

# Network Analysis in Agricultural Extension

*There is a view that research and extension should not be seen as separate processes involving distinct institutions which must somehow be linked. Rather, scientists, specialists, extension workers, consultants and producers should be seen as participants in a single agricultural knowledge and information system (AKIS). At a recent conference in New Zealand, Senior Project Officer, Brendan Doyle, argued that this perspective offers new insights into the way in which technology transfer occurs, and new ideas as to how to increase the rate of adoption of new ideas and techniques in farming.*

## Background

In 1996, the Centre trialled the use of social network analysis on a large multi-site regional research and extension project in the temperate high rainfall zone of south-eastern Australia. With this approach, the people and organisations participating in the project can be described as network members. Starting with the central person, a list of network members can be compiled by creating a record of each person's contacts with other people about the research site. This information can include for example, the occupation of people contacted, the frequency of contact, how influential the person is and subjects discussed. From this base information, and using appropriate software it is possible to quantify a series of social networks, one for each subject area discussed.

## An example of network structure

Figure 1 displays the network associated with the discussion of research objectives at one of the research sites studied. In this figure, the members of the network have been assigned a label designating the research site and their occupation and their position in our database. Network members' opinions about the research site generally were gauged using five questions that sought to determine their degree of satisfaction with the results of the research. A green diamond shape indicates that the member generally holds a favourable opinion of the research program at the site. A yellow ellipse indicates a neutral view while a red rectangle signifies a generally unfavourable opinion.

The arrows in the figure represent the reported influence of network members on each others' opinions about the research. The arrowheads point in the direction of the person who is influential. For example, the researcher A.RES.33 is influenced by a number of other network members such as project technician A.TA.40, district agronomists A.DA.23 and A.DA.25 and local producer A.FARM.75. Examination of the figure shows that A.RES.33 has identified all those in the lower portion of the diagram as being influential. Similarly, A.RES.33 influences A.DA.25, A.DA.23, A.TA.40 and A.FARM.67. In these cases, the lines between members with an arrowhead at one end only designate one-way influence relationships. Where an arrowhead appears at both ends of a line between two members, this designates two-way influence relationships. Each member has identified the other as influential on their views about the research.



