

Appendices

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Appendix 1 Draft survey instrument

Socio-Economic survey towards Healthy Country South-East Queensland

Introduction

This survey collects information about the opinions of owners or managers of properties in some parts of south-east Queensland about ways in which land and waterways are managed for agricultural production and for enjoyment, and to maintain a healthy environment. The results of the survey will be used by agencies and organisations aiming to provide targeted services to landowners to improve the sustainability of their land and water management and primary production systems.

NOTE: 1. There could be a box on this page offering a Reward if you wish to do so. (Perhaps a small publications from DPI&F or NRW or SEQC or... e.g. weed ID key, or how to become energy independent ...or perhaps offer a free property advisory visit on an issue raisedetc for any one who completes and returns within e.g. 21 days.)

2. The introduction above can be customised as you wish (e.g. names of agencies/organisations could be given here or in the introductory letter.)

3. The catchments (Qs 1.1 and 1.2 plus the intro above that) will need adjustment if the survey is to be used elsewhere. (If to apply regionally, think about the size of catchments you want to go down to before starting the exercise.)

1 About your property

For this survey, we are interested in properties within the Lockyer, Bremer and Logan/Albert catchments in South-East Queensland. Please answer the following questions for land that you own or manage within those catchments.

1.1 What is the total amount of land that you own or manage in the Lockyer, Bremer or Logan/Albert catchments?hectares or acres
(From now on, this will be referred to as your property)

1.2 In which of the following water catchment areas is your property located?
(Tick the box. If you have property in more than one locality, indicate for the main or home property only).

Lockyer Ck	<input type="checkbox"/>		Franklin Vale Ck	<input type="checkbox"/>		Teviot Brook	<input type="checkbox"/>
Stockyard Ck	<input type="checkbox"/>		Bremer R	<input type="checkbox"/>		Logan R	<input type="checkbox"/>
Tenthill Ck	<input type="checkbox"/>		Reynolds Ck	<input type="checkbox"/>		Sandy Ck to Logan R	<input type="checkbox"/>
Laidley Ck	<input type="checkbox"/>		Warrill Ck	<input type="checkbox"/>		Albert R	<input type="checkbox"/>
Woolshed Ck	<input type="checkbox"/>		Purga Ck	<input type="checkbox"/>		Canungra Ck	<input type="checkbox"/>

1.3 Do you have a watercourse running through your property or along its boundary?
(Tick a box)

Yes No

1.3.1 If you answered yes, are the banks of the watercourse on your property mainly under grass or mainly growing trees?

All or nearly all trees More trees than grass More grass than trees

1.4 We are interested in how much of your land falls into each of the categories listed below. Please estimate the rough percentage of each type (these should add to 100 or within five percent on either side)

Land type (slope and use)	Percentage of property
Flat land under crops or sown pasture	
Flat land cleared but not cultivated	
Flat land under natural vegetation	
Sloping land under crops or sown pasture	
Sloping land used for grazing	
Sloping land under natural vegetation (not grazed)	
Other (specify; e.g. wetland)	

1.5 What water is available for your property (for all purposes)?

(Tick those that apply)

Tank(s)	<input type="checkbox"/>	Stock or house water from stream	<input type="checkbox"/>
Farm dam(s)	<input type="checkbox"/>	Stream water irrigation allocation	<input type="checkbox"/>
Farm bore(s)	<input type="checkbox"/>	Reticulated town or rural supply	<input type="checkbox"/>

1.6 Which of the following land uses occur on your property?

(Tick each one that applies to your property).

Beef cattle	<input type="checkbox"/>	Native bush and or grasses not harvested	<input type="checkbox"/>
Dairying	<input type="checkbox"/>	Native vegetation managed for harvest	<input type="checkbox"/>
Intensive livestock (e.g. poultry, pigs)	<input type="checkbox"/>	Farm forestry	<input type="checkbox"/>
Horses	<input type="checkbox"/>	Other tree plantings (e.g. for revegetation)	<input type="checkbox"/>
Other livestock	<input type="checkbox"/>	Dryland pasture	<input type="checkbox"/>
Broadacre cropping	<input type="checkbox"/>	Irrigated pasture	<input type="checkbox"/>
Irrigated cropping	<input type="checkbox"/>	Eco-tourism, farm stay, other recreation	<input type="checkbox"/>
Horticulture (including orchards)	<input type="checkbox"/>	Rural living	<input type="checkbox"/>
Please don't forget the second column ►		Other (specify)	<input type="checkbox"/>

1.6.1 Which one of the land uses you have identified in 1.6 above best describes the primary purpose of your property? (Place a second tick next to the one you have made for that selected land use)

1.6.2 Do you live on the property as your main place of residence?

Yes No

1.7 To what extent are the following issues a problem on your property?

(Tick appropriate boxes)

	No problem	Small problem	Moderate problem	Major problem	Don't know
Land Management Issues					
Maintaining ground cover in grazed paddocks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Declining soil health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil compaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil acidity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soil erosion / gullies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eroding stream banks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land slip or mass movement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salinity (dryland or secondary irrigat'n)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk of fire	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Water Management Issues					
Waterlogging	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor water quality from bores	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor water quality in dams	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor water quality from other irrigation sources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Insufficient irrigation supply	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Unreliability of irrigation allocation or source	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Biodiversity Issues					
Animal pests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weeds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decline in native animals or birds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of trees for shade/shelter for stock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loss of fish habitat and/or fish stocks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Adjacent Land Uses					
Constraints on primary production due to proximity of neighbouring houses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Impacts from poor land and pest management by neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Smells or noise from neighbour's farming /or other business practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1.7.1 Which three issues do you consider to be the most important for your property?

(Place a second tick next to three boxes that you have already ticked above)

1.8 Please identify to what extent the following practices have been used/installed on your property. (Tick the appropriate box)

* N/A = Not applicable to my management of the property

	N/A	No (Not used)	Yes – Partly (or some of the time)	Yes - Completely (or regularly)
Property general				
Have you developed an effective property management plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you monitor soil health?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you monitor water quality in streams, dams or bores?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are your waterways/ wetlands fenced to control stock access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you planted trees for farm forestry or yield improvement?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you planted trees or shrubs for re-vegetation or habitat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Is native bush fenced to control stock access?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grazing				
Do you manage your grazing according to land type?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you carry out rotational grazing?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Are off-stream stock watering points installed?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you manage your stock to make best use of perennial, productive and palatable species?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your dairy effluent management meet industry guidelines?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cropping and Horticulture				
Have you identified the different soil types on your property?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you carry out regular soil tests?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you tailor nutrient applications to different soil types?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you use soil or plant analysis to help work out post-planting fertiliser requirements?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Does your fallow management include a cover crop, legume or pasture rotation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you use minimum / reduced tillage cropping practices?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you installed earthworks for soil conservation (e.g. contour banks, sediment traps)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Irrigation Management				
Do you monitor soil moisture to determine crop requirements and irrigation scheduling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you installed low pressure overhead or solid set irrigation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you apply drip irrigation (or fertigation)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you monitor water use and/or do any calculations of water use efficiency?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. About your experience and views on managing your land

2.1 For how many years have you

a) owned or managed this property?

b) lived in the district where your property is located?

2.2 Who makes decisions on your property (a) for routine matters (e.g. weed control); (b) for major purchases; and (c) for long-term plans. (Tick the appropriate box for each)

	Yourself	Spouse	Self and spouse	Other family	Business partner(s)	Other owner or manager
a) Routine	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Large purchases	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Long-term plans	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.3 Please indicate how likely each of the following options are for long term plans for your property

(For each option, tick one of: highly likely, likely, not sure, unlikely, highly unlikely).

