Mapping the South African pulpwood supply chain

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South African forestry supply chain
Background

• Awareness that in the future supply chains will compete – not companies
• Improve the whole vs individual discrete events
• Integration between a series of events that take a product, from its basic form to completion

• In South Africa:

Realisation of a supply chain but also important value chain
Forestry stakeholder engagement

• The initiative started when
  • Need to understand the interaction/interface between harvesting and silviculture
  • Tradition in South African forestry that raw material delivery means everything
  • Not much quantification of affect of this and potential poor practice
• Country wide survey and interviews:
  • Establish what the industry sees as important
  • Understand how to apply these in a framework to understand efficiencies and potential inefficiency
Why are there issues in the SA forestry value/supply chain?

- Management structures and focus
  - Separate management of harvesting and silviculture
  - Drive to lower costs within each operational area

- Outsourcing/contracting of operations

- Increased mechanisation of operations
  - Labour – ergonomics
  - Cost effective
  - Technological advances
  - Lack of flexibility

- Move from a supply chain to a value chain
What was needed to understand the South African value chain?

- Mainly aimed at the pulpwood value chain, but has evolved
- Key people at various parts of the chain
  - Insight into particular jobs, roles and constraints
  - Also potential to critique and comment on other parts or roles
- Conducted a brown paper process
  - Done mainly in the manufacturing industry
  - Pictorial view of the supply chain
  - On ICFR staff as a start
  - Then on industry
The brown paper...
How did we capture the results?

- Measurements
  - What is recorded understood and to current specifications
- Issues
  - What are the shortcomings of these measurements and specifications
- Opportunities
  - Are there ways to improve or capitalise on measurements and shortcomings
- Research needs
  - Can research and research initiatives be prioritised or piloted based on this information
Understanding the complex value chain

Temporary unplanted area (TUP)

Long term
- Harvesting system
- Return on investment
- Weeding

Medium term
- Planting system
- Burn or mulch
- Product
- Weeding window
- Planting stock supply
- Residue management

Time
Short term
- Weeding
- Survival

Medium term
- Market

Long term
- Harvesting system
- Product

Before

After
Where to from here?

- Report results presented here (in process as an ICFR bulletin)

- Use the map as the basis for a framework to model available information (operation vs productivity curves, effects on uniformity etc.)
  - Initially focus on residue management (vital as a part of RSA forestry)
  - This will identify gaps in the research and understand management of costs, productivity and sustainability

- Additional use of this information:
  - Benchmark this supply chain against other similar value chains and analyse for additional opportunities
  - Use this process to map other forestry value chains (sawtimber, poles etc).
Re-focus of research and presentation of research results…

- Development of new research areas at the ICFR
  - Forest operations research, inter-rotation management FOR forest management at the ICFR
    - Understanding of the influence of management decisions
    - Use of precision forestry to answer value chain questions
    - Apply past, current and new research results in a standardised framework
- Collaboration between companies and other research institutes
  - Framework for forestry enterprise simulation >> MSc. studies around research return on investment and cost sensitivity
- Greater understanding of the full value chain approach to research and operational forestry interventions
Benefits to the SA forestry supply chain?

• Informed decisions at planning level >> optimal silvicultural regimes >> productive low cost harvesting

• Show potential to increase economic viability of operations

• Overall understanding of influences parts of the value chain on others
Mapping the South African pulpwood supply chain

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Thank you