


# Understanding communities: strategies to support interaction of social and natural systems in the Condamine Catchment

	Condamine Alliance - Penny Hamilton, Henrietta Jukes, Jason Huggin The University of Queensland, School of Natural and Rural Systems Management - Professor Helen Ross (Project Manager), Ken Keith, Associate Professor Janelle Allison
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## Overview

Condamine Alliance, as the peak body on the eastern Darling Downs for generating action under the regional approach to natural resource management (NRM), identified a need for engagement with its whole community in order to achieve effective NRM. This SE03 collaborative project between Condamine Alliance and The University of Queensland was developed to help Condamine Alliance understand the communities within its region.

The principal objectives were to understand rural communities as social systems interacting with natural systems, and provide a basis for the community to develop strategies for sustainability, integrating natural resource management with economic and social considerations. The project also aimed to develop a process by which other regional bodies can explore directions for sustainability.

The approach combined research with community development. Through two case studies (Pittsworth and Warwick) researchers facilitated a process to identify the structure and networks of each community, and to explore trends that impact on each community's sustainability. After identifying the wide range of service, social care, sporting, industry, educational, youth, religious and environmental groups in the community, researchers invited representatives from selected organisations to take part in a community forum.

The forum identified networks, trends in social context, and community goals that might be strengthened through new alliances on activities, with particular emphasis on actions that benefit natural resource management. Analysis was followed by a report-back session at which key issues and suggested collaborative actions were discussed.

A literature review examined community sustainability, social network analysis, social context analysis, and recent social and economic studies relating to Pittsworth and Warwick. Community profiles were also prepared for both Pittsworth and Warwick, covering historical background, political and social resources, culture and attitudes, socioeconomic situation, and relations with the biophysical environment.

Researchers found that both communities have many organisations and levels of voluntary activity, but very little of this connects with the environment. NRM bodies are on the periphery of the networks of community organisations. Trends and their implications include the pending impacts of rural subdivision on cultures, behaviours, and natural resources; and pressures on water resources.

To Condamine Alliance, the project has highlighted that NRM is a low concern in public thinking. There is a need to recognise, and work towards changing this. The issue is with small towns, not necessarily with the farming community. Condamine Alliance has found the analysis valuable for understanding the diversity of the communities it needs to work with, and in identifying the reasons for particular challenges it has been experiencing. The project has opened up multiple opportunities for action on NRM, involving various possible partners. These are documented in the team's full report.

## Conceptual and theoretical foundations

Condamine Alliance identified a need to engage its whole community in order to achieve effective NRM. It understood that a whole-of-community response to NRM is required to ensure that management of catchment resources inspires changes in resource use that can be sustainable for the future, and also impact on the social and economic drivers of the community. While diverse voluntary and agency activities are supporting NRM in the region, the scale of change required to meet the major environmental challenges suggests that landholders and entire communities need support to sustainably address these to ensure the viability of farms and communities.

This need for engagement required far greater understanding of the communities in the catchment, particularly those not directly involved in NRM activities. This collaborative project explored an innovative process to understand Darling Downs communities, and how they are connected with natural resources. The project recognised the need to explore the potential for communities to achieve improved sustainability through enrichment of their internal social capital. It also recognised that the best strategies for NRM can only be designed through understanding the communities concerned, and their aspirations, and working in partnership with them.

The project aimed to:

- understand rural communities as social systems interacting with natural systems.
- identify the roles and influence of women in rural communities, and opportunities to enhance these.
- provide a basis for the community to develop strategies for sustainability, integrating NRM with economic and social considerations.
- provide a process by which other regional bodies can explore directions for sustainability.

Our underlying premise was that applying Granovetter's (1973) 'strength of weak ties' theory to relationships among organisations could mobilise latent enthusiasm within apparently over-committed communities.