	Highly unlikely	Unlikely	Not sure	Likely	Highly likely
Retain ownership but employ a manager	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sell the property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pass the property on to family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Expand by purchasing or leasing more land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lease out all or part.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Donate all or part to charitable causes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Intensify current enterprises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Diversify production	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Subdivide and sell part	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Enjoy it for the rest of my life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Revegetate 10% of your property	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.4 Please rate the importance to you of each of the following reasons for owning or managing your property. (Tick the appropriate box for each statement)

▶ IMPORTANCE ▼	None	Minor	Moderate	Major	Extreme
Value in owning the property ▼	0 →→→→	1 →→→→	2 →→→→	3 →→→→	4 →→→→
An asset that will help fund my retirement.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide most of our household income.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide habitat for native animals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Able to be part of a rural community	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provide the lifestyle that I/we want	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A place for recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The freedom of working for myself.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Property work is a break from my normal occupation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This is a great place to raise a family.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pass the property on to family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A sound long-term economic investment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunity to manage a business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improve environmental health of the district	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live in a natural or rural environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increase net income	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A slower paced, quieter life than the city	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feeling of attachment to the land	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Live in a clean, healthy environment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accomplishment from producing food/fibre	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sense of accomplishment from building/maintaining a viable business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Build a business that employs family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced living costs – simpler life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restore the natural landscape	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ability to produce a niche product.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.4.1 If a watercourse runs through or alongside your property or you have a wetland, please rate the importance to you of each of the following features of this.

(If you do not have a watercourse or wetland, then move on to Question 2.4).

IMPORTANCE ► Property Features ▼	<i>Not possible for my property</i>	Low or nil	Some	Moderate	High
	0	1	2	3	4
		→→→	→→→	→→→	→→→
A place for recreation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A place for native animals to live	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to water for stock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shade and shelter for stock	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A corridor for birds and animals to move from place to place	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Additional land for grazing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
As a habitat for fish and other water life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.5. What are the main things that hold you back from making changes that you would like, such as structural improvements or changed land management practices?

(Please tick the following ‘constraints’ that you consider get in the way of making changes to managing the property. If you are happy with how it is, please note that under ‘other’)

Availability of bore water	<input type="checkbox"/>		Getting accurate information about practices	<input type="checkbox"/>
Availability of surface water	<input type="checkbox"/>		Lack of support by family or partner	<input type="checkbox"/>
Variable climate / Drought	<input type="checkbox"/>		Funds needed / Cash flow	<input type="checkbox"/>
Property too small	<input type="checkbox"/>		Time needed to learn about practices	<input type="checkbox"/>
Need to change fence layout	<input type="checkbox"/>		Time needed to introduce practices	<input type="checkbox"/>
Uncertainty the new practices will be successful	<input type="checkbox"/>		Availability of skilled labour to implement practices	<input type="checkbox"/>
New practices are more complicated and difficult to manage	<input type="checkbox"/>		Stage of life	<input type="checkbox"/>
Price of land	<input type="checkbox"/>		Market threat from imported foods	<input type="checkbox"/>
Cost of fuel, fertiliser or services	<input type="checkbox"/>		Delayed returns from a new practice	<input type="checkbox"/>
Cost of machinery / equipment	<input type="checkbox"/>		Changing practices is too risky	<input type="checkbox"/>
Cautious about accepting government offers of money.	<input type="checkbox"/>		Lack of market incentives for improved practices.	<input type="checkbox"/>
Conflicting advice / requirements from government agencies	<input type="checkbox"/>		Other	<input type="checkbox"/>

2.5.1 Which three constraints do you consider to be the most significant?

(Place a second tick next to three boxes that you have already ticked above)

2.5.2 Are there any CHANGES over the next few years that may deter you from investing in property improvements? If so, what are these expected changes?

.....

2.6 Please indicate whether you agree or disagree with the following statements using the rating scale SD *strongly disagree*, D *disagree*, U *unsure*, A *agree*, SA *strongly agree*.

N/A* = Not applicable

	N/A*	SD	D	U	A	SA
Native vegetation adds dollar value to the property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Native vegetation makes it harder to manage weeds and pests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The native vegetation on my property is of more benefit than what could be produced if it were cleared.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grasses are as effective as trees at stabilising river / creek banks.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fencing vegetated areas or watercourses makes it harder to manage these areas for fire, weeds and animal pests.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The costs of fencing waterways are outweighed by the benefits to stock and water condition.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Increased herbicide use with reduced tillage is better than mechanical cultivation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The cost of changing irrigation practices outweighs water savings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landholders should link with aboriginal communities to identify and manage culturally significant sites on private property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Actions on my property can make a difference to the environmental health of the district.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landholders should be paid for managing resources in ways that benefit the rest of the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My neighbours try to ensure that their actions do not impact on my property.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some resource issues around here will only improve if neighbours join forces and work together.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am confident that what I do on my property now will not reduce its future capability.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Some natural resource management problems here are not fixable any more.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Revegetating upper slopes would achieve little benefit to farming or the environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A grassed creek bed is better than one with logs and bushes in it.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Vegetation alongside waterways acts as a filter for sediment and excess nutrients.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In most places, fencing watercourses is not practical because floods will damage fences.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fencing out watercourses will reduce the area for cropping or grazing.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.8 To what extent do you consider each of the following to be a problem in your shire or local community area? (Tick appropriate boxes)

	Don't know	Small or no problem	Moderate problem	Major problem
Lack of skilled farm labour	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of native animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of employment opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decline in soil health	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decline in water quality	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Decline of native vegetation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Denuded hillslopes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of appropriate housing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Declining stream flows	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inefficient use of water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Salinity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Weed and pest control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Management of waterways	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fire risk management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ageing population	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to essential services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to property advisory services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Threats to right to farm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regulations about subdivision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Lack of awareness of cultural sites	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Priorities for water allocation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Staff turnover in agencies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Loss of local voice in state politics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Access to government held information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.8.1 Which three of these do you consider to be the most important issues for the district? (Place a second tick next to three boxes that you have already ticked above)





Getting bored? ... please hang in there – the rest of the questions are vital to our successful use of your responses

2.9 If government offered to provide funding support for landholders to adopt certain practices that protect or improve the land, how interested would you be in each of the following ways of receiving funding support? (Tick the appropriate box for each).

	Low interest	Moderate interest	High interest
Tax rebate through Commonwealth Government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local government rate relief for specific environmental works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Grants or subsidies for on-ground works	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Provision of external labour for on-ground work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Stewardship payment for on-going management	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free or subsidised professional consultation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Free or subsidised training/workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other :	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.10 What are the main sources of information and/or advice that you use to help you make decisions about the management of your property?

(Please tick the main sources that you use).

	USE			USE
Newspapers	<input type="checkbox"/>		Rural business agents (e.g. Elders)	<input type="checkbox"/>
TV	<input type="checkbox"/>		Private consultants	<input type="checkbox"/>
Radio	<input type="checkbox"/>		Financial institutions	<input type="checkbox"/>
Internet	<input type="checkbox"/>		Industry organisation (e.g. Agforce)	<input type="checkbox"/>
Books/magazines	<input type="checkbox"/>		Produce merchants	<input type="checkbox"/>
Leaflets/newsletters	<input type="checkbox"/>		Buyers of your product	<input type="checkbox"/>
Government factsheets	<input type="checkbox"/>		Training courses	<input type="checkbox"/>
Government phone hotlines	<input type="checkbox"/>		Universities	<input type="checkbox"/>
State government officers DPI&F	<input type="checkbox"/>		Family members	<input type="checkbox"/>
State government officers NRW	<input type="checkbox"/>		Neighbours	<input type="checkbox"/>
Local government officers	<input type="checkbox"/>		An expert farmer friend or mentor	<input type="checkbox"/>
SEQ Catchments staff	<input type="checkbox"/>		Property planning workshops	<input type="checkbox"/>
Landcare or catchment groups	<input type="checkbox"/>		Producer discussion groups	<input type="checkbox"/>
Other environmental groups.	<input type="checkbox"/>		Accountant	<input type="checkbox"/>
Best practice program	<input type="checkbox"/>		Other ...	<input type="checkbox"/>
Please don't forget the second column 				

2.10.1 Which three of these do you consider to be the most useful sources of information about managing your property? (Place a second tick next to three boxes you have already ticked)

2.11 Please indicate how interested you might be in each of the following ways of gaining extra knowledge about managing the resources on your property.

