SE Pine Plantations



Sources: US SE - Stanturf, Kellison, Broerman, and Jones NZ - New & MAF National Annual Exotic Forest Description

**So Were These Productivity
Gains All Just Good Luck?**

First Steps in a Journey: US South Innovation Partnerships Evolved as Part of the Sector's Culture =



US SE 1960-2010 enduring partnerships, major contributors and global proteges:

Dr Bruce Zobel NCSU - Global tree improvement

Dr. Lee Allen NCSU - Nutrition and tree productivity

Bill Baughman (Westvaco) - Implementation and economic value of innovation

Drs Clutter and Clutter UGA - Forest planning

Dr Dale Greene UGA - Harvesting productivity

Dr Bob Kellison (Champion) - Forest productivity

John Manz (WEYCO) - Mechanized harvesting

Over Time These Partnerships Created - Enduring Networks of Learning

Dr Bruce Zobel N.C. State 1956 -2011

First Director of Southern Tree Improvement Cooperative

In 1979 formed Zobel and Associates

Founded CAMCORE International Cooperative at N.C. State

Companies or agencies dominated by dozens of former students of Dr. Zobel working in tree improvement and members of multiple cooperatives

**International Paper, WEYCO, Westvaco, Champion International, Union Camp
Boise Cascade, Plum Creek, Rayonier, Aracruz, SAPPI, Fletcher Challenge, Riocell
USFS, Queensland Forestry Commission, SAFCOL, Mondi, Arauco, Arborgen**

New Zealand Innovation Journey = An Era of Economic Debates + FRI's Innovators + An Industry of "Yes We Can" Implementers

H. Bunn, Dr W Sutton, B. Fenton FRI - Economics, Silviculture and Global Trade

Drs Shelbourne and Carsons - Tree and Nursery Improvement

Drs Will, Paige & Jacks FRI and MAF - Tree Nutrition and Site Preparation

Allison, Poole, Grayburn, NZFP

Andrews, Neilson, Heard, Glead, Darling - Fletchers

Olson PF Olsen Consulting

Hector Lisboa Arauco



Seven major cooperatives. Perpetual debates on priorities leading to industry alignment on research priorities

FRI now SCION staff Integrated in to Implementation

Rotation long integrated improvements in fact pay for investments in innovation

Fletcher Forests of NZ Capturing Early Economic Benefits Through Integrating Tree Improvement in to Reforestation and Silviculture

1973	Common Planting Stocking was 1600 trees per hectare. Normally at least two weed control operations
1980-82	Planting Stocking Drops to 1000-1200 seedlings per ha (today 800-1000)
1984	Weed control drops to 1.2 times per rotation for all hectares planted saving >\$NZ90/ha
1985	PCT and 1st Pruning cost drop by >\$NZ180 per ha
1987	Savings in Reforestation + Silviculture Pay for R&D investments by 145 dollars for each dollar invested in innovation

New Zealand's Decades of Innovation

Brief History of NZ_Tree Improvement

NZ Multiple Rotation Improvements

Benchmarking = How Practitioners Become Innovators

Lessons and legacies - John Manz formerly of
Weyerhaeuser and Hector Lisboa formerly of Arauco S.A.



Pruned trees - WEYCO Forests - US South



Radiata Pine Chile

Lessons and Opportunities for Western US

- Refocus cooperatives to focus on innovation and more importantly the process of innovation
- Increase investments from sector in implementation partnerships
- Increase collaborative benchmarking ahead of R&D
- Researchers are assigned sector implementation mentors
- Sector encourages career long time invested in practitioners R&D
- Government refocus to innovation performance based R & D funding