

# Relationships, resources and results: reflections on experiences in building capacity for improved river and riparian management

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## Abstract

‘Capacity building’ is about enhancing the ability of individuals and communities to act, in this context, for improved river and riparian management. Land & Water Australia’s National Riparian Lands R&D Program and the Land Water & Wool Rivers and Water Quality Sub-Program are designed to provide science to underpin improved river and riparian management and, ultimately, to build capacity. This presentation will discuss the experiences of those involved, and reflect on what has worked and why. Critical success and failure factors will also be discussed in relation to whether ‘capacity’ can be ‘built’ in the current NRM environment. In addition, an issue will be raised about the focus of capacity building efforts on ‘the landowner’ and whether NRM organisations might also benefit from investment. The importance of recognising that every individual’s and community’s capacity is unique will be highlighted, and ideas put forward about how we can tailor our approaches to capacity building so that they take account of the ‘human’ elements that ultimately dictate whether or not an NRM outcome is achieved.

## Keywords

Capacity, capacity building, science, practice, people

## Introduction

After thirteen years of investment, Land & Water Australia’s National Riparian Lands Research & Development Program has now come to an end, and it is timely to reflect on what this Program has achieved. Although never explicitly stated, this Program has focused on building capacity in our research community, in those working in government and non-government NRM organisations, and in people with rivers and riparian environments running through their properties. Building capacity in this sense refers to furthering our knowledge about how riparian zones function, and enhancing our ability to apply that knowledge so that improved on-ground outcomes can be achieved.

However, we know that no matter how rational our prescriptions for improving river health may be, there are a host of other factors that dictate whether or not a person will change their behaviour and management practices. For example, through the Land Water & Wool Rivers & Water Quality Sub-program we have learnt how to place the science behind our management recommendations within a framework that explicitly recognises those factors that also impact on behavioural change. The framework is called the Five Ps (Profit, Proof, People, Place and Promise) and is a simple way of ensuring that the social, economic and environmental factors that affect NRM decision making are considered (Lovett, 2006). The five Ps are:

1. Profit – for woolgrowers in environmental, economic and social terms
2. Proof– excellence in the science undertaken to provide woolgrowers with the confidence to act
3. People – valuing the experiential knowledge of woolgrowers and understanding the context within which they live and work
4. Place – recognizing the connection people have with their land and rivers
5. Promise – our promise to work with woolgrowers for improved NRM outcomes on-farm

The Five Ps show how the thinking of those of us working on the National Riparian Lands R&D Program has evolved since we began in 1993. The Land Water & Wool initiative commenced in 2002, and it was clear that

although the scientific knowledge about how best to manage rivers and riparian areas was available, we lacked understanding of the socio-cultural and economic impediments that prevented many woolgrowers from taking up and using that technically sound information.

### Assessing ‘capacity’

We were fortunate that Don Thomson and Sharon Pepperdine had been contracted to review a number of demonstration and evaluation projects funded in Phase One of the National Riparian Lands R&D Program (1993-2000), in order to assess whether the capacity to undertake and continue riparian restoration had been ‘built’ in these communities. What they discovered was that ‘capacity’ is very much:

“...about the skills and knowledge of individuals, their perceptions and values, social networks and relations, including feelings of trust, reciprocity, support and cooperation within and between institutions and between individuals. Issues of governance, administration, consistency, continuity and the availability and accessibility of financial and other resources are also important. We also found that the physical and natural capital of the region can play a large role in determining the level of capital of other forms (eg funding) required to successfully manage riparian lands.” (Thomson & Pepperdine, 2003a)

Based on these findings, 35 dimensions of capacity were identified (see Table 1) and a Capacity Assessment Tool developed to enable groups and individuals to consider these dimensions prior to undertaking a river or riparian restoration project. The Capacity Assessment Tool is web-based and easily downloaded for use on personal computers, however, we are finding that many people feel it is too time-consuming to use and would rather get straight into action rather than planning – this is something we will return to later when commenting on the current environment for NRM and how this impedes our ability to take time to plan first and act second.

**Table 1. Dimensions of capacity included in the Capacity Assessment Tool (Source: Thomson & Pepperdine, 2003b).**

Theme	Dimension
Context	Economic conditions, community cohesion and support, awareness of water quality/quantity issues, setbacks, community networks, community negotiation structures, complexity and cost of works
Values and perceptions	Values, shared vision, skills in working with diverse values and perceptions, awareness, open mindedness and learning, perceptions of solutions, ownership of problems and solutions
Communications and empowerment	Data availability, targeted communication, communication mechanisms, consistency of communications, cooperation between agencies, empowerment, inclusiveness
Program design	Roles and responsibilities, financial security, program consistency, institutional consistency, flexibility, forward planning, transparency
Program delivery	Decision-making, consistency of key people within agencies, personality of key people in agencies, skills and experience of key people within agencies, community ‘champions’, monitoring and evaluation, institutional capacity.

