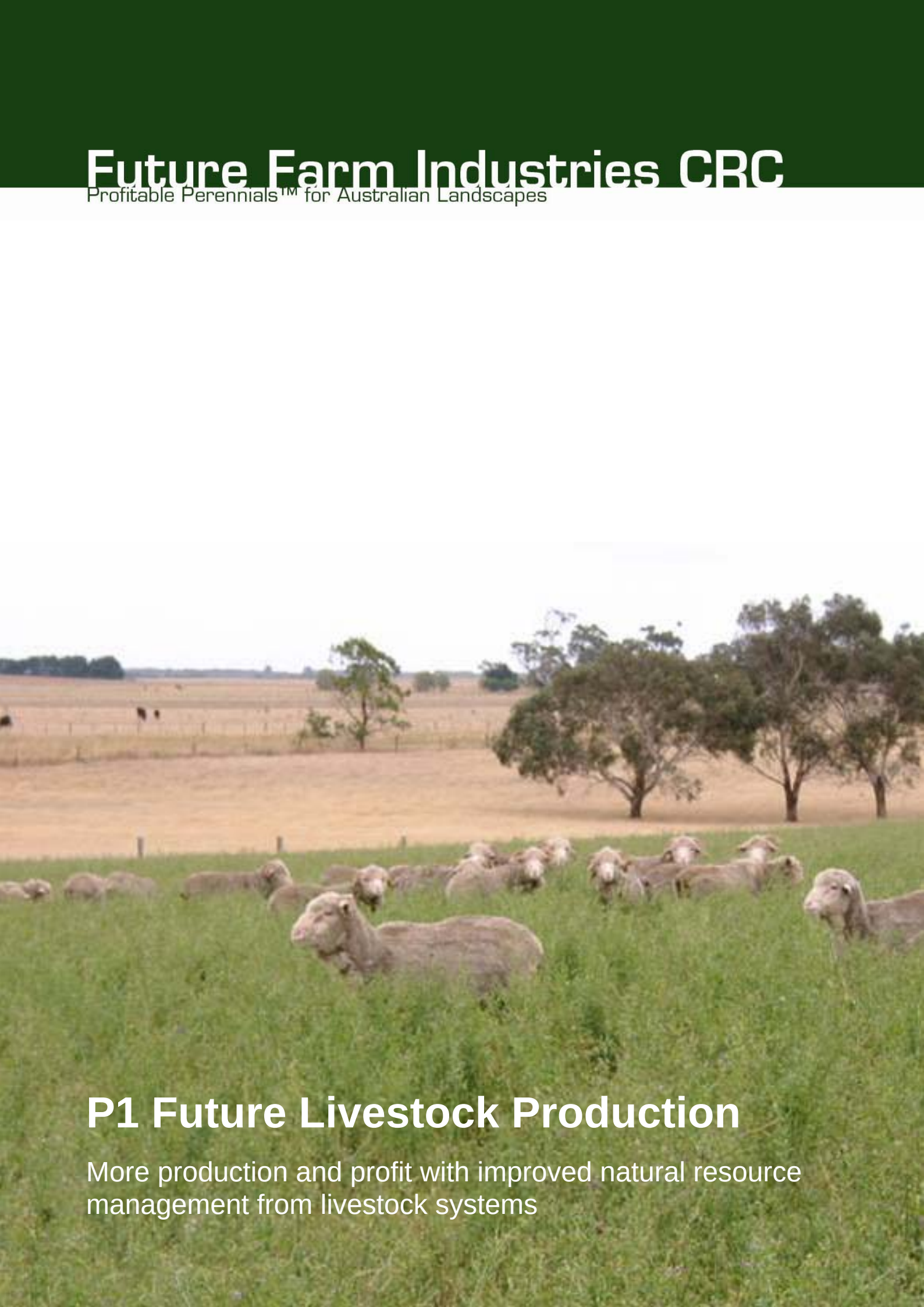
Future Farm Industries CRC

Profitable Perennials™ for Australian Landscapes



P1 Future Livestock Production

More production and profit with improved natural resource management from livestock systems

Future Farm Industries CRC

Profitable Perennials™ for Australian Landscapes

Big changes in land use

Deliverables:

Practice change on 2900 farms across 350,000 ha within the life of FFI CRC with new perennials released for adoption on >3m ha..