(Tick the appropriate boxes)

	Low interest	Moderate interest	High interest
Meeting and talking with others who have dealt with similar issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attending field days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Demonstration sites that trial new ideas or practices	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Contacting government staff for advice and/or information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attending training courses	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Group activities eg Landcare group or planning workshops	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Visiting other properties to see what other landholders are doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Involvement in research projects	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Others (specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2.12 Please indicate the level of involvement with the following community groups by yourself or another member of the household.

Circle the letters S (= self), or O (= other member of the household), (or both S and O) in the appropriate boxes to indicate level of participation in the group. If not at all involved, leave the row blank.

Community group	Rarely <i>(Once a year or less)</i>	Occasionally <i>(A few times a year)</i>	Regularly <i>(Every month or two)</i>	Frequently <i>(Weekly or fortnightly)</i>
School/education committee	S O	S O	S O	S O
Sporting groups/club	S O	S O	S O	S O
Civic / Service group (eg Lions)	S O	S O	S O	S O
A Church group	S O	S O	S O	S O
Emergency services (e.g. SES, Fire)	S O	S O	S O	S O
Landcare or catchment group	S O	S O	S O	S O
Environmental group	S O	S O	S O	S O
Recreation group	S O	S O	S O	S O
Community development association	S O	S O	S O	S O
An industry or business group (e.g. professional association; Agforce)	S O	S O	S O	S O
Other (specify)	S O	S O	S O	S O

2.12.1 Where are most of these community groups located (name one town or centre)?

.....

2.12.2.If you (or spouse) are involved in one or more business-related formal groups (e.g. an industry body or professional association), please name the organisation(s) you (or spouse) belong to.

.....

2.13 How much do you trust the following people or groups? (Tick the box appropriate boxes)

	Low trust	Moderate trust	High trust	Don't know
My neighbours	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industry organisations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Landcare or catchment groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
South-East Queensland Catchments (SEQC) staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State government officers, DPI&F*	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
State government officers, NRW**	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local government officers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Local government councillors	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SEQ Healthy Waterways Partnership***	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* DPI&F = Department of Primary Industries and Fisheries, Qld.

** NRW = Department of Natural Resources and Water, Qld

*** SEQ Healthy Waterways Partnership =



3. Finally, about you

We appreciate that people are usually reluctant to divulge personal information or data about incomes. However some information about broad categories is important for analysis of the survey. This information will remain confidential - your name will not be linked to any of the answers in this survey.

3.1 Please indicate the age category you belong to.

18-24 25-34 35-44 45-54 55-64 65-74 75 and over.

3.2 Which of the following best describes your main occupation?

(Tick the most appropriate box)

Farmer/grazier Clerical/admin/management Professional Trades
Home duties Ecotourism Retail Retired Other

3.3 Which of the following best describes your average level of paid off-property work over the past 12 months?

- None Part-time or Casual Full-time

3.4 If your main occupation was other than Farmer, estimate the average number of hours per week that you plus any non-farmer partners worked on property related activities during the past year.

.....

3.5 Are you male or female? Male Female

3.6 What is your highest level of formal education?

- Primary school
 Secondary school
 TAFE, technical or agricultural college
 Part or all of a degree course at a University
 Other, Please specify

3.7 Roughly what percentage of your total household income is derived from your property? (*Tick the appropriate box*)

- less than 10% 10-30% 30-50% 50-70% 70-90% more than 90%

3.8 Which category below best indicates the amount of income derived from your property? (i.e. the amount on which you pay income tax)

- Net loss < \$20 000 \$20 000-60 000 \$60 000-100 000 more than \$100 000

3.9 What is your approximate current level of equity in the property?

(i.e. if you sold your property and stock at a fair price now, what per cent of the total sales price after all debts had been paid would you be able to retain?)

- More than 90% — farm currently debt free or almost so
 70% to 89%
 50% to 69%
 Less than 50%

Other Comments

Are there any other suggestions about ways landholders could be assisted to improve land management or how barriers you are facing can be removed?

THANK YOU FOR YOUR TIME AND VALUED RESPONSES

We appreciate the time you have spent answering the questions. Please return the survey in the envelope provided. A summary of findings will be available within months and will be mailed to all who respond to the survey. If you have further enquiries about what the survey is for or require assistance with it, please contact

.....

Appendix 2 Notes on references

This Appendix provides more detailed notes on each of the papers reviewed. The papers in order are:

1. Rickson S, Warburton J and Keith K (2006) *Linking the social with the environmental: Identifying community capacity in the SEQ WCG region*. Report prepared for the Innovations Fund for Social Science in Natural Resource Management in partnership with SEQ Western Catchments.
2. Low Choy D, Sutherland C, Scott S, Polley K, Gleeson B, Dodson J and Sipe N (2007) *Change and continuity in peri-urban Australia. Peri-urban case study: South-East Queensland*. Griffith University, Nathan. Monograph 3 November 2007.
3. McKenzie J, Whelan J and Oliver P (2006). *Reconnecting Fragmented landscapes: a scoping study on Natural Resource and Environmental Management in the peri-urban landscapes of south east Queensland*. Brisbane: South East Queensland Catchments and the Queensland Department of Natural Resources and Water.
4. Thomson D and Pepperdine S (2003) *Assessing community capacity for riparian restoration*. Report for Land and Water Australia, National Riparian Lands R&D Program (Product no: PR030553) ISBN 1-92086005
5. Darbas T, Smith T and Hall C (2007) *Case Studies of Community Engagement: Enhancing Community Engagement for NRM in the SEQ Western Catchment*. Report prepared as part of the AG-SIP 18 project: Effective Engagement for NRM in the SEQ Western Catchments, September 2007.

Additional papers were examined and were used in the report, but detailed notes are not provided, as these papers were not required as part of the brief.

[1] Rickson S, Warburton J, and Keith K (2006) Linking the social with the environmental: Identifying community capacity in the SEQ WCG region. Report prepared for the Innovations Fund for Social Science in Natural Resource Management in partnership with SEQ Western Catchments.

Aim and background

This research study explored the relationship between participation, social capital and stakeholder partnerships in achieving NRM objectives. It drew on both social capital theory and sense of place theory. It was designed to explore local community-based solutions to environmental problems.

This project was part of a broader suite of projects exploring the importance of social science in natural resource management (NRM). Specifically this project grapples with the task of forming effective multi stakeholder partnerships to achieve the aspirations of long-term plans for natural resource management.

This research had three stated aims. Firstly to map the capacity of stakeholder groups within a case study areas; secondly to explore the social networks, or linkages between different stakeholder groups, and their impact on local community capacity; and thirdly to explore ways to address potential impediments to the development of trust and collective action.

Location

The three case study sites in the Bremer Catchment represented rural, urban and peri-urban communities. The rural community was a strip running about 20 km along Warrill Creek, encompassing townships of Warrill View, Harrisville and Kalbar. The peri-urban area stretched from Purga to Peak Crossing. A group of contiguous suburbs in the south-west of

Ipswich was the urban area; including Leichhardt, One Mile, Raceview, Flinders View and Churchill.

Methods

This research was qualitative, which has the benefit of providing rich data and exploring the depth of meaning. Three key methods were used, including (1) ‘key informer’ interviews (to determine key local environmental issues and issues around the capacity of the local communities to respond), and (2) workshops in each of the three study communities (to identify critical local NRM issues and their impacts within the community, as well as linkages across networks within the relevant social and spatial contexts), and (3) personal / telephone interviews.

No survey instrument was used in this research, and no generalisation of the data is possible to other locations. However, a comparison of future surveys with data for these specific sites could be useful.

The key value of the report is in the inferences drawn about social networks and the community characteristics needed to enhance collection action.

Literature review

The literature on social capital, networks of cooperation and trust, resources for networks of action, and sense of place are briefly reviewed in this report:

- Social capital is the way in which social networks of a community operate (pp.15-16)
- Policy makers and practitioners need to support processes that encourage local participation (see section on Networks p.17)
- Social and financial resources to support partnerships and networks were critical (see section on Resources p.17)
- Sense of place is seen as more important than kinship ties in building social capital (see section on Spatial dimensions pp.17-19).

