



**Participative, Blended &
Networked Learning:
Meeting Educational Needs in
Australia's Rangelands**

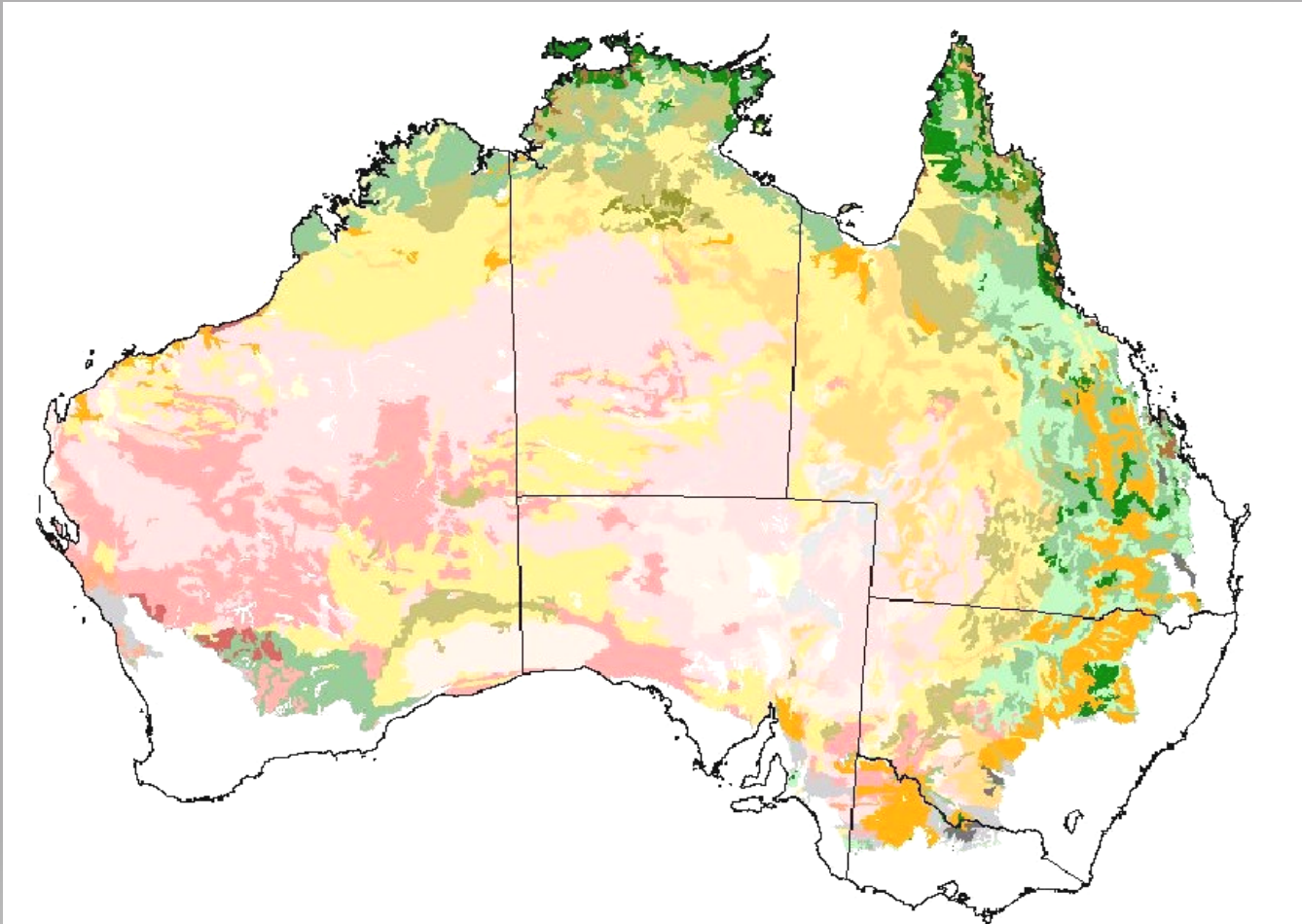
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Australia's Rangelands



Source:
NLWRA 2001
ABARE 2001

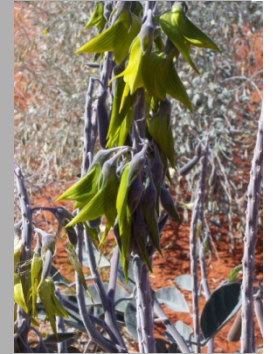
The one region that will expand with Climate Change !