CRC Headlines 2014…

"…Record production of livestock grown on perennial pastures with profitable crops in mixed systems"

"…Perennial claims of drought proofing gain support"

"…New plant varieties recolour landscape"

"…Plants provide medicine and shelter as livestock welfare reaches new standards"

"…Perennials put degraded land back into production – no more dust storms"

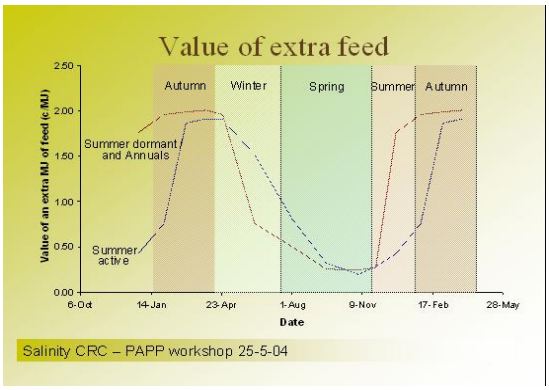
Future Farm Industries CRC

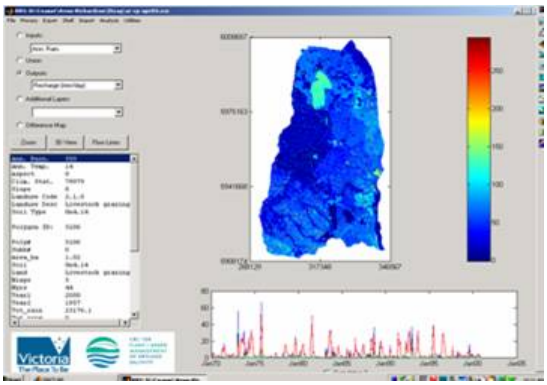
Profitable Perennials™ for Australian Landscapes