Results: data and learnings

Data was collected within the case study areas about the values of the people, impediments to changing NRM practices, and social capital including social networks. As explained in the main body of our review, the data that describes the social characteristics of and engagement strategies for specific communities is related to the case study sites and cannot be generalised to the whole of the SEQ region.

A brief historical overview and basic demographic data of each case is provided, before more detailed descriptions from the perspectives of people in urban, peri-urban and rural communities. The data includes:

- Issues seen as important by rural, peri-urban and urban communities
- Barriers to progress on NRM; particularly impediments to collective action
- Social capacity within the case study sites; including linkages between groups.
- Some of the issues were different between rural and peri-urban areas, for example water availability is of very high importance in the rural area; still significant but lesser concern in the peri-urban area. Water quality and flooding were important in the urban area.
- Learnings about collaboration, partnerships and collective action

The focus of this report is on how to build collaboration and collective action for NRM. While the focus of the Healthy Country Project is water quality and riparian restoration, it

is important to remember that strong social networks and trust between all stakeholders is critical for achieving NRM outcomes, such as improved water quality.

The learnings from this project about collaboration and the impact of social capital are broadly applicable in terms of participation and action related to agriculture and NRM programs. The research focused on the relationship between these factors, participation and the formation of stakeholder partnerships in achieving NRM objectives was explored. The summary about the various aspects key concepts are set out in the tables in Section 5.2 “Conceptual analysis of data” (pp.80-87). This table summarises findings from the study under key concepts social capital (e.g. trust); governance (e.g. leadership); communication strategies (e.g. awareness raising); and concepts relating to sense of place.

In summary, the key learnings about social capital, governance and communication are:

- *cooperation and networks*: there are more connections between organisations in rural areas than urban but often the connections are stagnant (non-productive) (see detail on page 80);
- *trust*: little trust with state government over NRM and caution when government offers money, as well as lack of rural-urban trust and even trust that other groups within the community will be able to carry out commitments (see detail on page 81);
- *leadership*: this is left to a very few who then lead too many things, with few young people moving into leadership roles (see detail on page 82);
- *power*: rural people feel they have lost their political voice and suffer the consequences of urban misconceptions (see detail on page 82);
- *resources*: landholders are reluctant to start something if prospects of ongoing support are poor (see detail on page 83);
- *communication and awareness*: information channels vary between the different communities, there is lack of awareness about useful information that is available, and there is little awareness of SEQWCG or its potential to assist with information (see detail on page 84).

Key learnings

The results about links between the participation, partnership and social capital will help to inform decision-makers and communities about how to develop effective engagement strategies. Guidelines for both community and Western Catchment group staff are presented (see detail in Appendix 8.3).

Some of the key findings include:

- Considerable discrepancy was evident between the government’s perception of its commitment to community engagement and the judgment of performance of this in all three communities. This needs attention by state and local governments and the regional bodies.
- There is a continuing reluctance, even within new institutions such as the NRM regional bodies, to grasp and apply the concept of equal partnership – a certain amount of over-lording persists even where participative processes are promulgated.
- Trust in government is low, to the extent that it is almost seen as futile to try to influence natural resource management directions. Such key issues that limit adoption of NRM practices are within government.
- Thus, only looking at the values and attributes of landholders and designing strategies to engage with and impart knowledge to landholders is not sufficient. There must not be an assumption that it is the landholders who need to change.

- Knowledge of the roles of local and state government is low in peri-urban and urban areas; and that changes in government approaches to support have been either not recognised or not adopted.
- A key factor in this has been the withdrawal of traditional extension services by state government and the inability of both local government and regional natural resource management bodies to provide equivalent professional experience and on-ground knowledge.
- The loss of historical professional and technical know-how is exacerbated by the high turn-over of staff expected to fill this gap in the new regional bodies.

Some partial solutions to these institutional barriers are offered through the development of programs to retain professionally competent and community-aware staff, and by allowing them to offer effective on-ground support for landholders.

One partial solution offered in Appendix 8.3 Learnings and Guidelines is for the regional body (now SEQ Catchments) to enable staff to persist in providing effective on-ground support that produces results, and so restores confidence that support to achieve practical outcomes is indeed available. For this to happen, SEQ Catchments (and other regional bodies) need to be able to retain professionally competent and community-aware staff. To do this it is imperative for state and federal governments to provide certainty in terms of assuring long-term support for the regional NRM governance.

In summary this report is useful in two ways. The detailed data about the case study areas could be compared to the findings from other areas in South East Queensland. Additionally, inferences were drawn about the links between various aspects of social capital and governance with participation and engagement. These are important for policy makers and community groups in the development of participatory activities, information strategies and engagement approaches. These are definitely worth considering within the context of the Healthy Country Project.

- [2] **D. Low Choy, Sutherland C, Scott S, Polley K, Gleeson B, Dodson J and Sipe N (2007) Change and continuity in peri-urban Australia. Peri-urban case study: South-East Queensland. Griffith University, Nathan. Monograph 3 November 2007.**

This research report provides excellent data about a specific case study in the extended Western Corridor to the west of Brisbane, including Ipswich city and the Shires of Esk, Laidley and Gatton. It analyses spatial, land use, environmental, social and economic trends, describes and evaluates governance, institutional, policy and management arrangements as well as examining the implications for future land use and land management in this area.

Methods and definition of peri-urban

The study used empirical data from a number of different sources; including government agencies listed in the Preface (2007: ii). No survey instrument was used. This research acknowledges a number of data deficiencies (2007: 5-13).

Peri-urban regions are defined as those areas on the urban periphery into which cities expanded or which cities influenced. Peri-urban use activities exhibit a high degree of heterogeneity, continual change and conflicting values (Low Choy *et al.* 2007: xvii).

Results

Major findings about peri-urban case study areas are summarised in the Executive summary:

- (1) socio-economic aspects e.g. strong population growth in the 1980-1990s;
- (2) land use aspects e.g. rural residential and primary production dominate;
- (3) agriculture e.g. very diverse with lifestyle horticulture one of the fastest growing;
- (4) biophysical threats e.g. remnant vegetation under threat because of lifestyles.

Continuing development in the area does pose significant NRM risks (2007:80). Some of the land management challenges identified are pest animal/weed infestation; loss of scenic amenity, water quality decline, bushfire prevalence. These tend to be linked social and economic challenges such as increasing intensification of agriculture; increasing levels of conflict, but poor dispute resolutions processes (2007: 98-99). An increasing economic and social divide, a loss of sense of community and population skewed towards older people were evident. However, a positive sign is declining levels of social disadvantage, demonstrated by indicators such as improvements in housing stock (2007:102).

The report warns that the new peri-urban area requires specific management, different to either rural or urban (2007: xxvi). The recommendations suggested that many of the NRM issues could relate to any peri-urban area, but two specific to SEQ that need attention are:

1. The role, impact and future of the equine industry has been largely ignored in planning, NRM and landscape management;
2. Future sales of farms to non farmers are likely to cause further fragmentation (2007: xxv).

Some data which could be compared to results from the Healthy Country project include:

- Institutional arrangements (2007:103-104),
- Drivers for change (2007:109-110),
- The ability of new managers to take responsibility for their properties needs to be addressed. Five indicators were used to assess land management skills of newcomers; these suggest poor skills and abilities because of a lack of knowledge and time available (2007:125-129),
- Drivers and contemporary trends for several different groups, and emphasises the dynamic and changing nature of peri-urban communities (2007:130-135).

These trends may be consistent across south-east Queensland. The value of this report is that this data could be compared with other data collected from other areas in south-east Queensland.

[3] McKenzie J, Whelan J and Oliver P (2006). Reconnecting Fragmented landscapes: a scoping study on Natural Resource and Environmental Management in the peri-urban landscapes of south east Queensland. Report of SE05 project for South East Queensland Catchments.

This research was undertaken for South East Queensland Catchments and addresses the following research questions:

- Who are the landholders of the peri-urban region?
- How they interact with the landscape?
- What incentives & barriers to up-take of incentives exist, and how can barriers be overcome?