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Rangelands Australia (RA)



- **Strategic response to a national need***
 - Rangelands important – Australia’s largest natural resource
 - Educational opportunities ‘out of touch’ with stakeholders needs
 - Existing programs either production OR environmental focus
 - Programs inadequate in ...
 - ✓ People issues – management, leadership
 - ✓ Integration of economic & ecological theory and issues
 - ✓ Practicality & relevance to current and emerging issues, range systems
- **Challenges set: ‘do things differently’, be demand-driven & student- focused.**

* AgTrans Research, 1998



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Overview

- Knowledge and Skills Needs
- Knowledge & Skills Gaps
- Alignment of Existing Programs with Needs
- Educational Processes and Outputs
 - Educational Design and Course Development
 - Blended Learning Environments
 - Flexible Delivery
 - Continuous Improvement
- Outcomes
 - Course Ratings & Feedback
 - Participation & Demographics
 - Impact
 - External Recognition
- Lessons and Challenges
- The Road Ahead



Educational Context

- Expectations of ranchers, advisers, NRM facilitators growing – need for **professional development**
- Complex problems ... need to integrate disciplines and different types of knowledge
- Knowledge and skills reside in a diversity of sources
- Industry and governments recognized a need to build capacity for ...
 - Profitable enterprises
 - Healthy landscapes
 - Vibrant communities
 - Change !
- Embed ‘triple-bottom-line’* and systems thinking

*Elkington, 1997



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Supply and Demand Issues

Demand

- Knowledge and skills needs – 5-10 years out ?
- Knowledge and skills gaps – especially re ranchers, extension staff, Landcare & regional NRM facilitators ?
- Learner preferences ?

Supply

- Alignment of existing programs with needs ?
(eg. Vocational, undergraduate & graduate levels)
- Alignment of existing courses with needs ?
- How best to ‘add value’ ?
- Quality Assurance and Improvement ?



Approaches

- Strategic, structured and parallel initiatives
- Social marketing¹ - students at the center of decisions
- Social learning² – nurturing a learning community
- Participatory processes³ - engaging a range of stakeholders (Experience, ‘Hard’ and ‘Soft’ Sciences)
 - Encourage involvement and ownership
 - Broker knowledge from a range of sources
 - Multiple perspectives
 - Facilitate development of a learning community

¹ Andreason, 1995; ² Wegner, 1998; ³ Zaphiris, Laghos & Zacharia , 2009



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Knowledge and Skills Needs

Key Steps in the 24 Focus Groups

- Brainstorm current issues and challenges
- Presentation on Forces driving change, global and national trends
- Group defines the most likely scenario for their region in 10-15 years
- With the future scenario and a 5-10 year timeframe in mind, group defines:
 - Key personal attributes for individual success
 - Critical areas of knowledge for enterprise and community success



Focus Group Participants

- Ranchers/Pastoralists
- Government agencies (eg. Primary Industries, Natural Resources, Water, Mining)
- Research Organizations (eg. CSIRO, CRCs)
- Policy makers, Local government representatives
- Landcare, Regional NRM & Conservation groups
- Indigenous Land Corporation & Groups
- Service Providers (eg. Banks, Rural Suppliers)
- Other industries – Mining, Tourism, Defence

- Men, Women & Youth



Focus Group - Places



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Focus Group - Places



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Knowledge and Skills Gaps

... and priorities for course development



Surveys ... 325 responses ...