When looking through Table 1 it becomes apparent that many of these dimensions relate to social and economic conditions in a community, and that scientific or technical data is just one element amongst a host of others. This is not an argument against the value of science, but rather, recognition that science needs to be placed within the broader context of what is occurring within a community or individual’s life so that it can gain meaning and become relevant to them in their NRM decision making. By combining the findings of Thomson and Pepperdine with the experience of working with the wool industry, the Five Ps have become a simple way of introducing the need to consider the 35 dimensions outlined in Table 1. Ideally, we like to think about the Five Ps as an introduction to the need to explicitly recognise social, economic and environmental aspects of NRM projects, and the Capacity Assessment Tool as something that can then be used to assess them at a finer level of detail.

## The importance of relationships

The development of the Five Ps and the Capacity Assessment Tool are examples of how people working in NRM have learnt to accept and acknowledge the complex reality of how humans make decisions. The sharing of knowledge through interaction with others, and through the building of relationships and trust, is often not highlighted as an important outcome of the work that we do in NRM. Instead, we tend to focus on easily-measured outputs, such as the number of trees planted or kilometres fenced. As a result, our NRM reporting is limited, and does not generally include data, or even descriptions, of how peoples' ideas and perceptions may have changed, and how this essential change may then flow on to changes in management.

In the National Riparian Lands R&D Program we began to realise how sharing ideas, knowledge and experiences enabled us to better manage the task of developing products, tools and techniques that would help people better manage river and riparian environments. By investing in our research team through regular meetings, shared meals, fun activities and valuing the work they were doing, we built up a camaraderie within our group. We were fortunate to have a set of truly outstanding researchers who became identified closely with our Program, and were happy to act as champions for it. These researchers have presented their results and knowledge in workshops across the country, written articles for *RipRap* and become involved with the wider community through a range of non-academic forums. This has been vital for the Program, as it has meant that our researchers have had a public face that is approachable and not aloof from those working outside academic institutions. In Phase One of our Program we arranged to have a Program Management Committee made up of people from each State and Territory who were working directly in river and riparian management and, as a result, had a 'hands on' approach to making sure the science that was undertaken was accessible. Bringing together this management group and our researchers made for lively and stimulating debate that all enjoyed, but which also brought a level of understanding between managers and scientists of the constraints each worked within. This understanding ultimately resulted in better products and ways of communicating outcomes to end-users.

The other aspect to relationships is that they can be established even if there is no early face-to-face communication. The value of *RipRap* as a communication vehicle has been that anyone working in river and riparian management can learn about what is happening in Australia on a particular topic, and can contact people working on the same topic or facing the same problems. Featuring people and their work brings it to life, particularly when you can show their faces and they can report on what they have been doing and the implications this has for management. *RipRap* did not only feature Land & Water funded research, it covered research around whichever theme was being focused on, as well as sourcing State and Territory contributions so that an across-Australia picture could be gained by the reader. The website [www.rivers.gov.au](http://www.rivers.gov.au) has also provided people with a way of keeping connected, particularly as our tools and techniques are available for download, and people can provide comments on how they are being used so that others can gain from their experience. This website has a large usage by educational institutions, private consultants and government agencies (including catchment management agencies), and we have tried to make it a site for the exchange of information between all these groups.

Investing in relationships does, however, bring with it an obligation to those involved. One of the problems we have encountered with the decision to end the National Riparian Lands R&D Program has been that the relationships we have built need to be acknowledged, and support put in place so that we can maintain our connections, but through other mechanisms. To this end, we have developed a range of synthesis products such as the *Principles for Riparian Land Management* book that brings together the key scientific findings from 13 years work on the Program, a free workshop series that ran in every State and Territory (2005-2006), as well as one in Melbourne that attracted 150 people (2007), and a 'Legacy CD' that has every publication and tool we have every produced, as well as presentations people can use to pass on the key messages about river and riparian management developed through the Program. These products aim to synthesise information and present it in easily accessible ways so that the science we have undertaken can continue to be disseminated to end-users.

The Land Water & Wool Rivers Program also invested in relationships through its management team, and this has enabled results from the Program to be delivered in a more integrated way than if there had been little contact between those managing different aspects of the Program. Information has been produced for national and regional audiences, with the Tasmanian midlands, Burra region of South Australia and the New South Wales tablelands region around Yass, having site specific projects dealing with different riparian management issues. These issues were identified by local woolgrowers and included: how to manage gully erosion, best weed treatments, revegetation techniques, and grazing regimes. The research into these management issues was undertaken during the drought and this meant that there was little change in the biophysical condition of the riparian sites we were working on. However, by using the Five Ps, we have gathered a wealth of information about the other factors that impact on whether or not a woolgrower changes their management behaviour. We have case studies, oral histories and site templates that capture historical information and insights into how and why particular wool growing regions are the way they are. By venturing beyond a purely biophysical investigation we have developed relationships with woolgrowers and those that support them in local NRM agencies, both government and non-government, that have resulted in products from the research that relate directly to that community. We also invested in local project coordinators so that the knowledge and skills developed as a result of the Land Water & Wool investment stayed in that community, rather than leaving when the project ended.