The results have some relevance to water quality and riparian restoration in South East Queensland. This report provides a good literature review of the subject, and is based on the expertise of authors with wide experience in of NRM in South East Queensland, but no surveys were undertaken.

Meaning of peri-urban

Focusing on the peri-urban fringe, this report argues that this region warrants attention from an NRM perspective. A checklist is provided to identify the peri-urban zone (Table 1: page 28). The complexity of the region includes a variety of land uses and the conflicting values of the array of stakeholders (see social matrix page 17; social conflict page 19). The peri-urban area is important as it could characterise the future of many rural landscapes (2006:11). Landscape drivers for farmland conversion (2006:14) and issues pertinent to landscape fragmentation (2006:16) are listed.

The environmental effects of peri-urban development pose challenges. In terms of current management required, McKenzie, Whelan and Oliver (2006:12), suggest that this is a landscape in transition. Natural resource and environmental management needs to respond to the specific context rather than simply use tools from urban or rural contexts.

Typologies of peri-urban landholders

The peri-urban communities diverge from traditional rural communities, and characteristics of peri-urban people need to be understood for the development of incentive packages (2006:71).

Existing typologies were reviewed, both NRM typologies generally and peri-urban specifically. NRM typologies can be classified according to the needs, purposes and scope of the research (from Emtage *et al.* 2005: 57 Table 5) – for example farming scale and occupation can use a structured questionnaire; while livelihood strategies could use a structured questionnaire or a focus group. The peri-urban typologies reviewed are summarised below (Table 1).

Key attribute measured	Categories (page for detailed explanation)
Growth processes and stakeholder attributes (Ford 1999; Fisher 2003)	Sub-urbanisation; Counter-urbanisation Population retention; Centripetal migration (page 58)
Migration patterns (Burnley and Murphy 2004)	Free agents; Forced relocators Periodic population; Inter-state migrants Gentrifiers (page 59)
Farming styles (Emtage <i>et al.</i> 2005)	Innovative; Progressive; Middles of the road; Lifestyler Resource limited; Traditional (pages 59-60)
Socio-economic characteristics and attitudes to land management (Barr 1996)	Committed; Pasture dabblers; Crop focussed; Belt tighteners; Sceptics; Comfortable group; Retreatists (page 60)

Table 1 Review of peri-urban typologies

McKenzie Whelan and Oliver (2006:61) suggest that a typology is needed for South East Queensland so that incentive packages can be tailored to the needs, learning styles, influences and motivations of specific stakeholder types. They propose seven steps of stakeholder analysis to develop a typology (see Table 8 McKenzie *et al.* 2006: 61-62). They suggest phone surveys, participant observation and community immersion studies, with data analysis using the computer program *NVivo* to develop a stakeholder typology (2006:62).

The report also reviews methods used to develop typologies (pp. 61-63). They discuss the limitations of micro-level analysis (i.e. participatory research tools such as focus groups, participant observation and telephone surveys). They point out that too much emphasis on micro-level analysis limits an understanding of the broader social and economic dynamics and changing context within Australian culture (p. 63).

Flexible incentives

Little research has been done of the application of incentives to peri-urban areas. The authors view is that incentives do work, but they qualify that “incentives are not a panacea, and in some instances the barriers to the uptake of NR&EM practices simply cannot be overcome by the use of incentives” (2006:46). They quote Vanclay (2004 in 2006:46) who says that farmers have valid reasons for not adopting practices.

The report points out that “one of the most frequently asserted barriers to the uptake of sustainable practices is the lack of consensus regarding the nature and extent of natural resource issues” (2006:31). As a result, McKenzie and his colleagues recommend flexible incentives (2006:35).

A typology of incentive options is developed (Table 2: 2006:37; and described on pages 37-42). Criteria for selecting incentives are proposed (pages 41-42).

Community-based social marketing is a potential strategy to increase the likelihood that incentives influence behaviour (2006:72). One of the valuable ideas from community-based social marketing is that it recognises the difference between internal and external barriers to change; and highlight the need to ask the participants themselves, not just assume we know what will make people change. One of the disadvantages of this approach is that it is expensive and time consuming (2006:42-45).

Barriers and constraints

The context of NRM is seen as the most important barrier to be addressed by regional bodies.

Contextual barriers listed as important are:

1. Knowledge of NRM issues
2. Presence or not of stewardship ethic
3. Consultation & ownership
4. Access to in-going support
5. Financial constraints (2006:31-37).

McKenzie *et al.* (2006:29) point out “barriers and constraints upon the adoption of current recommended practice by landholders have been extensively researched and documented” (for example Stanley *et al.* 2005a; Pannell *et al.* 2005). Guiding principles for effective and inclusive participation and partnerships are listed (Table 4 on 2006:52). While many other reports present similar guidelines, these are clear, concise and useful.

The concept of *degrees of salience* introduces three key attributes that influence decision-making – power, legitimacy and urgency (from Mitchell *et al.* 1997 in McKenzie *et*

*al.*2006: 30; 53-54). These are often forgotten, but are key influences on decision-making processes for anyone, not just peri-urban individuals.

Recommendations

A monitoring and evaluation strategy needs to accompany any learning strategy, to allow stakeholders to gain the necessary skills to undertaken continuous improvement in the design and delivery of peri-urban incentives (2006:73). McKenzie, Whelan and Oliver propose a model (Figure 2: page 8) that matches issues, incentives to a stakeholder typology. This approach acknowledges that different incentives strategies are needed for the variety of stakeholder groups within the peri-urban zone.

[4] Thomson D and Pepperdine S (2003) Assessing community capacity for riparian restoration. Report for Land and Water Australia, National Riparian Lands R&D Program (Product no: PR030553) ISBN 1-92086005

Aim of project

The aims of this project are very similar to the aims of the Healthy Country project, and as such it is quite relevant. This is also one of the few projects to develop a tool to assess capacity within the NRM context, specifically related to riparian restoration.

The Thomson and Pepperdine project has three aims, and the key aspects are:

1. Understand the opportunities and constraints to implementation of best-practice riparian-management practice; identify and rank in importance key influencing factors,
2. Assess the extent to which community-based projects have built capacity in the individuals, groups and organisations involved,
3. Develop ways in which ... organisations can improve program and project design to maximise community capacity building.

The first aim is the similar to the Healthy Country project in that it specifically looks at riparian management practices, the opportunities and constraints to implementation of best practice.

It would be useful to consider whether or not the other two aims could be incorporated into the Healthy Country project. These aims could be relevant as these address: (Aim 2) the capacity of all of the individuals and groups involved; and (Aim 3) how organisations, such as DPIF and SEQC could improve program and project design to enhance community capacity, in terms of knowledge provision, extension delivery and community engagement. Both would assist in improving water quality in South East Queensland catchments.

Concept of ‘capacity’

The focus of this project was on *capacity of individuals* to undertake riparian restoration. Improving communication, cooperation, empowerment, leadership and the ability of people to recognise knowledge gaps and how to overcome them, are key objectives for enhancing capacity (Thomson and Pepperdine 2003:48). As Thomson and Pepperdine (2003:12) explain that understanding the ‘level’ of capacity is helpful for NRM programs, at both the development and delivery stages in order to enhance effectiveness.

Definitions of capacity are reviewed, and very broad definition developed. Initially they saw ‘capacity’ as an individual’s ability to learn (2003:6), as it is used on common parlance, but this developed (Table 2 below). Thomson and Pepperdine see that ‘capacity’ implies an ability to act, but argue that this should not be starting point because of “the potential to undermine some of the key dimensions of capacity, such as trust, reciprocity, empowerment and shared visions.” (2003:10). Rather capacity needs to be seen as a “continuous *process* by which individuals, groups, institutions, organisations and societies enhance their abilities and meet development challenges” (2003:10).