Granovetter argued that while strong social links provide needed social support, drawing on weaker ties proved more valuable for certain social purposes, such as locating employment. He exposed the often 'root bound' nature of strong dependency linkages; with limited awareness of, and resources to make use of, opportunities outside a narrow network domain. Bringing this theory to the NRM domain suggests that strengthening weak linkages might open up new ways of approaching NRM and create opportunities for new alliances.

To identify common points of community concern as a reason to establish better links, researchers modified a social context analysis approach advocated by Earle and Fopp (1999) so that it could be used to stimulate community participation. Social context analysis enables community members to take a holistic overview of trends and their implications in the various structures or institutions ('shapers') that make up a community. The implications lead to resolve for community action. The modified process was named STIR (Shaper, Trends, Implications, Resolve).

## Methodology

The approach to this study combined research with community development. Through two case study local government areas (Warwick in the upper catchment, and Pittsworth at mid-catchment) researchers facilitated a process to firstly identify the structure and networks of each community, then explore trends that impact on the sustainability of each community, in order to find common interests for linked action towards sustainability.

The approach for each case study was to:

- form a working group comprising the researchers, representatives of key organisations, and other stakeholders who can identify community networks and personnel.

- conduct community mapping to identify social organisations, identify key people in each organisation, and understand the overall social context.
- invite representatives from each organisation to take part in a community workshop aiming to identify networks, trends in social context, and organisational goals that might be strengthened through alliances on activities that benefit natural resource management.
- carry out additional interviews as necessary to record the views of organisation leaders who were not at the workshop and who were considered key links in the network.
- identify, from the social network analysis, strong and weak linkage patterns and provide feedback to the community on opportunities for alliances.
- support community follow-up on ideas for cooperative natural resource management actions.

For each study area, a list of organisations covering wide community interests was compiled and then used to prepare invitations for a workshop. There were two main parts to the workshop process:

### **Identification of linkages between organisations**

This was done in two ways: qualitatively by having participants show links to other organisations on a large sheet of paper spread on a table, using felt pens of different thicknesses and colours to represent the strength of linkage; and quantitatively by asking participants to rate (on a 1 to 4 scale) the frequency, importance, and mutuality of contacts with other organisations.

### **Social context analysis(in its modified version developed as a community participation tool—STIR)**

Participants were asked to work in small groups to select some of the ‘shapers’ of concern and discuss trends, implications and resolve (i.e. what can be done by a community). Participants, working in small groups, completed STIR sheets for population, natural assets and then some of the other options of their choice—economy and local industry, technology, education, family, religion, social class, beliefs and attitudes, and leisure. The small group reports were discussed in a plenary session and common themes sought.

A summary and conclusions by the research team then drew together thoughts on what could or needed to be done. This process allowed for the community to move in directions they thought needed attention for sustainability—social, economic, or environmental—without confining the agenda to environmental issues.

Participants received a record of the workshop output soon after their workshop.

Cluster analysis, carried out on the quantitative linkage data using the Win-PATN software, produced tree diagrams (dendograms) and three-dimensional maps of separation between groups (ordination). The dendograms were the primary source of interpretation of strong and weak linkages among organisations; with the ordinations, felt-marker maps, and discussion with key community members used to qualify these interpretations.

Based on the social context analysis and consideration of current and potential linkages, several projects were identified that would work best through linking a number of community organisations. These were proposed to participants at a report-back workshop where they were shown the analysis of information from the workshop, and discussed potential ways forward. This information, together with comments about the connectedness of various community sectors, was later conveyed via a short report to leaders of all organisations that had been invited to participate.

## **Partnership-based research**

Condamine Alliance has learnt, through a combination of its research projects (including state-level investment projects, and especially SE03), that social and economic sciences are very

specialised. Regional bodies tend to have staff trained in biophysical sciences, but do not usually employ specialist social and extension scientists. They have now recognised the extent of difficulty involved in making good social science decisions. The challenge is to improve the status of the social sciences to match their significance to the biophysical sciences NRM planning.

