Day 1
Future Farm Industries CRC
Profitable Perennials™ for Australian Landscapes

Mike Ewing - A/Research Director
Our Vision

Transform Australian agriculture and rural landscapes by developing and applying Profitable Perennials™ technologies to innovative farming systems and new regional industries.
Our Outcomes

Farming systems, cultivars and technologies that will ...

• Increase productivity of existing industries
• Develop new industries - woody crop
• Reduce dryland salinity, conserve biodiversity and water resources
• Adapt to drought
Technologies Adopted on Large Scale

Adoption targets

- 7.3 m ha innovative farming systems, better perennials for livestock and crop production
- 850,000 ha salt tolerant farming systems
- 100,000 ha new woody crops

Target zones

- 60 m ha southern temperate Australia
  - 25 m ha high rainfall
  - 35 m ha crop-livestock
## Programs

<table>
<thead>
<tr>
<th>Innovative farming systems  &gt;on farm</th>
<th>New woody crop industries  &gt;for regions</th>
<th>NRM solutions  &gt;for catchments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>P1</strong>: Future Livestock Production</td>
<td><strong>P3</strong>: New Woody Crop Industries</td>
<td><strong>P4</strong>: Farming Saline Landscapes</td>
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<td><strong>P2</strong>: Future Cropping Systems</td>
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<tr>
<th><strong>P6</strong>: Economic, Social and Policy Analysis</th>
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</table>

**P7**: Education and Training
## Program Leaders

<table>
<thead>
<tr>
<th>Program (P)</th>
<th>Leader and Affiliation</th>
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</thead>
<tbody>
<tr>
<td>P1: Future Livestock Production</td>
<td>Joe Jacobs, DPI, Vic</td>
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<tr>
<td>P2: Future Cropping Systems</td>
<td>Ali Bowman, DPI, NSW</td>
</tr>
<tr>
<td>P3: New Woody Crop Industries</td>
<td>Mike Bennell, WLBC, SA</td>
</tr>
<tr>
<td>P4: Farming Saline Landscapes</td>
<td>Ed Barrett-Lennard, DAFWA</td>
</tr>
<tr>
<td>P5: Biodiversity and Water</td>
<td>Ken Wallace, DEC, WA</td>
</tr>
<tr>
<td>P6: Economic, Social and Policy Analysis</td>
<td>Dave Pannell, UWA, WA</td>
</tr>
<tr>
<td>P7: Education and Training</td>
<td>Scott Glyde, CSU, NSW</td>
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FFI Business Growth Strategy

- Inkind Resources: 52%
- Industry, R&D: 18%
- CRC Program: 30%

FFI CRC Startup Resources - $114m

- ~$1m pa of additional industry investment
- $0.5m pa consultancy and service revenue
- National Saltland Service – positive cash flow by Year 5
- $127m target

Business Growth Strategy
Partner Relationships

- Participants
- CRC Programme
- FFI Associates
- Commonwealth Agreement
- Memorandum of understanding
- Licence
- Project contract
- Industry Co-investors
- Commercial partners

FFI CRC Ltd
FFI CRC Science Capability

- Creating new commercial perennial plants
  - PastureSearch

- Designing new farming systems
  - Enrich
    - EverGraze
    - Sustainable Saline Grazing

- Creating new industries
  - Salt tolerant wheat
  - New woody crops

- Managing resources in catchments
  - Natural resource management investment framework
Research opportunities
- embedded in the programs/projects

e.g. ENRICH – Scientific opportunities and challenges

- Fodder shrubs (e.g. *Atriplex, Rhagodia* etc) identified and adapted to the needs of animal production and land capability.
- Seed biology of the target species - direct sowing
- The role of plant secondary compounds (common in shrubs)
- Plant compounds and their role in rumen function.
- Resilient systems designed that improve livestock health and welfare while increasing water use and plant diversity and decreasing erosion.
- New farming system based on shrub species for multiple roles (profit, productivity, animal health, multiple environmental benefits).
- Shrub systems conceived, analysed, justified, researched and developed as a sub-system of a whole mixed farming enterprise using multi-disciplinary and participatory research and development.
## Transitional Management

<table>
<thead>
<tr>
<th>CRC Salinity</th>
<th>FFI CRC</th>
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<tbody>
<tr>
<td><strong>2006/07</strong></td>
<td><strong>2007/08</strong></td>
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<tr>
<td>100% CRC Projects</td>
<td>20% FFI Projects</td>
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<td></td>
<td>80% CRC Projects</td>
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<td>New project development</td>
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Harvest & Delivery Plan 2007/08

13 ‘headline’ technologies & farming systems

EverGraze

Future Farm Industries CRC
Profitable Perennials™ for Australian Landscapes
FFI Achieving Outcomes… Accountably