Definitions of capacity	Comment
Individual or group's ability to learn, understand & act so that they can continue to build on what the original project was designed to achieve (p. 6)	This definition sees capacity as an ability to do something.
'Capacity' encompasses social capital (community-level) & human capital (individual level), but it is concerned not only with the resources available — the capital — but also with the <i>ability to act</i> (p. 9).	This definition emphasises 'capital'
The European Centre for Development Policy Management (ECDPM) defines capacity as a dynamic entity. They view capacity as a continuous process by which individuals, groups, institutions, organisations & societies enhance their abilities & meet development challenges. This view of 'capacity as a process' places an emphasis on the roles & responsibilities of all actors, the relationships between them & their attitudes (p. 10).	This definition frames capacity differently – capacity is a process, not ability. As such it emphasises the key dimensions of capacity, such as 'trust, reciprocity, empowerment & shared visions' (p. 10).
Capacity can be considered as: ... the capability of individuals, groups & institutions to understand & deal with the enabling & constraining elements, dimensions & issues that drive the process of 'capital' accumulation & decline (in all its forms) to produce desirable outcomes (p. 12 & 48).	This definition emphasises capability; focuses on the idea that 'people & institutions may be <i>able</i> to act, but are constrained by other issues' (p. 11)
The key to understanding capacity means looking at capital, capacity & capacity building from a dialectical perspective. Riparian land management is the outcome of many underlying processes that wax & wane in pace & time. Furthermore, whether or not riparian management in one place & time is defined as 'good' or 'bad' depends upon the values, perceptions & knowledge of individuals, governments & the broader community. These values and perceptions also change over time because they are the outcomes of underlying social and cultural processes (p.10).	The key to understanding capacity is to focus on dialectics, which is the study of flows & fluxes, & sees 'things' – resource condition, attitudes, behaviours are all dynamic with flows and fluxes etc (p.10.)

Table 2 Definitions of capacity building (Thomson and Pepperdine 2003)

This table outlines the development of a comprehensive definition of capacity; firstly the concept of 'capital' is incorporated, and then the idea of dynamic processes. The focus on *capacity as a process* is useful for the Healthy Country project, as capacity in a peri-urban zone is certainly dynamic. The community itself is in a state of flux, and values and perceptions change over time because they are the outcomes of underlying social and cultural processes (Thomson and Pepperdine 2003:10).

This dialectic perspective of capacity is more in line with the current thinking about extension. No longer are traditional extension models with the transfer of technology and the parallel strategies of capacity building adequate. More emphasis is now placed on 'building relationships and participatory processes so as to facilitate ownership' (Thomson and Pepperdine 2003:12) and be more sensitive to contextual issues.

The report highlights elements of social capacity. The four key elements (Table 3 below) could also be used as a framework for analysis.

Norms and values	<ul style="list-style-type: none"> •Shared values, norms, attitudes •Shared vision that takes account of history of collective members •Inclusiveness •Trust •Reciprocity •Identification with a social collective or 'group'
Knowledge	<ul style="list-style-type: none"> •Knowledge and skills acquired from education and training or experience •Knowledge of where and how to access resources
Skills in working together and with others	<ul style="list-style-type: none"> •Leadership •Self-efficacy for participation •Decision-making and problem solving •Conflict resolution, negotiation
Interactional infrastructure	<ul style="list-style-type: none"> •Relational networks (external and internal) •Social brokers •Events, meetings and communication sites •Procedures, rules, precedents and organisational structures

Table 3 Elements of social capacity identified in the literature (Thomson and Pepperdine 2003:9 from Cocklin *et al.* 2001:106)

Evaluation of the social dimensions of NRM has tended to focus measuring outcomes, rather than processes. Thomson and Pepperdine’s work looks at both outcomes and social processes. The *dynamics* of social *processes* are critical for the success of NRM projects – it is the people and the processes such as trust, reciprocity, empowerment and developing shared visions which are critical factors. To benchmark, monitor and evaluate the social dimensions of NRM, as required in the Healthy Country project needs both measurement of outcomes and processes.

Methods

This section summarises the methods used by the Thomson and Pepperdine (2003), as well as the assessment tool they developed.



The project reviewed 11 catchments groups across Australia (Figure 1); and the number of groups gives credibility to their results.

Figure 1. Location of National Riparian Lands R&D Program demonstration and evaluation sites (Lovett 2001 in Thomson and Pepperdine 2003:6)

Methods used in the project

The project used qualitative methodology with 11 case studies. Opportunities and constraints to riparian restoration was the focus of investigation in all regions. Only five of the cases were studied in depth.

A range of people involved in the projects were interviewed – including landholders, State agency officers, catchment management committee members and staff, Landcare coordinators, local government officers, field staff of revegetation schemes etc. These people had varying degrees of direct or indirect association with the demonstration and evaluation projects.

In these five case study regions, two main methods were used to explore the context: focus groups and site visits. These two methods provided data to compile the list of dimensions of capacity in relation to riparian restoration; and an appreciation of the importance of each dimension for the respective regions.

The dimensions were then used as the framework for a ‘capacity assessment tool’, which was developed as part of this project.

Assessment tool

Thomson and Pepperdine (2003) developed a tool in the form of a survey, which can be administered on-line or as a paper copy (it is available free URL: www.rivers.gov.au). This assessment tool has been pilot tested widely and is ready for use.

The tool monitors the social and institutional landscape, so as to inform and refine policies, programs and projects. Thomson and Pepperdine (2003) state that their tool could be useful for policy makers, project managers and groups/agencies as [1] a ‘checklist’ of issues in relation to ‘capacity’, [2] a reporting tool, [3] a diagnostic tool (as a ‘SWOT’ analysis), [4] a participatory research tool (detailed explanation of these below in Table 4).

Table 4 Uses for Thomson and Pepperdine’s tool (2003:33)

Key uses	Explanation
‘checklist’ of issues in relation to ‘capacity’	As a ‘checklist’, the assessment tool can help users to identify key issues in relation to capacity and capacity building, and to start thinking about the features of programs and projects that might respond to or address these issues. Using the tool in this way may be particularly useful if a group of people was involved. The tool would then become a catalyst for discussion about the dimensions of capacity within the region, enabling a range of perspectives on different issues to be collected.
reporting tool	By completing the assessment, a ‘snapshot’ of conditions and trends in relation to ‘capacity’ can be recorded for a single point in time. This might be used to inform reports on regional targets, or simply to record current conditions so that comparisons can be made in the future.
diagnostic tool (‘SWOT’ analysis)	The assessment tool can be used to identify strengths and weaknesses within the local community, institutions, programs/projects and therefore be used to inform decisions about, for example, resource allocation for ‘capacity enhancement’. The tool could be used to identify reasons for successes or shortcomings of projects and programs.
participatory research tool	The tool provides a useful framework from which to structure participatory research. A range of perceptions of local conditions could be gained by using the assessment components of the tool. If used as the focus of a group discussion, each of the dimensions could be used as a catalyst for discussion about condition, trend and importance of issues affecting the ability of people to be involved in riparian restoration. A participatory approach to setting the weighting of importance of each dimension within the region would be a very interesting and informative exercise. Data on the variation of perceptions about how important each dimension is in influencing behaviour at an individual, community or institutional scale would be valuable for informing policy options.

One disadvantage of this tool is that it is quite lengthy and the analysis seems complicated (see pages 38-40). Secondly, assessment and ‘scoring’ is largely subjective. The tool is *not* meant to be used to compare regions and projects. Therefore comparisons could only be reliably done if the same person undertook the assessment, and they had a similar degree of knowledge about the projects or regions to be compared (Thomson and Pepperdine 2003:32).

Another major disadvantage for the Healthy Country project is that this tool was not designed to develop a typology of landholders. However, it can provide an assessment of institutional roles, and could be useful in terms of diagnosing and reporting on social conditions for benchmarking, monitoring and evaluation. The interviewees and users are

government staff, extension officers and policy makers. As such it would be used in conjunction with landholder surveys.

Relevant results

Previous research by Thomson and Pepperdine (2002 reported in Thomson and Pepperdine 2003:16) indicated that some characteristics of individuals are linked to riparian restoration – some characteristics link to related behaviour and riparian practice, and some to information seeking behaviour, for example:

- Education of the respondent was significantly related the protection of remnant vegetation and tree planting, although the relationship was not necessarily linear.
- Age and perceived adequacy of respondent’s income were not significantly related to a range of behavioural characteristics
- Farm profit was significantly linked to the use of advisers and contractors.
- Equity in the farm was an insignificant factor
- Individual-level attitudinal indices (e.g. business orientation, innovation and technology; see Table 5 below) were significantly correlated with behaviours relating to riparian restoration. Community-level attitudinal indices tended not correlate with riparian restoration behaviours.
- Significant relationships exist between demographic and structural characteristics of farmers and their behaviours. However, none were significant with behaviours relating to riparian restoration.
- Community-level attitudinal indices were particularly important in information-seeking behaviours.

