

Preparing the Ground: Social Research for the Facilitation of Sustainable Agriculture

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Abstract

'Facilitating sustainable agriculture' is an agricultural extension paradigm based on farming systems practice and the actor-oriented perspective on rural development. The challenge for agricultural extension is to facilitate a convergence of conflicting interests within a forum governed by the principle of communicative rationality. An initial stakeholder analysis is advised as a first step to secure the basis of facilitation. The recommended analysis would identify the diversity of interests pertinent to the issue of sustainability and the actors required for a successful forum. However, there is an absence of any coherent guidelines for conducting such an analysis. This paper then, presents guidelines to conduct an appropriate preparatory analysis to inform the facilitation of sustainable agriculture. An ethnographic approach is advocated for two reasons. Firstly, it is relevant to the systems view of sustainability as it grasps the diversity of values, priorities, goals and interests that give meaning to the issue of sustainability in a given agricultural landscape. Secondly, the approach is fully informed by the actor-oriented perspective on rural development. Thus the preparatory analysis presented in this paper is consistent with both theoretical influences shaping the extension paradigm to facilitate sustainable agriculture.

Introduction

In this paper we consider an agricultural extension paradigm that serves as a guide for the facilitation of sustainable agriculture. We begin by discussing the theoretical influences shaping the paradigm in question. Firstly, we outline the five interdependent components that constitute an 'ecological knowledge system', or EKS. We then turn to a second influence, namely, the actor-oriented perspective on rural development. This sociocultural school of thought provides us with the concept of agency. We consider the place of this concept in the EKS and in the actor-oriented perspective. The review of theoretical influences prepares us to move towards the process of facilitating sustainable agriculture. The process begins with the recognition that sustainability is best understood with reference to the various values, priorities, goals and interests apparent in a given agricultural landscape. The consequent contestation associated with sustainability, and the need to facilitate a shared understanding of the issue, presents a challenge for agricultural extension. Advocates of the EKS recommend a preparatory analysis to secure the basis of facilitation, but fail to provide any guidelines as to how such an analysis might be conducted. This critical omission is the central concern addressed in this paper. Our main discussion then, involves a consideration of how an appropriate preparatory analysis might be conducted. The argument presented in this paper is that we can conduct the recommended analysis by employing the actor-oriented perspective on rural development as a framework of inquiry. We discuss objectives and key concepts that provide a focus for the proposed analysis, and state questions being addressed in current research. Methodological guidelines are then offered to enable a credible sociocultural analysis capable of generating information that is directly relevant to potential agricultural extension agents aiming to facilitate sustainable agriculture.

An Ecological Knowledge System

An agricultural extension paradigm to guide the facilitation of sustainability is presented in *Facilitating Sustainable Agriculture* (eds. Rölting and Wagemakers 1998). The paradigm combines farming systems principles and a perspective from the sociocultural analysis of rural development interventions, namely, the actor-oriented perspective. In introducing the paradigm, contributors state "we accept systems thinking as a necessary holistic approach to complex issues such as the sustainability of agro-ecosystems" (Rölting and Wagemakers 1998, p. 16). Sustainability is regarded as a property emerging from the dynamics of a 'soft system' (Woodhill and Rölting 1998). The facilitation of sustainable agriculture is encapsulated in the presentation of an "ecological knowledge system" (Rölting and Jiggins 1998), or EKS. This is comprised of five interdependent components:

ecologically sound farming practices and particular modes of facilitation, learning processes, institutional arrangements and policy frameworks.

Ecologically sound farming practices that maintain and/or enhance the productive capacity of the natural resource base are regarded as prerequisite to sustainable agriculture. Pretty (1998) provides examples of such practices: the reduction and improved targeted deployment of external inputs, managing biodiversity for pest control, production cycles for soil health and individual farms for the enhancement of wider landscapes.

‘Transfer of technology’ extension is deemed inappropriate for facilitating such practices due to their increased complexity relative to practices associated with conventional agriculture and the need to address issues of scale and structural constraints (see also Barr and Cary 2000; Vanclay and Lawrence 1995). The principal focus here is not the technological development of individual farming enterprises. It is argued that in addressing sustainable agriculture, extension agents need to work with farmers and others in order to facilitate “ways forward which emerge from interaction amongst stakeholders, based on shared perspectives, shared ways of making visible the state of the environment, shared strategies and collective decision making” (Röling and Jiggins 1998, p. 287).