Innovative design integrates profit and natural resources outcomes

MIDAS

CAT



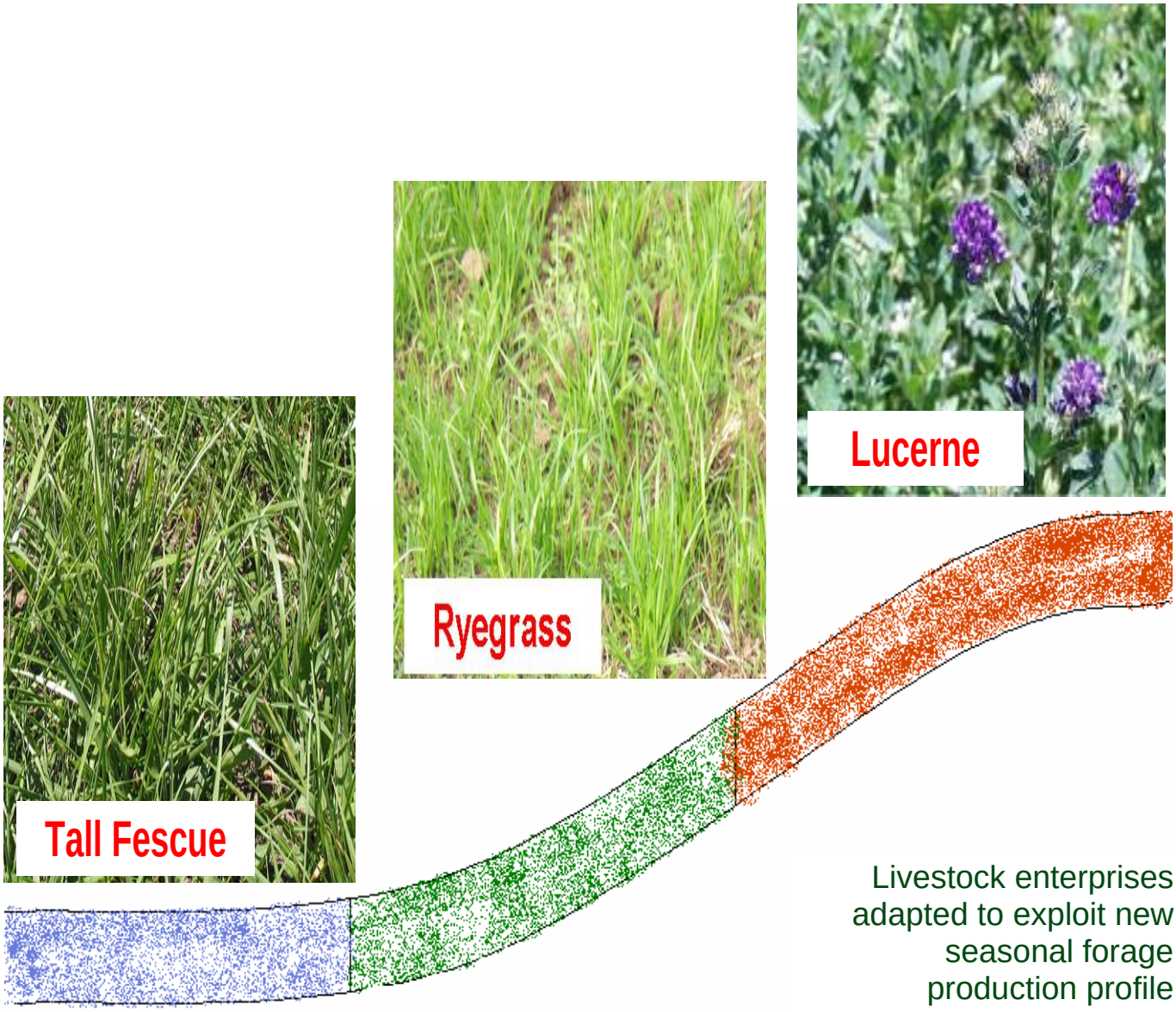


- **Increase profit by 50%**
- **Reduce recharge up to 50%**
- **Increase biodiversity, perenniality, reduce erosion**

Future Farm Industries CRC

Profitable Perennials™ for Australian Landscapes

Perennial plants matched to landscape and livestock enterprise



Livestock enterprises adapted to exploit new seasonal forage production profile

Case study: Glenelg Hopkins Catchment

Future Farm Industries CRC

Profitable Perennials™ for Australian Landscapes

Best livestock, best plants, best system

High performance perennials

Superior performance sheep

Innovative design

↑ Profit 126%

- ↑ Stocking rate 5%
- ↑ Wool income 56%
- ↑ Sale of sheep 56%

↑ Natural resource benefits

- ↓ Recharge 25%
- ↓ Erosion
- ↑ Groundcover

Areas of scientific demand

- Foetal programming
- Embryo mortality
- Nutrients for immunity
- Environments for survival
- Meat/wool quality
- Early sexual maturity
- Self-medication

Detailed example refer to Glenelg Hopkins research site

Future Farm Industries CRC

Profitable Perennials™ for Australian Landscapes

New **drought tolerant perennial grasses, legumes, herbs and shrubs** increase the resilience of farming systems to **climate change** and **increase profitability**

Wild relatives of lucerne

New drought tolerant Mediterranean cocksfoot

Sub-tropical grasses

Chicory

Saltbush

P1 Future Livestock Production

Research focus

- Improve profit in the high rainfall zone to by 50% and significantly improve natural resource management – EverGraze and EverGraze Plus
- Shrub based production in the low rainfall zone to increase carrying capacity by 30% and improve natural resource management - Enrich
- At least 4 new herbaceous and woody forage species (PastureSearch) for:
  - warm season, summer dominant rainfall zone
  - acid soils in high and medium rainfall zones
  - low/medium rainfall crop/livestock zone