Condamine Alliance also observed that SE03 has been somewhat separate, with teams even in the same towns not necessarily in communication. The next logical research step is to have social sciences involved more directly in what is happening in the catchment, whether by collaborating in research involving other disciplines, or being involved more directly with management actions.

The project confirmed for Condamine Alliance why it had been experiencing certain types of challenge with the two areas studied (see below). The research was very useful in explaining a complex situation. It has enabled Condamine Alliance to consider their community engagement strategies with far more sophistication.

Both research partners believe that the process ran smoothly. The Condamine Alliance staff who initiated the idea were planners, and hence may have had a greater awareness of their social information needs. According to the researchers, strong relationships were developed from the beginning, despite the rapidity of the first application process, and maintained throughout. Researchers felt that the staff turnover within Condamine Alliance had no noticeable effect on the project, and communication was maintained equally at head office and field level within Condamine Alliance. Reporting requirements were handled smoothly on both sides.

This project led to a relationship with The University of Queensland Gatton, which both parties value. So far, two fourth-year team research projects have been conducted for Condamine Alliance, and Condamine Alliance is implementing the first of these. It has led to the industry placement of two students, both producing excellent reports, and one has been employed part-time by Condamine Alliance. Both parties expect to continue to develop the relationship. The discussion to prepare this document expanded into a discussion of new mutual research possibilities, including repeating parts of this project at three-yearly intervals, since the information provides an excellent baseline against which to evaluate Condamine Alliance's progress with communities.

The project team's discussion centred on expanding from this project, rather than providing feedback to the designers of SE03. The key opportunity is to expand the research more directly into the catchment and its activities, and into wider partnerships. The conclusion for SE03 design is that the partnership model works well.

## Applying project findings

Researchers reached the following conclusions about the process:

- Workshop participants generally found the workshop process interesting and worthwhile.
- More groundwork through personal contact rather than written communication appears to be needed to encourage commitment to workshop participation. (Complete participation in a workshop is rare, but this limitation is offset by the benefits of personal interaction in workshops).
- A single workshop event seems unlikely to generate community action; more intense follow-up than that provided in this project design, budget, and timeframe appears to be needed, over a longer period. This will require either explicit facilitation, or internal champions for ideas to emerge within the community. Condamine Alliance is now using the project results to reconsider its ways of engaging with these communities.

Researchers drew the following conclusions about the social systems and natural systems:

- Both Pittsworth and Warwick have many organisations and high levels of voluntary activity, but very little of this connects with the environment. NRM bodies are on the

periphery of the networks of community organisations and thus have few other community resources to ally with. This suggests the NRM bodies do not make a strong contribution to community identity; perhaps this contribution can be explored through developing a regional 'sense of place'.

- Trends and their implications related to natural assets include the pending impacts of rural subdivision on cultures, behaviours, and natural resources; and pressures on water resources.
- Many saw individual people as being connected, rather than organisations. This questions the basic premise of the study—that community action for natural resource management can be greatly enhanced by strengthening weak linkages between organisations. One way forward is for processes to work on both levels, using connections between individuals to open connections between organisations, which can turn interest into larger-scale activity.

This project has enabled Condamine Alliance to understand the context it is working in. As a result of this study, it has recognised a need to review its strategies in working with these communities to overcome some challenges that have arisen in implementing key plan issues in these places. Local government was shown to be important within social networks in both main communities, confirming the importance of working on this relationship. Condamine Alliance observed that the local governments are comfortable in their roles, but not comfortable with NRM.

The project has provided invaluable baseline information, and could be repeated at intervals of, say, three years to enable evaluation of progress. Condamine Alliance would also consider using the methods as a galvanising process in communities that seem ready.

Condamine Alliance recognises it does not have the skills to conduct social research of this nature, and, under its business model, seeks assistance with research rather than attempting to conduct its own.

## Regional implications

To Condamine Alliance, the project highlighted that NRM is of minor concern in public thinking. There is a need to recognise and change this. Condamine Alliance found the analysis valuable in understanding the diversity of the communities it needs to work with, and in identifying the reasons for particular challenges it has been experiencing.