### **Rethinking resources**

The word ‘resources’ tends to be associated with money, yet when you talk to people working in NRM the key limiting factor for them is time. The NRM environment in Australia is one in which people are time-poor, and under considerable pressure to achieve on-ground outcomes in unrealistic time frames. It is very difficult to form relationships of trust and reciprocity when you do not have the time to do it. In Canada, one of the most successful extension programs for river and riparian management, Cows and Fish, works on the basis that it takes at least five years to establish a relationship with someone and only then can you start to discuss changing management practices (Lovett, 2004). For this organisation, resources are allocated for cups of coffee, visits to meet and discuss options with people, and a range of other ways of communicating with people that are not time-constrained. In Australia, this is far from the case. Most projects have short time frames of two to three years, with ambitious objectives for on-ground change that requires community input and support. The project officer responsible often moves to the region to undertake the work and, due to a lack of secure employment, is likely to be looking for their next position well before the project is completed. This scenario runs counter to what we know about our own relationships – they take time to develop, need time to be maintained and are generally ongoing. The Capacity Assessment Tool includes the need for financial security for on-ground works to make sure they can be completed, and consistency in staff employed to plan, implement and evaluate on-ground works. These are issues that must be taken seriously in NRM programs if they are to meet their stated objectives.

The National Riparian Lands R&D Program has been one of the most long running recent programs of R&D in Australia. It has been able to establish ongoing relationships with people working in river and riparian management largely because the people working on the Program have been consistent, the communication techniques used have been well resourced and maintained (eg: *RipRap*, [www.rivers.gov.au](http://www.rivers.gov.au)) and relationships have been valued. The Land Water & Wool Program had a much shorter time frame, with just five years to produce outcomes of value to woolgrowers. As a result of our learning about the importance of relationships, we decided to employ local project coordinators who were already trusted in the community and who had networks already established. In addition, we knew that the people we were employing would stay in the community once the project had ended. This was important to us as we knew we would be able to leave skills, products and networks as a legacy of our time working in the region.

### **Getting results**

During its lifetime, the National Riparian Lands R&D Program has been evaluated by independent reviews as successfully meeting its objectives, with the research assessed as being of world class, and the products as successfully translating science into practice. These evaluations have focused on measurable outputs from the

Program, however, products don't get used unless there is the capacity to use them, and we believe the Program has assisted in 'building capacity' in three ways – in people, social infrastructure and the provision of technical information.

## **People**

'People' is one of the Five Ps, and an essential, though often neglected, element in NRM. This is strange, as it is people that are the constant in NRM. Australia has a very diverse biophysical environment and we need to be able to develop guidelines and strategies for dealing with this diversity that enable people to effect change. We therefore need to understand what motivates people to get involved in NRM, as well as learn how to maintain their interest and skills in caring for our landscapes. The National Riparian Land R&D Program has invested in 'people' by raising awareness about the need for improved riparian management, changing attitudes by providing people with the opportunities to see with their own eyes what can be achieved, and by supporting those that want to act, with access to researchers, guidelines and tools. We have learnt through our Phase One Demonstration projects the importance of experiential learning, and how theory can become meaningful for someone if they are given the opportunity to test that theory in their own situation. Experience provides meaning, and we have become strong advocates of the need to merge experiential with technical knowledge. In our work with woolgrowers, considerable emphasis has been placed on the need to provide those involved with opportunities to test the recommendations on their farm, and within the context of running a commercial wool enterprise. This has been important, as without the link to the everyday experience of managing a wool enterprise, woolgrowers find it difficult to see how river and riparian management can fit within their overall farming system. We have developed guidelines for the wool industry that respond to issues identified by growers and that reflect the context within which the industry operates. This approach has also been used in work we have done with cotton, sugar and dairy industries, and has confirmed for us the value in taking time to experience the culture of a particular industry so that the science can be tailored to meet the needs of different audiences and be meaningful to them.