Attitudinal indices are formed by a group of various indicators, which together form an indicator of a particular attitude, such as business orientation. The following table links several of these indices to behaviour related to agriculture, engagement and/or riparian restoration.

Indices	Behaviours (significantly correlated with indices)
<i>Individual level</i>	
Business orientation	Important determinant of use of advisers, tree planting, participation in community activities, use of contractors, protection and enhancement of remnant vegetation.
Lifestyle or 'tradition' orientation	Riparian restoration
Financing the farm	Community participation
Labour	Participation in agricultural training
Land (environment)	Participation in agricultural training, protection and enhancement of remnant vegetation, use of advisers, expansion of areas of native vegetation, riparian restoration, tree planting.
Planning and risk management	Participation in agricultural training, community participation, use of advisers, protection and enhancement of remnant vegetation, tree planting.
Innovation and technology	Participation in agricultural training, community participation, use of advisers, protection and enhancement of remnant vegetation, tree planting.
<i>Community level</i>	
Leadership	None
Participation in community life	None
Opportunity to participate	Community participation, use of advisers
Efficacy	None
Neighbourliness	Community participation, use of advisers, participation in agricultural training
Community-mindedness	Community participation, use of advisers, use of contractors, participation in agricultural training
Open-mindedness	Community participation, use of advisers
Attachment	Community participation, use of advisers
Stress	Use of advisers, tree planting

Table 5. Correlations between attitudinal indices and various behaviours at individual and community levels (Thomson and Pepperdine 2002 quoted in Thomson and Pepperdine 2003:16)

Thomson and Pepperdine (2003) also examined factors influencing success and failure of riparian restoration. They presented these as a mind map (refer to Figure 2 Thomson and Pepperdine 2003:25).

The key findings which have some relevance to the Healthy Country project are:

- The duality of issues and events: “Issues and events that contribute to ‘success’ and those that cause ‘failure’ are not necessarily mutually exclusive. Rather, the same issue or event, in different places and times, can contribute to success and/or failure, depending upon the regional context and the ability of the individual/ group/agency to understand and manage that issue or factor”. A good example of the duality of ‘issues and events’ is flooding. Floods damage can mean people become disheartened when works are destroyed. On the other hand, floods can raise awareness of, and interest in, riparian restoration (2003:23)
- Provision of funding by way of cost-sharing arrangements can be based on the prescriptive approach that ‘one size fits all’ (2003:27) and stem from the traditional response to linear extension theory which is simplistic. More flexible approaches are needed because of the social diversity within catchments. Two examples of effective cost-sharing examples are (1) GBCMA’s flexible incentive scheme and (2) Bush tender trial of the Department of Natural Resources and Environment in central Victoria (2003:28).
- A positive policy shift is the increasing evidence of cooperation and coordination between groups: this overcomes the perceptions of duplication and perceived waste of resources (2003:28)
- Consistency is important in maintaining the identity of programs, groups and personnel; and consistency of messages is critical in building trust and confidence (2003:29)
- The tendency of government and other organisations to ‘back the favorites’ (the principle applies to selecting catchment coordinators, principle investigators, catchment committees) is inappropriate given the diversity of catchment residents in terms of their values and perceptions of riparian lands (2003:29)
- The use of ‘demonstration sites’ is very mixed. Selection needs to be mindful of the above point, with the siting of more demonstrations on properties where people have values less consistent with those of catchment coordinators (2003: 30)
- There is a broad diversity in the extent of adoption of riparian restoration works. These differences are likely to reflect biophysical and social differences within and between regions.
- Participants (landholders) appear to be motivated to undertake riparian restoration for environmental, aesthetic and farm-succession reasons, not purely economics. Economic motives are not the key driver of decision-making about riparian management (2003:30)
- The key dimensions of capacity did not vary considerably between regions considered across Australia (2003:31). This suggests that the dimensions are probably universally applicable, albeit to varying degrees of importance (2003: 47). Each of these dimensions has different influences in different places and times (2003: 47).
- Difficult to attribute cause to any improvements in capacity (2003: 47).

Some of the results of Thomson and Pepperdine’s research (2003) would be worth reviewing in conjunction with the results of any survey undertaken in southeast Queensland. Firstly the detail of about success and failures is presented under four

themes – see Thomson and Pepperdine 2003:24-31) – Theme 1: perceptions and values; Theme 2 Learning and understanding (including adaptive management); Theme 3: Living in and managing (including climate, economic sustainability); Theme 4: Organising and governance (including fear of legislation; funding). Secondly, the dimensions of capacity could be useful to compare with results from the Healthy Country project. The detailed results are presented as condition and trend of capacity, under each of five dimensions of capacity – 1 Context, 2 Values & perceptions, 3 Communications & empowerment, 4 Program design, 5 Program delivery (Thomson and Pepperdine 2003:41-47). Thomson and Pepperdine (2003:41) suggest that *Values and perceptions*, and *program design* are more important than the other dimensions.

[5] Darbas T, Smith T and Hall C (2007) Case Studies of Community Engagement: Enhancing Community Engagement for NRM in the SEQ Western Catchment. Report prepared as part of the AG-SIP 18 project: Effective Engagement for NRM in the SEQ Western Catchments, September 2007.

This report by Darbas, Smith and Hall (2007) was the last in a series of reports funding under the Agricultural State-level Investment Plan (AgSIP 18) concerning the improvement of community engagement for NRM in the peri-urban region (one of the other projects was Smith, Darbus, Hall, Fisher, Bellamy, Gambley and Leitch 2005).

Darbus, Smith and Hall (2007) include a brief review of the other reports, so these comments are discussed first, then the 2007 report is summarised.

The key findings from the 1st AG18 report were that:

- Engagement practitioners often perform multiple roles that may be in conflict (eg. encouragement of bio-diversity conservation and sustainable production)
- Most engagement practitioners have little formal training in engagement, but instead have backgrounds in science or planning
- The majority of tools used are top-down and largely involve the usual suspects
- There are examples of innovation in engagement, such as the SEQ Catchments' sector liaison officers (e.g. teams combine local context with sector specialisation).

The 2nd AG18 report found that context is a major influence on the success or failure of an engagement initiative. Thus people and groups have different preferences for engaging, and engagement approaches need to reflect these differences. This research developed a typology of engagement with three distinct landholder groups:

- Non-NRM motivations are anthropocentric (focused on vulnerability within communities)
- Industry motivations are production-centric (focused on current productivity and sustainability of production for future generations)
- Landcare motivations are ecocentric (affinity with a 'greenie' philosophy).

This last category is in contrast to previous experiences of extension officers (Coutts *pers comm.* 2008) that suggest that Landcare was not motivated by a greenie philosophy.

Comments about the engagement preferences of these groups included:

- All groups stated that time was their major limitation
- Industry preferences are for engagers to provide local and commodity-specific information (these groups have been most affected by the withdrawal of State extension staff)
- Landcare preferences are for on-ground activities and time to understand the engagement process
- Non-NRM groups stated that NRM was not their primary concern – engagement processes need to focus on linking NRM to quality of life and community well-being.

This report also found that networks are currently disconnected from each other (e.g. only one non-NRM group member was involved in an NRM group).

Case studies of community engagement

The research report by Darbus, Smith and Hall (2007:4) reviewed four engagement tools based on 20 engagement events. The tools were round tables, field days, networks and workshops.

Overall each tool is seen as an effective engagement tool, and some guidelines are provided to improve the use of each specific tool (Darbus *et al.* 2007:4-6 with more detail in the report). A few points made which are important in my view are:

- Present a picture of institutional integration by involving relevant community groups and government agencies (page 5)

- Pursue opportunities to increase institutional collaboration, at both the policy and operational scales (page 6)
- Provide support to engagement practitioners distributed across multiple organisations to build their reflective capacity (page 6).