The project has highlighted multiple opportunities for action on NRM, involving various possible partners. These are documented in our full report.

Condamine Alliance and at least one shire council have a strong interest in pursuing the environmental implications of the peri-urban population phenomenon, which this project shows to be affecting land ownership and management and social integration, while bringing some economic benefits. Community engagement is vital, but difficult, with this group. The role of local government is important, for instance, in approving future subdivisions. Strategies need to be developed with care; in one community, there is resistance to supporting the peri-urban population, suggesting a need to explore perceptions further.

One challenge is that community organisational activity is rich, possibly saturating the available capacity, but very little of it is directed towards NRM. Strengthening the capacity for community-based activity in NRM is highly important, through greater levels of direct support and support for building alliances with other organisations.

Both direct engagement processes with landholders, and engagement, support and influence through organisations such as Landcare, are important to achieve NRM plan activities. Without these, on-ground environmental improvements cannot occur.

## Tools

### 1. Felt marker exercise

The felt marker exercise is easy to set up and interpret, was enjoyable for workshop participants, and was a useful for starting consideration of inter-organisational links. However, it did have problems for researchers: all groups need to be at the workshop for an accurate picture of their connections; it can get very messy; and there is strong chance that some people will mark a linkage because of personal connections rather than organisational connections.

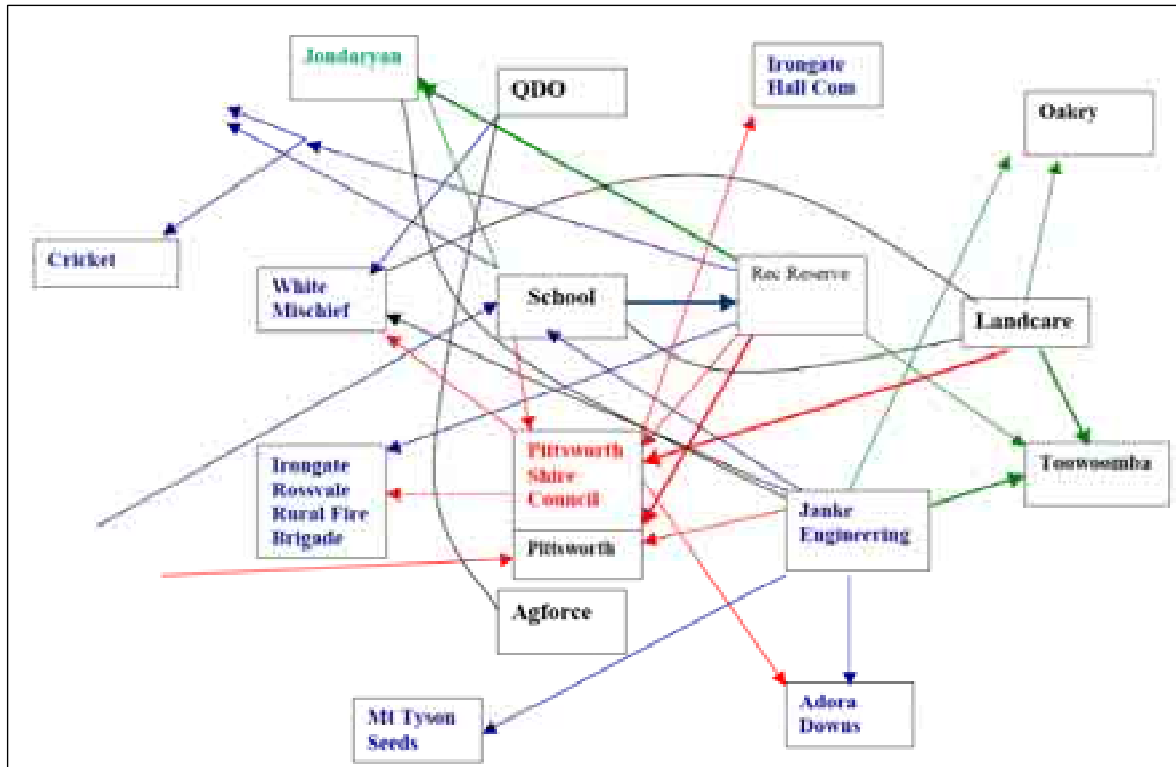


Figure 1. Community network diagram (Keith and Ross 2005, p. 73)