## **Social infrastructure**

When people develop relationships they also develop processes of interaction, and sometimes organizations to facilitate the maintenance of those relationships. The National Riparian Lands R&D Program has always been a small player in NRM, so we have tried to build on existing networks by making our products so that they can 'slot' into established processes. For example, our River and Riparian Management Fact Sheet series is used in packs of information sent out by Rivercare officers, wool, dairy, cotton and sugar industry liaison officers and, more recently, the fertilizer industry extension officers. This is a great outcome for us, as we like our products to be delivered to people by those that know them and the context within which they are working. Ideally, we like our products to be interpreted by others so that they have meaning attached to them prior to landing into an already overcrowded mailbox or in-tray. We have used this approach throughout the life of the National Riparian Lands R&D Program and hope that, as a result, our product will continue to be used despite the Program itself no longer being there to support that activity. We have been very mindful of the legacy of the Program, and have developed products that have back-up built into them.

Through our Land Water & Wool Program we have invested in the social infrastructure of the three regions we were working in. This investment has taken the form of documenting the history of wool growing through the stories of local wool growing families. The wealth of information that has been gathered through this process has been amazing, and we have used the insights it has provided to develop products that have a unique regional flavour. The stories also highlight the importance of 'sense of place' and what it is that motivates someone to undertake river and riparian restoration. When we started with our Land Water & Wool project we were told that economics was the driver for change, however, by listening to stories and developing relationships with local communities, it became clear that this was not the case. Instead, it generally came down to a feeling, for example, of wanting to leave their 'place' in good condition for future generations, or wanting to preserve the special 'place' where they went fishing with Dad. Someone's special 'place' is integral to their identity, so it is vitally important that it is taken into consideration before recommending changes to the way they do things on

their farm. Emotion is what drives people to do most things, and by taking the time and allocating the resources to understand the socio-cultural context within which our woolgrowers lived and worked, we were better able to meet their needs and to tailor our research so that useful information was produced for them.

'Places' don't have to be physical, they can also be 'virtual'. The National Riparian Lands R&D Program has tried to create a 'place' for people to turn to for advice and assistance by providing a consistent look and feel through images such as the River Landscapes poster, terminology, and by having the same people delivering messages about how best to manage riparian areas. The Program has tried to have 'places' for interaction, be they workshops, the website, *RipRap* or catching up with people at conferences. In this way, 'place' can be used to connect people across Australia without necessarily having to be in the same place at the same time. We have also 'placed' people within new networks, whether that be through meeting others at a workshop, becoming a subscriber to *RipRap*, or accessing information off our website. These are examples of how to invest in social infrastructure and we believe it is often the missing link that prevents good science or government objectives being translated to on-ground works or improved management. Development of the social structure needed for NRM should be included in project plans, proposals and recognized in funding programs.

### **Technical information**

High quality, technically rigorous science that is able to be applied, has been the signature of the National Riparian Lands R&D Program. Without good science underpinning management recommendations, there can be little confidence for the end-user that the required outcomes will be achieved. We have gone to considerable effort to produce science in ways that make it meaningful for people. We have done this by listening to our end-users, experiencing the issues they are dealing with, and working with them to develop products that meet their needs. We have recently produced a 'Legacy CD' that has over 40 publications on it, with powerpoint presentations on the 8 top management issues for riparian land owners, and with interactive catchment diagrams and do it yourself training programs. We also have a 'virtual workshop' on our website where people can log in and listen to our researchers explaining their findings. This is all very important, but without the 'people' and the 'social infrastructure' elements previously discussed, our products would not be used. It is interesting that the outputs under technical information are the most easily measured, yet often the least effective if not supported by strong social infrastructure and relationships with others. We are hoping that the products we have developed through the National Riparian Lands R&D and Land Water & Wool Programs will continue to be used and supported as a result of the investment we have made in the people and the social infrastructure that are the key to this occurring.

### **Conclusion**

Our experience over the past 13 years in river and riparian management has demonstrated, if demonstration were really needed, that although good science is an essential prerequisite to improved NRM in Australia, on its own it is not enough. Researchers and R&D programs must recognize this so that science can be better linked into the other 4Ps that must be addressed for changes in land use and management to occur. Equally, NRM funding for programs and projects should be giving much more attention to all the aspects of relationships discussed here, and ensure that resources are directed to those components of capacity that are assessed to be lacking. By investing in relationships and building capacity we can ensure resources to translate into results.

### **References**

- Lovett, S. (2004). *Capacity building and knowledge exchange methods for community-based river and riparian management*. Land & Water Australia travelling fellowship report (web only [www.rivers.gov.au](http://www.rivers.gov.au)).
- Lovett, S. (2006). Managing knowledge for improved natural resources management outcomes. *Proceedings of the Vegetation Futures Conference*. Greening Australia.
- Thomson, D., & Pepperdine, S. (2003a). Building capacity for river and riparian restoration. *RipRap* Edition 24, Land & Water Australia.
- Thomson, D., & Pepperdine, S. (2003b). *Assessing community capacity for riparian restoration*. Land & Water Australia.