Commercialisation and Utilisation

- Research demonstration network
  - 6 key farming systems research sites
  - 50 supporting sites
  - Species cultivar testing sites in 4 states
- Utilisation network
  - Agribusiness (300 Landmark agronomists)
  - 5-7 Catchment Management Authorities
  - Farmers, farmer groups and extension specialists from 4 states
  - 4 rural development corporations
- End user input in design and implementation
  - Supported by P6 on defining the optimum adoption strategy
  - Integrated with P7 in operational extension and training
- Commercial release of new plant varieties
  - Marketed to consumers by an established and dynamic seed industry

Key Scientists

Dr David Masters	Time Committed: 0.7	Organisation: CSIRO
Skills and expertise: David has an international reputation in mineral, amino acid and protein metabolism and has broad research background in livestock nutrition, management and applied physiology and biochemistry. In recent times he has applied his skills and leadership to livestock in broad acre agricultural systems with a particular interest in innovative grazing systems.		
Refereed Journal: 90	Conference papers: 64	Industry publications: 15

Dr Dean Revell	Time Committed: 0.4	Organisation: CSIRO
Skills and expertise: His research interests are in animal nutrition and the interactions between plants and animals, including the role of plant compounds on diet selection and the role of livestock in natural resource management. His most recent initiatives have centered on developing wider uses for native perennial shrubs in managed agricultural systems.		
Refereed Journal: 29	Conference papers: 13	Industry publications: 6

Dr Brian Dear	Time Committed: 0.6	Organisation: NSW DPI
Skills and expertise: Brian is a national research leader in research activities involve developing new pasture legumes cultivars and investigating the integration of new pasture forage species combinations in rotation with crops, particularly in the SE Australian mixed farming zone.		
Refereed Journal: 55	Conference papers: 86	Industry publications: 23

Ms Angela Avery	Time Committed: 0.6	Organisation: VIC DPI
Skills and expertise: Angela has past experience in research into lamb genetics and nutrition, intensive beef production, organic systems, grain evaluation, and grapevine phylloxera. She is nationally prominent through leadership of projects that focus on farming systems for recharge, biodiversity and profit outcomes.		
Refereed Journal: 6	Conference papers: 2	Industry publications: 45

Dr Andrew Thompson	Time Committed: 0.5	Organisation: VIC DPI
Skills and expertise: Andrew's research interests are in the development of sustainable and profitable grazing systems, understanding of the fibre characteristics responsible for tender wool and the effects of nutrition on the performance of the ewe and the lifetime productivity of her offspring, a subject in which his expertise and leadership is nationally acknowledged.		
Refereed Journal: 12	Conference papers: 42	Industry publications: 21

Mr. Paul Sanford	Time Committed: 0.7	Organisation: DAFWA
Skills and expertise: Paul has broad experience in the physiology ecology and agronomy of pasture legumes and grasses and his recent work has focused on the interactions between pastures and livestock in grazed pasture systems. His work in tackling regional problems of pasture and livestock integration has become a national model for future action.		
Refereed Journal: 23	Conference papers: 6	Industry publications: 21

Dr Greg Lodge	Time Committed: 0.5	Organisation: NSW DPI
Skills and expertise: Greg has research experience in plant evaluation, selection and domestication, grazing management of native and sown pastures, pasture agronomy, plant nutrition, hydrology, soil carbon and microbiology, livestock production, economics, soil water content, soil health and biophysical modelling. Greg has been a prominent scientific leader in several major national initiatives.		
Refereed Journal: 84	Conference papers: 110	Industry publications: 85

Dr Phillip Vercoe	Time Committed: 0.2	Organisation: UWA
Skills and expertise: He has broad experience in animal nutrition and genetics and has developed special skills in the area of aquaculture and rumen microbiology and chemistry which he has applied to developing an understanding of the positive and negative impacts of native plants on ruminant production.		
Refereed Journal: 39	Conference papers: 40	Industry publications:

Resource summary

Program	Future Livestock Production	Notes
Cash resources	$5.67m – FFI CRC investors $5.7m – CRC Program	
Inkind FTE	23 FTE per annum	
Inkind $ resources	$16.34m	27.8% of total
Total Resources	$27.8m	24.5% of total
Key Industry Investors	MLA $3.675m AWI $1.4m	