- Land managers/Ranchers
- Agency / Landcare/ Regional NRM staff

From the list of needs asked to identify areas for development in 'most' of the others and in themselves !

... both personal qualities and knowledge



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What 'most' know enough about ...

Ranchers

- Livestock management
- Pest animals & weed management
- Basic bush skills
- Cultural appreciation



NRM/Extension staff

- Understanding natural resources
- Legislation & regulations
- Landscape functioning



Gaps in Knowledge

- Economic
- Environmental
- Social
- Over-arching



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Gaps in Knowledge

Ranchers

NRM/Extension staff

Economic

- Marketing
- Business management & planning
 - Sustainable production systems
 - Diversification

Environmental

- Landscape processes & function
- Legislation & regulations
- Understanding of natural resources
 - Environmental management systems/certification



Gaps in Knowledge (cont'd)

Ranchers

NRM/Extension staff

Social

- Recruiting, managing & coaching people
- Communication, negotiation & conflict management
 - Self-awareness & management
 - Stakeholder values & perceptions
 - Cultural & historical appreciation

Overarching

- Multiple-use management
 - Forces driving change
- Property, catchment & regional planning
- Systems/holistic management
- Basic field/bush skills



Alignment of existing educational programs with needs

... based on content & delivery

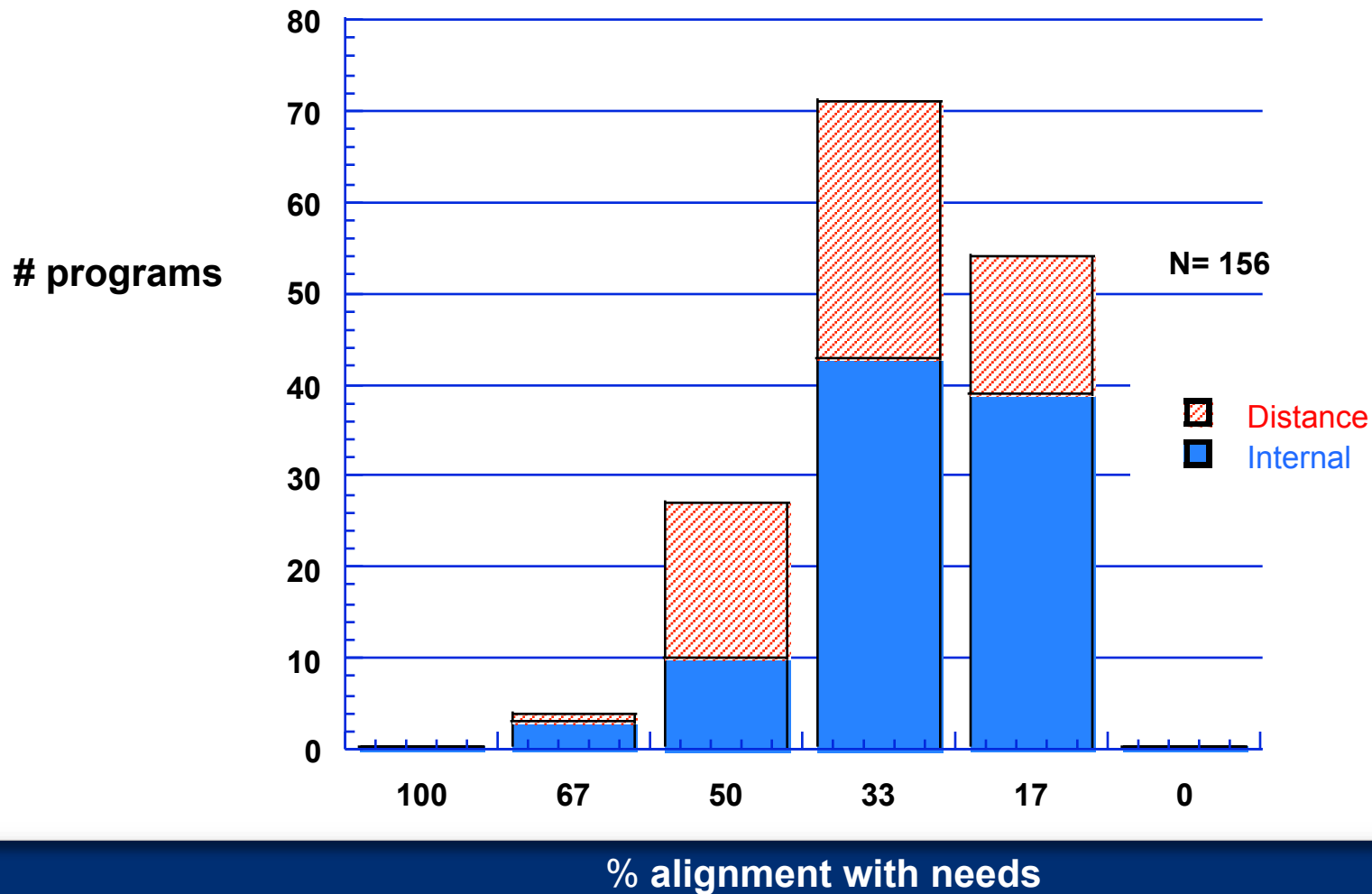


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Alignment of Australian Undergraduate programs* with Needs

*agriculture & environmental studies only



Focus on Graduate Coursework

- Because ...
 - Weak alignment of undergraduate programs & oversupply
 - Diversity of previous educational experience of target group
 - Specialized nature of the program
 - Not training scientists – providing learning for relevance to everyday practice



Market for Learning in Australia's Rangelands

- Research commissioned by Rangelands Australia and conducted by Quay Connection in 2002-03
- Based on a national telephone survey of 1400, 16-64 year olds living in the rangelands
- Defined and profiled 6 market segments on attitude to learning



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Market Research

Outputs

- Segmentation of the market, profile of key segments ... 'Passionate learners', 'Job-driven' & 'Gunna'
- Understanding of the 'Barriers to Learning', Learner preferences and expectations