The facilitation of interactive learning experiences draws upon a number of principles and strategies. Learning experiences revolve around a collectively defined agenda, stakeholder exchange, trials, demonstrations and the use of tools and aids that promote the value of experiential or “discovery learning” (Röling and Jiggins 1998, p. 292). A further key principle is that of social learning, a line of inquiry employed in previous extension studies (see Rogers 1983, pp. 304-311). The EKS definition of social learning is as follows: “a positive belief in the potential for social transformation based on: critical self-reflection; the development of participatory multi-layered processes; the reflexive capabilities of human individuals and societies; and the capacity for social movements to change political and economic frameworks for the better” (Woodhill and Röling 1998, p. 53). The notion that this social learning project is achievable is based on a conviction that stakeholders can “move from strategic (manipulative, self-seeking) to communicative rationality in [their] dealing with others” (Woodhill and Röling 1998, p. 66).

Learning groups established along such ambitions and the networks linking them together are considered to be an important aspect of the institutional arrangements supportive of sustainable agriculture. These linkages, or platforms, are envisaged as spanning local-global landscapes. Additional institutional features include the support of activist bodies such as consumer and environmental groups. The ability of farmers to capture increasing revenue from value-adding activities, rather than these rewards flowing off-farm, is also regarded as an important means to support sustainable agriculture (Röling and Jiggins 1998, pp. 296-298).

Increasing the profitability of sustainable production lies at the heart of favourable policy frameworks. Current market conditions and policy contexts do not favour ecologically sound practices (Pretty 1998). This problem is addressed here in a call for the development of incentives based on two concepts. “Either environmental costs are somehow internalised so that the market automatically ensures ecologically sound practices, or the reward is negotiated amongst stakeholders” (Röling and Jiggins 1998, pp. 299). Sustainable agriculture must be a profitable endeavour for farmers.

Overcoming structural constraints to sustainable agriculture is also addressed in the EKS with reference to the concept of individual and institutional agency. The central concept of agency is employed to address issues of scale, purposeful collective learning and action. “We have singled out as a key issue the need to *create agency at higher levels of social aggregation*” (Woodhill and Röling 1998, p. 66). What is meant then, by agency? Here, the concept is employed to argue “that actors have considerable room to manoeuvre in realising their ‘projects’ even in the most oppressive situations (Long 1984; Long & Long 1992; Giddens 1984, p. 16). Such an actor-oriented perspective allows for social learning as a potentially powerful force for change” (Woodhill and Röling 1998 pp. 53-54). While advocates of the actor-oriented perspective may disagree with this assertion, they would nonetheless concur that the concept of agency is central to their standpoint. In order to appreciate the

influence of this standpoint upon the extension paradigm in question, we now discuss aspects of this sociocultural perspective on rural development interventions.

An Actor-Oriented Perspective on Rural Development

The actor-oriented perspective on rural development combines sociology and anthropology in a distinctive analytical framework (den Ouden 1997). It is associated primarily with Norman Long (2001) and contrasts with the system thinking previously discussed in that it does not amount to action research (Long 1992a, p.271). This is sociocultural analysis, and as such, the objective is to gain insight into sociocultural dynamics directly and indirectly associated with processes of rural development

Analysis is oriented towards the social actor, rather than social structure because, it is argued, processes of rural change cannot be adequately understood with reference to “essentialist and reified interpretations of globalisation” (Long 1996, p. 39), nor other forms of “inexorable structural logic. In a fundamental sense, they can only result from the interactions, negotiations, and social and cognitive struggles that take place between specific social actors” (Long 1989a, pp. 222-223). The logic of structure fails to take account of the various and unexpected forms of social action apparent in agricultural landscapes (Long 2001, pp. 61-63; see also Van der Ploeg 1997). Orientation towards the actor does not equate with a denial of structure, but rather, represents an attempt to place ongoing social action at the forefront of analysis, and by doing so, obtain an understanding of the dynamic relationship between social actor and structure.

“At the heart of the concept of social actor, then, is the notion of ‘agency’” (Long 1989a, p. 223). This amounts to a recognition that “individuals and social groups are, within the limits of their information and resources and the uncertainties they face, ‘knowledgeable’ and ‘capable’; that is, they devise ways of solving ‘problematic situations’, and thus actively engage in constructing their own social worlds” (Long 1992b, p. 33). It is important to note here that in mobilising available resources to construct, maintain and enhance social worlds according to what they perceive to be their own interests, actors can unwittingly contribute to the problems and constraints confronting them.