**Products**

- Technologies
- Farming systems
- New industries
- Decision tools

**Accountable outputs**

- Performance standards
  - profit
  - NRM
- Milestones
  - path to adoption
  - R&D
  - Education & Training

**Outcomes**

- Adoption targets
- “ICE”
- $1.3b NPV
Future Cropping Systems

**Products**
- New tools
- Drought tolerant forage legume etc
- EverCrop
- EverCrop decide

**Accountable outputs**
- 10% extra profit
- 50% recharge reduction
- +
- 100 trained users (2013)
- 100 farms practice change (2014)

**Outcomes**
- <5.25 million ha (2030)
- < $490 million NPV
Novel perennial forage legumes for cropping systems in low and medium rainfall Mediterranean zones

- Based on a new generation of drought tolerant, productive and persistent species
  - Native and exotic

Buntine - winter 2007

Newdegate - winter 2007
UWA issues

• FFI CRC open for business
  – Headquarters at UWA
• Perennial plants the primary focus - industry links
  – System compatible
  – $ & NRM drivers
• R&D opportunities - all programs
  – Embedded fundamental science
• Post graduate student program
  – Topics
  – Co-supervisors
www.futurefarmcrc.com.au
FFI CRC’s Functions

1. Commercialisation and utilisation
   > Path to adoption
   > Harvest & Delivery Plan 2007/08
2. Research and development
   > Innovative science
3. Education and training
FFI CRC’s Paths to Adoption

1. Innovative farming systems
   > on farm

2. New woody crop industries
   > for regions

3. Natural resource management solutions
   > for catchments
FFI Directors and Executive

Board
• Andrew Inglis – Chairman
• Lucinda Corrigan – Deputy Chairman
• Kathryn Adams
• Andrew Campbell
• Tim Healey
• Mick Poole
• Tim Reeves
• Kevin Goss – Executive Director

Senior Executive
• Kevin Goss – CEO Designate
• Mark Stickells – Company Secretary, A/COO
• Mike Ewing – A/GM Research
• John Powell – A/GM Commercialisation & Utilisation
## Adoption Targets for Products

<table>
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<tr>
<th>Product</th>
<th>Performance standard</th>
<th>Adoption target</th>
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<tbody>
<tr>
<td><strong>FUTURE LIVESTOCK PRODUCTION</strong></td>
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<tr>
<td>EverGraze ‘original’</td>
<td>50% extra profit and 50% recharge reduction</td>
<td>1,300,000 ha (2030)</td>
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<tr>
<td>EverGraze ‘native pastures’</td>
<td>50% extra profit, recharge reduction and biodiversity improvement quantified</td>
<td>170,000 ha (2030)</td>
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<tr>
<td>New cultivars, species</td>
<td>$15-50/ha extra profit and 35-55 mm pa additional water use</td>
<td>5.25 million ha (2030)</td>
</tr>
<tr>
<td>Enrich</td>
<td>30% increase in carrying capacity, 50% recharge reduction, and biodiversity improvement quantified</td>
<td>600,000 ha (2020)</td>
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<tr>
<td><strong>FUTURE CROPPING SYSTEMS</strong></td>
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<tr>
<td>EverCrop</td>
<td>10% extra profit and 50% recharge reduction</td>
<td>See above (new cultivars,species)</td>
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<tr>
<td>Salt/water-logging tolerant wheats</td>
<td>$35-46/ha increase in profitability</td>
<td>500,000 ha (2020)</td>
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<td><strong>NEW WOODY CROPS</strong></td>
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<td>“Wyalong’ oil mallee seed</td>
<td>$10/green tonne price increase for farmers biomass, ‘sink capacity’ for &gt;50% of excess water</td>
<td>100,000 ha (2030)</td>
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<td><strong>FARMING SALINE LANDSCAPES</strong></td>
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<tr>
<td>HIGHPak</td>
<td>Average 2.5% increase in whole farm profitability (2,000 ha farm with 10% land salt-affected)</td>
<td>150,000 ha (2020)</td>
</tr>
<tr>
<td>New cultivars</td>
<td>10% extra profit in livestock enterprise (50% more edible biomass; 20% higher nutritive value)</td>
<td>200,000 ha (2020)</td>
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</table>
Investment Model

- Participants Agreement
- Project contract
- Research
- Development
- Demonstration
- Feasibility Studies
- Commercial partners & FFI associates
- Case specific (MOU, licence)
- Centre I.P.
- Leveraged investment of Participant funds
- Co-investment by industry partners
- Products & Services

Investment $ million

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Profitable Perennials™ for Australian Landscapes
EverCrop – Future cropping systems

Projected wheat crop in WA under the 2050 climate change scenario

source: DAFWA & AGO