### 2. Quantitative analysis of contact between organisations

This analysis was based on rating sheets for the frequency, importance, and mutuality of contact between organisations, combined with quantitative cluster analysis using Win-PATN (a multi-dimensional scaling software program).

The dendograms (tree diagrams) produced by the program show degrees of closeness or distance among organisations. This method offers more scope for interpretation than the first, and is intuitively more meaningful, as the rating sheet may have looked rather formidable and there was some variation in the effort put into completing the ratings for all linked organisations. The dendograms provided valuable visual information that could be used to discuss opportunities to strengthen linkages or to speculate on why things did not appear as expected.

However the accuracy of the interpretation cannot yet be guaranteed. (There were flaws in trying to collect the ratings data during a somewhat rushed workshop, but attempting to redress this through individual interviews with those missing created inconsistencies with the level of information collected at the workshop.) Further research is worth pursuing, but is perhaps less likely to be applied by regional facilitators.

### 3. Shaper, trends, implications, resolve (STIR) community participation tool

The social context analysis featured a new approach to community engagement to set goals for cooperative community action (the STIR process). The process allows a community to choose to deal with social issues such as health, youth employment, aged care, or economic development issues, as well as natural resources. That is, the process is about community sustainability rather than just natural asset sustainability. It encourages all community organisations to participate in solutions even though the issue may initially appear to be only loosely linked to their core objectives.

The STIR process appeared to operate successfully at the workshops, but did not generate enthusiastic community action (which may have been too much to expect from a single event). Perhaps more key community leaders needed to be approached personally before the workshop to generate enthusiasm for further action, or perhaps more stimulus than a single workshop was needed.


During the debriefing between the parties in preparation for the May 2006 SE03 forum, Condamine Alliance suggested that these processes could work better in communities that were under greater pressure to solve problems (both case study communities were experiencing modest growth), and in communities with different social structures and needs. Both methods had served Condamine Alliance’s needs very well, by showing why this regional body was experiencing challenges in working with each of the two main case study communities.


**4. Community profiles**

These profiles were developed for three communities within the regional body’s jurisdiction—Mt Tyson, Pittsworth and Warwick. They provide a useful template for community profiling elsewhere.

**References**

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 Granovetter MS 1973, ‘The strength of weak ties’, *American Journal of Sociology*, vol. 78, no. 6, pp. 1360–1380.  
 Keith, K and Ross, H 2005, *Understanding Eastern Downs communities: social networks and natural systems*, The University of Queensland, Gatton.

	<ul style="list-style-type: none"> <li>• Felt marker exercise to map community networks</li> <li>• Quantitative analysis of contact between organisations</li> <li>• Shaper, Trends, Implications, Resolve (STIR) community participation tool</li> <li>• Community profiles</li> </ul>
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	<p>Keith, K and Ross, H (University of Queensland), Huggins, J, Hamilton, P and Jukes, H (Condamine Alliance) 2006, <i>Understanding communities: strategies for supporting interaction of social and natural systems in the Condamine Catchment</i>, The University of Queensland, Gatton.</p> <p>Keith, K and Ross, H 2005, <i>Understanding Eastern Downs communities: social networks and natural systems</i>, The University of Queensland, Gatton.</p>
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	<p>Professor Helen Ross          The University of Queensland          School of Natural and Rural Systems Management          Gatton, Queensland, 4343          Phone: (07) 5460 1648 or (07) 5460 1472          Email: hross@uqg.uq.edu.au</p>
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