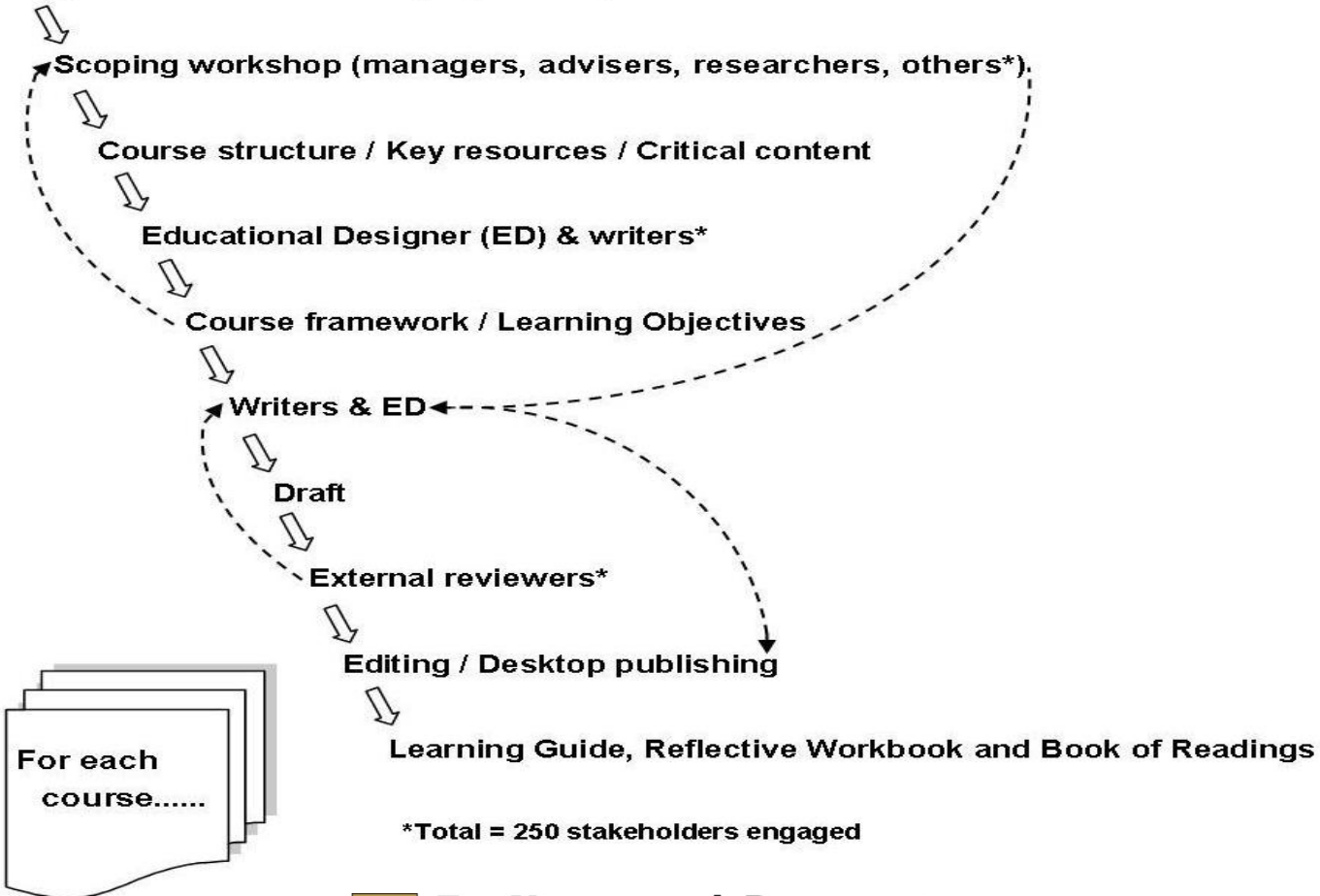
Influenced

- Learning materials - 'e' and 'hard' copy, readings
- Learning activities – authentic, 'real world'
- Delivery – flexible in time and location
- Marketing ... brochure, media, events ...



Course Development Process

Outputs of the Focus Groups (collated)