This report does not claim to provide a guide for choosing engagement tools, it is not a stated the aim of the report. Two key omissions limit the usefulness of this review as a guide for choosing engagement tools. Firstly, little is reported on other purposes for these tools or other contexts where the tools could useful. Comments are only made about the context in which the tool was used. The review of networks was particularly poor in this respect, as the report only discusses meetings as one form of networks.

Secondly, little mention is made of how one-off tools can be improved if these are incorporated into a well designed communication or engagement package. The importance of feedback after activities is highlighted. I would think that there were other activities leading up to and following the activities reviewed; but these are not mentioned. Various authors and extension specialists (Coutts, Roberts, Frost & Coutts 2005; Guijt 1998; Kelly 2001) discuss how the integration of various tools is essential for effective extension or participatory approaches. The design of extension programs or projects, including the order that tools are used, can be critical for the success of NRM and agricultural projects.

Recommendations

A list of recommendation can be found in the Executive summary (Darbus *et al.* 2007:6).

Two of the key points are that:

- engagement practitioners should increase their target audiences through alternative engagement tools (i.e. match engagement tools to motivations, preferences and capacities) to maximise impact
 - engagement practitioners needs further training, as many did not have qualifications in extension or social dimensions of NRM. The Citizen Science Toolbox [URL: www.coastal.crc.org.au/toolbox] was a useful resource to enhance capacity of staff.
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Appendix 3 Tables related to the survey instrument

The following tables show the links between the questions in the survey instrument and the National Guidelines; and other links to indicate what key aspects of domains of interest are included.

Table 1 Alignment between Healthy Country questionnaire and proposed National Socio-economic indicators (Nelson *et al.* 2006)

National indicators (Nelson et al. 2006)	Questions related to national indicators	National indicators	Questions related to national indicators
Aspirations of NRM managers <i>Goals</i> (Production, profit, income; Social, lifestyle, Workload; environment, property condition) <i>Values and beliefs</i> <i>Personality</i> <i>Motivation</i> <i>Culture</i>	2.3 Long term plans Enterprises (1.6); 2.4 Values; 2.4 Values XXXXXXXXX XXXXXXXXX XXXXXXXXX	Attributes of NRM practices <i>Relative advantage</i> (Physical utility for reducing/preventing degradation, Economic viability) <i>Compatibility</i> (With personal values; Social norms; Institutional constraints)	XXXXXX 1.8 Practice adoption 2.6 Attitudes re practices XXXXXXXXXXXXX 2.5 Constraints
Capacity of NRM managers <i>Human</i> (Knowledge of issues management; Health, Age, Gender, Education, Skills, Occupation) <i>Social</i> (Industry/NRM group membership/involvement in group planning activities; Trust in institutions ; Government assistance received ; access to support/information) <i>Natural</i> (Land, water, biological resources ; Perceived degradation) <i>Physical</i> (Farm area, Infrastructure Tools and machinery) <i>Financial</i> Livelihood diversity, on and off-farm; Savings, access to credit Government support)	1.7 Property issues 2.8 District issues 3.1 Age , 3.5 Gender, 3.6 Education, 3.2 Occupation 2.1 Experience 2.12 Community group involvement 2.13 Trust XXXXXXXXX 2.10, 2.11 Preferred information and knowledge access 1.3 Watercourse; 1.4 Land types; 1.5 Water available 1.7Property Issues; 2.8 District issues 1.1 Area XXXXXXXXX 3.7, 3.8 On farm and total income; XXXXXXXX; 3.9 Equity 2.9 Preferred incentives	Rural livelihoods context <i>Social relations</i> <i>Institutions</i> (property rights, Market based instruments) <i>Organisations</i> (participation, trust) <i>Trends</i> (Structural adjustment , terms of trade, global trends, Demographic changes) <i>Shocks</i> Climate, Market	XXXXXXXXXXXXX XXXXXXXXX 2.12 Group participation; 2.13 Trust 2.5.2 Changes inhibiting action; 2.8 District issues XXXXXXXXXXXXX
Outcomes of improved NRM <i>Practice change</i> (Extent and quality of adoption)	1.8 Practice adoption 2.6 Attitudes re	Questions not covered above	1.2 Location 2.2 Decision making role

<i>Biophysical</i> (Land, water and biological)	practices		
<i>Economic</i> (Livelihood sustainability ,Regional /industry economy)	Xxxxxxxx		
<i>Social</i> (Desired lifestyle; Community wellbeing)	2.3 Long term plans 2.4 Values; 2.8 District constraints; 2.12 Community links.		

Purpose of the survey

To assist in determining the purpose of the survey, the questions were compared to various layers of information, a framework proposed by Cutill, Maclean, Ross, Owens, Witt and King (in press) An outline of the key topics covered in the survey instrument is presented in the Table below (Table 2), based on concept of layers of information (Cuthill, Maclean, Ross, Owens Witt and King, in press).

This framework may assist further discussion during the pilot testing, with regards the purpose of survey instrument and need for individual questions by all agencies involved.

Table 2 Purpose and suggested application of questions in Healthy Country survey

Question/Variable	Purpose/application	Domain
1. The Property		
1.1 Area	Comparison of issues, practices, constraints according to area. Could link with land-use and property income as a property use typology.	Physical
1.2 Catchment location	Look for concentrations of attitudes, practices, land use or values, networks, trust in catchments. Combine with network location to further refine local characteristics.	Physical
1.3 Access to watercourse	Separate riparian from non-riparian owners in looking at issues, practices and attitudes	Natural
1.3.1 Riparian vegetation	Separate vegetated from less vegetated for comparison of issues, practices, attitudes re watercourse management.	Natural
1.4 Property land/veg types	Link to enterprise, link to practices,	Human x natural
1.5 Property water types	Not sure – maybe remove? Though looks right to be there.	Human x Natural
1.6 Property land uses	Comparison of issues, practices, attitudes, values. Could be art of a physical-financial typology.	Human x Natural
1.7 Property issues	Perceived issues an important starter for agency programs. Links to several other variables.	Human x natural
1.8 Property practices	Can be used as a dependent variable in looking at impact of a number of characteristics of property and manager.	Human x natural
2. The Manager		
2.1a Years owned property	Can link to values, attitudes, practices , perceived constraints, maybe part a sense of place/career typology.	Human
2.1b Years lived in district	Link to community networks, attitudes, practices, district issues	Human x social
2.2 Decision responsibility	A filter if needed ; e.g. re long term plans or manager's values and attitudes	Human
2.3 Long term plans	Link to practices; could be part of a typology	Human x Financial
2.4 Personal Values related to property ownership	Link to attitudes and practice adoption; plays cast against e.g. age. Use to develop a typology	Human x Cultural
2.4.1 Values in watercourse management	Link to attitudes and practices re watercourse management	Cultural x Natural
2.5 Constraints to change	Informs regional policy. Identify constraints for perceived by types of landholder to help developing strategies.	Natural x Governance

		x Financial
2.6 Attitudes re property management	Informs development of education and incentives schemes. Look for catchment clusters in order to develop local education strategies.	Human x Social x Cultural
2.7 Perceived district issues	Informs regional priority setting and policy for NRM related bodies.	Human x Social
2.8 Preferred incentive	Informs development of incentive packages.	Human x Financial
2.9 Preferred information source	Informs awareness and capacity building strategies.	Human
2.10 Preferred learning methods	Informs capacity building strategies.	Human x Social
2.11 Community network	Shows potential to work through community networks to encourage community engagement in NRM.	Social
2.12.1 Community network location	Helps pinpoint where networks are strong and weak.	Social
2.13 Trust in NRM service or information providers	Informs agencies about need for different relationships and strategies	Human x social
3. Personal/financial data		
3.1 Age		
3.2 Occupation		
3.3 Off-property work		
3.4 Property work		
3.5 Gender		
3.6 Education		
3.7 Property income % total		
3.8 Property income \$		
3.9 Equity		