Effective agency is understood to depend “crucially upon the emergence of a network of actors who become partially, though hardly ever completely, enrolled in the ‘project’ of some other person or persons” (Long 1992b, p. 23). It follows from this that sociocultural processes “involve the struggle between actors who aim to enrol others in their ‘projects’, getting them to accept particular frames of meaning, winning them over to their points of view” (Long 1992b, p. 27). Such an understanding of sociocultural change obviously resonates within the EKS given the emphasis on facilitating learning groups and networks for sustainable agriculture. Of course, understanding sociocultural dynamics from this perspective is one thing, intervening in ongoing social action to bring about those dynamics in an attempt to cultivate sustainability (or any other objective) is quite another. This brings us to the third aspect of our introduction. How does the process of facilitating sustainable agriculture begin?

Approaching the Facilitation of Sustainable Agriculture

As previously stated, sustainability is regarded as a property emerging from the dynamics of a ‘soft (ecological knowledge) system’. That is, sustainability is regarded as “the outcome of the collective decision-making that arises from interaction among stakeholders. Stakeholders are identified here as natural resource users and managers. A natural resource can be considered at the field, farm or higher level of aggregation” (Röling and Wagemakers 1998, p. 7).

There is then, no hard and fast definition of sustainability to provide a starting point for the process of facilitation. Rather, the process begins in recognition of the common thread running through various attempts to define sustainability, namely, an emphasis on “differing values, priorities and goals” (Pretty 1998, p. 25). These subjective drivers provide extension agents with something to get to grips with as they begin to approach the facilitation of sustainable agriculture. They offer a pathway into locally specific understandings and are therefore more practical than variously universal or imposed definitions.

However, the recognition of sustainability as essentially amounting to a constellation of differing values, priorities and goals requires the extension agent to be aware of the politically charged nature of the issue. This is not neutral territory. “The attractiveness (and the ‘dangers’) of the concept of sustainability may lie precisely in the varied ways in which it can be interpreted and used to support a whole range of interests or causes” (Elliot 1999, p. 6). Indeed, the contestation associated with sustainability is recognised within the EKS. It is argued that “securing agreement on what people shall take sustainability to mean for a given environment, is half the job of getting there” (Röling and Wagemakers 1998, p. 7).

How then, are we to work towards agreement, assuming one is possible? Röling and Jiggins (1998, pp. 303-304) suggest that the process of facilitation can begin by employing Soft Systems Methodology (Checkland 1981; Checkland and Scholes 1990), and continue with a Rapid Appraisal of Agricultural Knowledge Systems (Engel et al. 1994). However, given the complexity and contestation associated with the issue of sustainability, they accept the need for some sort of preparatory analysis. They do not, however, provide any clear guidelines as to how this analysis might be conducted. Another contributor to the EKS approach to facilitating sustainable agriculture suggests that an “initial stakeholder analysis [would] identify those social actors who need to be involved in the platform if it is to be successful ... this process is never finished, but in its initial phase it should start to scratch the surface of conflicting values and interests” (Campbell 1998, p. 240). This statement can serve to inform a research objective, but still, there is a lack of coherent guidelines to conduct the analysis.

A framework of inquiry capable of delivering an understanding of the various values, priorities, goals and interests pertinent to the issue of sustainability in conflicting and complex contexts, is the actor-oriented perspective on rural development. Such a preparatory analysis would be consistent with the sociocultural theory underpinning the EKS. The argument presented here is that a credible actor-oriented analysis can be conducted while generating information pertinent to a subsequent extension process aiming to facilitate sustainable agriculture. Guidelines for conducting such an analysis are provided in the following discussion.

An Actor-Oriented Analysis

The actor-oriented perspective is concerned with the analysis of how “rural development interventions and livelihoods are materialised and socially constructed through the interplay, contestation and negotiation of values and interests within specific domains and arenas of social action” (Long 1997, p. 2). This research objective is appropriate to the task we have set. Of course, the analysis we propose precedes the developmental intervention. The proposed analysis would therefore concentrate on the latter aspect of the research objective. That is, the intention would be to analyse the ongoing interplay, contestation and negotiation of values and interests amongst actors likely to be involved in a subsequent process of facilitating sustainable agriculture. These actors would include, for example, farmers and other stakeholders involved in research, development and extension processes, policy-making circles and regulatory bodies.