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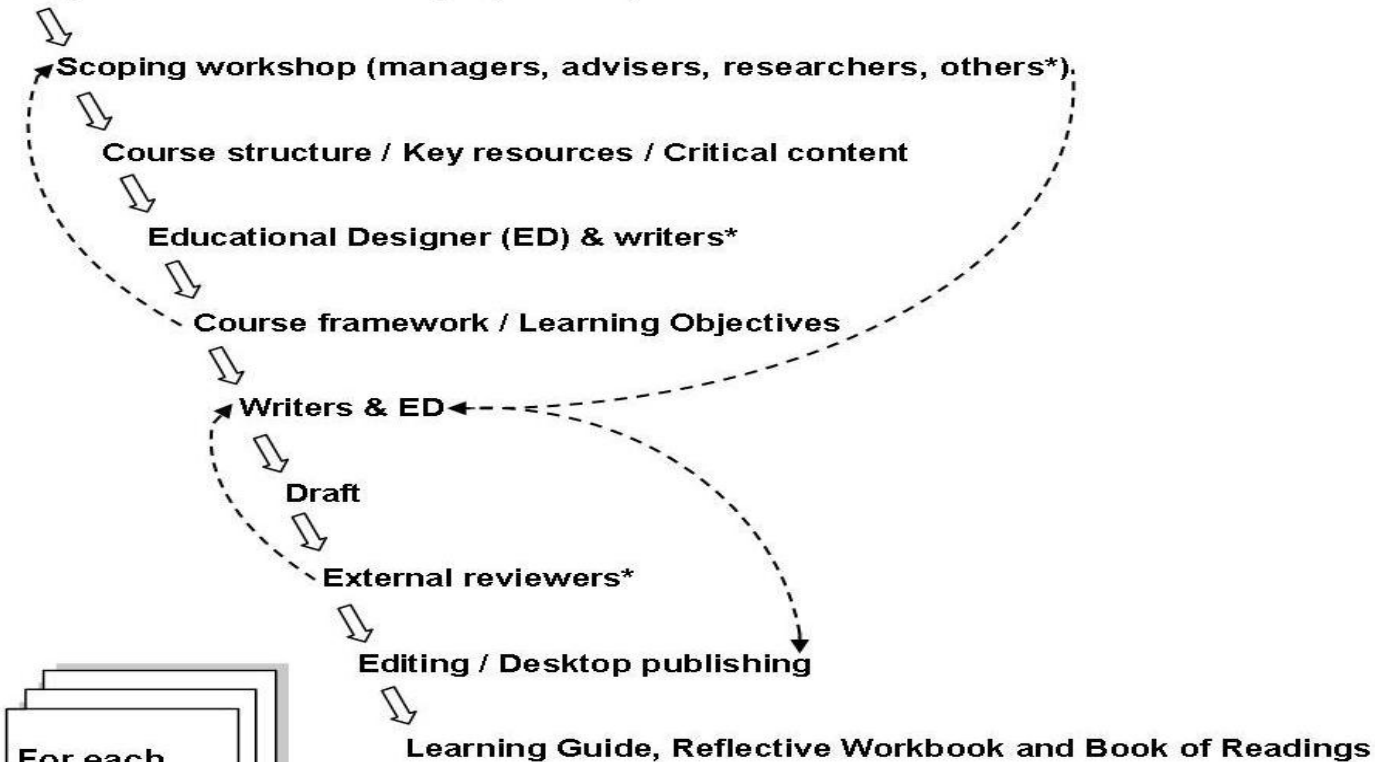
Why an Educational Designer ?

- Recognized the need for educational expertise ... dealing with multiple perspectives, team of writers, non-educational expertise
- Address learning objectives, need for relevance and authentic learning activities and assessment
- Delivery options suitable for a range of needs and to foster interaction and networking
- Integrate and implement feedback, and ‘close the loop’



Course Development Process

Outputs of the Focus Groups (collated)



*Total = 250 stakeholders engaged



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Outputs of Processes

Over the past 7 years ...

- Unique Graduate Coursework program for Professional Development in range science & mgmt
- 12 new range-specific, inter-disciplinary courses
- Blended learning environments
- Flexible delivery IN the rangelands
- Learning networks and community



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Graduate Coursework Program in Rangeland Management



Core/compulsory courses

- ② Sustainable production systems and regions
- ② Building effective stakeholder engagements
- ② Global and national trends, local scenarios



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Rangeland Management Program_(cont'd)

Electives

- Grazing land management
- Advanced rangeland ecology
- Rangeland pest animals, weeds and biosecurity
- Property, catchment and regional planning
- Rangeland monitoring and adaptive management



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Rangeland Management Program (cont'd)

Electives (cont'd)

- Animal welfare and health
- Animal nutrition and behaviour
- Managing self, developing and retaining others
- Diversification and new business opportunities
- Reading the rangelands – stakeholder perspectives



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Blended Learning Environment

- Learning Facilitators NOT Lecturers
- Learning Management Systems - Blackboard
- Virtual classrooms- Wimba/Adobe Connect
- Tele/web-conferences and presentations
- Situated and authentic learning environments
- Intensive courses – face-to-face + online



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Flexible Delivery

Two modes to suit Learner preferences:

1. External/distance – Study at home over a 12-14 week semester



2. Intensive - Study at a remote rangeland location. Pre-reading, 5 day workshop, finish assignments at home



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Student Feedback

Course evaluations (average & range of scores - max 5.0)

