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RESEARCH CORPORATION FOR AUSTRALIAN LANDSCAPES

Opportunities in Research and Development for Woody Tree Crops

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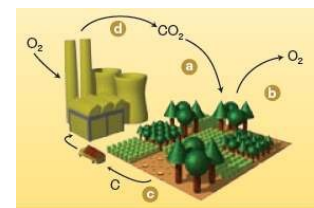
Outline

- * Drivers for diversifying farming systems (Briefly).
- * What are the opportunities and directions for woody crops ?
- * What are the knowledge gaps and hence research needs?



Drivers for diversifying into woody crops

- * Climate limits the productivity of dryland systems ,
 - woody crops offer greater resilience
- * Regional development
 - Woody crops proposed as a diversification option
- * NRM & Climate Change issues require large scale responses
 - Salinity mitigation ?
 - Biodiversity conservation ?
 - Bioenergy/Carbon sequestration





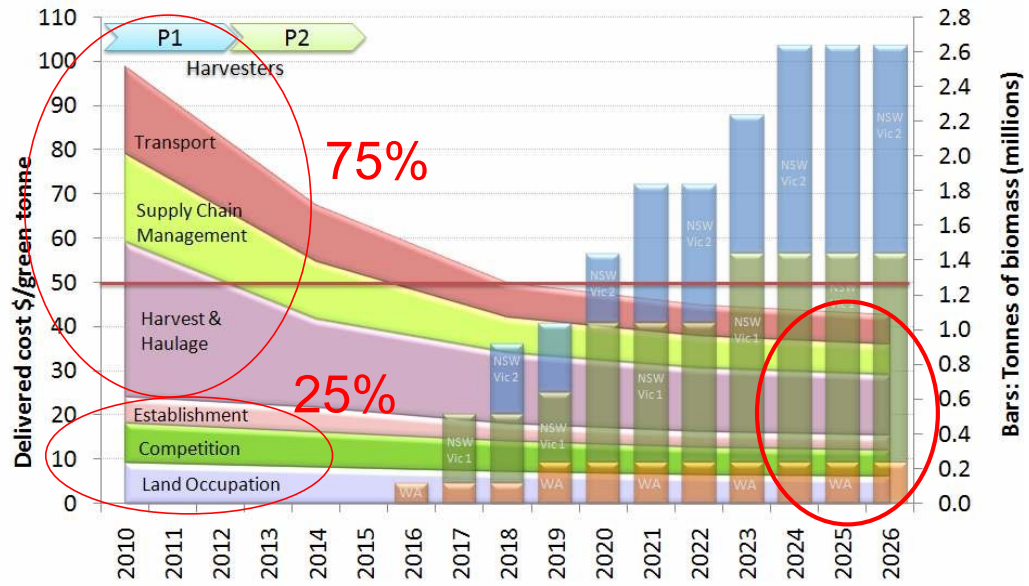
The new industries will require:

- * a resource of sufficient size
- * located in a consolidated area (planning)
- * a supply chain able to deliver the resource
 - large volume, low cost harvest capability
 - coupled with biomass handling infrastructure and services
- * markets for products, energy generation, biofuels, CO₂, industrial substrates,
 - favourable policy settings
 - strong market development





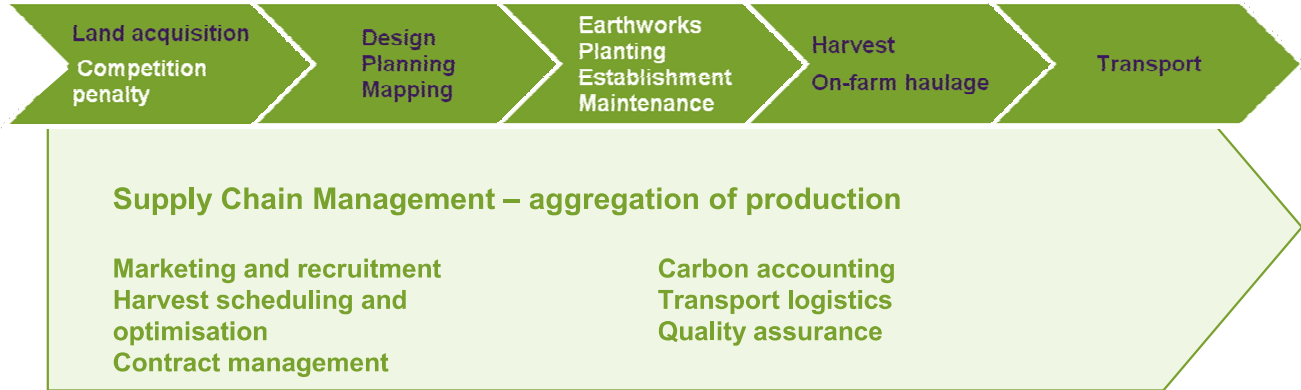
Delivered cost of mallee biomass & utilization for electricity generation



Area (,000 ha):	2.4	13	31	50	68	86	105	123	139	155	163	163	163	
GHG offset (Mt):					0.1	0.3	0.8	1.3	2.1	3.0	4.0	5.1	6.4	7.8	9.1



Mallee Biomass Supply Chain



Impediments

- The industrial option, Processor confidence
- Woody crop harvester
- Supply chain: the harvester is only one link in the biomass supply chain



Underpinning knowledge: Long-term projects

- * **Woody crop options**
 - Mallee selection & breeding
 - Other species ?
dependent on regions & products
- * **Growth and yield**

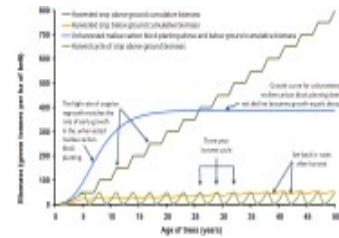
Water, nutrients and biomass productivity

 - climatic influence (where is it most profitable)
 - landscape location (local hydrology, salinity, other niches)
 - Configuration/design (optimising production/
minimising competition)
 - Management : harvest timing, nutrition
- * **Environment**

Carbon sequestration

 - Methods/techniques (remote /direct)
 - Investment in the knowledge

Water management





Utilisation of the existing mallee resource:

Issues (Development):

- * Markets
- * Industry support
- * Harvest technology (harvester may not be the answer)
- * Logistics



Summary

- * There is a need for diversification, however climate limits the options
- * New woody crop industries provide the potential for a **transformational change**
 - Economic growth
 - Environmental benefits ?
- * Considerable technical and investment challenges before this occurs
 - Options for current resource
 - Development of the industry (Markets, supply chains, underpinning knowledge)
- * Large task, focus is necessary, Considerable knowledge and skill base (in both practical and R&D areas)



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