- | | |
|--|---------------|
| ◦ New skills and knowledge gained | 4.8 (4.3-5.0) |
| ◦ Learning & assessment challenged me to think | 4.7 (4.3-5.0) |
| ◦ Satisfaction with course content | 4.5 (4.3-4.8) |
| ◦ Relevance to my work/business | 4.9 (4.6-5.0) |
| ◦ Relevance to my future in the rangelands | 4.8 (4.6-5.0) |
| ◦ Overall satisfaction | 4.7 (4.5-4.8) |

Strengths

- “Relevance to rangeland systems across Australia”
- “Theory well grounded in practical field work”
- “Excellent course materials”
- “Interactions with the Learning facilitator & other students”
- “Challenge of the learning activities & assessments”



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QA and Continuous Improvement

- Evaluations at all stages of the process
- Ongoing evaluations – courses & program
- Feedback on courses includes ‘closing the loop’
- Informed feedback from all stakeholders
- Informal feedback - role of Champions



Overall Outcomes

- Participation and Demographics
- Educational outcomes
 - Individual
 - Enterprise
 - Regional
- External recognition



Participation and Demographics

- Strong growth to 100+ students, 54 graduates
- 41% owner/managers of pastoral or mine-related enterprises – directly influence 2+% Aust
- 53% regional NRM/Landcare facilitators, extension agency staff, pastoral inspectors, training instructors, etc. – indirectly influence 45% Aust
- 65% women/35% men ... all have a ‘day job’
- 10% Aboriginal people
- Age range 21-67 (most 30-50’s)



Educational outcomes - Individual

- Better understanding of the critical issues facing enterprises & regions
- Greater capacity to represent rangeland interests & advocate for enterprise and regional outcomes
- Willingness to consider other points of view & greater confidence in dealing with other stakeholders
- Expanded networks and greater thirst for knowledge



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Educational outcomes - Enterprise

- More strategic & proactive, greater consideration of wider & long-term implications of decisions
- Better decision making, trade-offs & risk management
- Improved understanding of rangeland functioning and 'best practice' management
- Greater capacity for innovation/ managing change
- Enhanced land condition, biodiversity & water quality



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Educational outcomes - Regional

- Stronger industry & community leadership
... more strategic, proactive
- Greater capacity for articulation & advocacy of regional issues
- Greater confidence & credibility to engage in NRM & influence local & regional decisions
- Greater capacity in Landcare and NRM groups
- Changing perceptions of University education



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External Recognition

“Most valuable needs analysis in Australia”

(Australian Government’s FarmBis, 2005)

***“.. a highly strategic knowledge and skill development initiative ...
that’s expanded effective educational opportunities “***

(2009 Australian Rural Education Award)

***“A strategic and systematic educational initiative ... high quality,
challenging, practical and relevant learning ... transforming access,
participation & representation of under-represented groups”***

(2010 UQ Award for Programs that Enhance Learning)

***“Outstanding contribution to the quality of student learning and the
quality of the student experience of higher education ...
... a benchmark for others”***

(2011 Australian Learning & Teaching Council Award for Programs that Enhance Learning)



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Lessons and Challenges

- **Lessons**
 - Value of the participatory approach – diversity, multiple perspectives, shared and co-learning
 - Different understanding of ‘engagement’, ‘participation’
 - Value of networks, social learning & learning communities
 - Value of student-focused approach re attraction & retention of students



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Lessons and Challenges

- **Challenges**

- **Confronts traditional hierarchies & relationships**
- **Development of multi/trans-disciplinary courses**
- **Disciplinary arrogance & maintaining relevance to 'management' in research-intensive institutions**
- **Flexibility - Tension between student-centered and institutional-centric approaches to education**
- **Wider use constrained by Institutional processes & reward systems**



Nationally and Internationally recognized Model of Innovative and Effective Education

The Road Ahead

- Revisiting the Needs
 - Because of the networks and relationships, different approach – ‘e’ survey
- Maintaining responsiveness to provide Flexibility, Currency and Relevance



Australian Government
Department of Agriculture,
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