The research objective above provides us with two concepts that can assist in further clarifying the focus of the proposed initial analysis, namely, domains and arenas. Domains are defined as “areas of social life that are organised by reference to a series of interlocking practices and values ... a locus of certain ‘rules’, norms and values implying degrees of social commitment” (Long 1997, p. 5). The boundaries of domains are not set in stone, nor are they mutually exclusive. Rather, a degree of dynamic overlap would be expected. For example, extension services represent a diversity of interests ranging from public to private, and agricultural to environmental. There is therefore the possibility that the domain of a private service focusing on the production of conventional agriculture would have little in common with a public service focusing on the production of agroecological landscapes. Each of these extension domains will likely share more commonality of purpose with like-minded farmers than with their ‘partners’ in extension. This difference in extension domains will vary according to changing conditions, so that we can envisage a further weakening, or greater strengthening of the relationship over time.

The notion of dynamic overlap brings us to the concept of arenas. These are considered as “spaces in which contestation associated with different practices and values of different domains takes place or ... within a single domain where attempts are made to resolve discrepancies in value interpretations and incompatibilities between actor interests” (Long 1997, p. 6). The concept of arenas then, allows us to appreciate the struggle over ‘projects’ and the construction, maintenance and reconstruction of domains. Contestation does not merely occur between disparate domains, but also within domains as actors reflect upon the integrity of values and practices relative to changing conditions. For example, we might appreciate the considerable reflection and negotiation involved within disparate extension domains as they strive to make their agricultural message more environmental, or vice versa, in order to generate and secure funds, win friends and influence people.

We should perhaps remind ourselves at this point that the aim here is to make sense of sustainability within a particular agricultural landscape with reference to these concepts, and in doing so, provide potential facilitators with information pertinent to a subsequent extension process. Bearing this in mind, we can reflect on the following research questions that might be addressed in the preparatory analysis envisaged in this paper:

1. Who are the key actors performing in the production of the agricultural landscape?
2. What core values inform the notion of sustainability in the various actor domains?
3. What notions of sustainability are being negotiated and contested in the various arenas?

These questions are being addressed in current research sponsored by the Cooperative Research Centre for Sustainable Rice Production (CRC Rice). CRC Rice aims to enhance the economic, environmental and social sustainability of rice-based farming systems in the Riverina area of New South Wales (see CRC Rice 2002). While this particular research endeavour is yet to reach the stage where findings can be presented, the process is sufficiently established to discuss the methodology being pursued. What does the doing of actor-oriented research involve? It is the practice of ethnography (Den Ouden 1997).

Sanjek (1996a) has described ethnography as a three-way operational system that sustains the anthropological endeavour, and discusses the process by which ethnography is practised. The process begins by identifying a specific study area that relates in some way or other to a particular anthropological ‘problem’, that is, an aspect of theoretical debate. In this instance, the wider debate to be addressed in this analysis would be the relationship between social actor and structure (see Dirks et al. 1994; Ortner 1994). This, of course, is of relevance not only to the discipline of anthropology, but also to the extension paradigm in question given its aim to overcome structural constraints to sustainable agriculture.

By immediately framing the research with reference to a wider anthropological debate, the ethnographer embarks on a comparative analysis. That is to say, the ethnographer is familiar with other studies conducted in similar and different contexts providing insight into, in this case, the relationship between actor and structure as observed in processes of rural development. This pre-existing body of work can be employed to make sense of the specific research problem we intend to address, and the subsequent insights that emerge from our proposed analysis (see Ferguson (1996) and Gardner & Lewis (1996) for a discussion of anthropological studies on development).

The comparative character of ethnographic research continues throughout the endeavour, and this enables an engagement with more specific areas of debate. For example, a reading of the extension paradigm in question encourages an exploration of the meaning of landscapes. Anthropological research into landscapes is, in general terms, a relatively recent area of activity. But nonetheless, it has already generated insights of relevance to the proposed analysis, as evidenced by the following argument. “Landscape is never passive. People engage with it, rework it, appropriate and contest it. It is part of the way in which identities are created and disputed, whether as individual, group or nation-state” (Bender 1996, p. 324). This statement is relevant to the understanding of sustainability presented in the EKS, and therefore provides us with more food for thought.

It is not just pre-existing academic work that shapes the comparative character of ethnographic research. Other issues of interest to anthropology will arise as research engages with actors in the study area. For example, we might encounter repeated everyday reference to notions of community in the agricultural landscape. Studies of community have a long tradition in anthropology (Rapport 1996). The ethnographer would draw on these to further the comparative project, advance theoretical debate, and last but not least in this case, to inform potential facilitators of a subsequent extension process aiming to develop shared and collective responses to the issue of sustainability.

These examples demonstrate that it is possible for us to maintain a comparative character in the proposed ethnographic analysis, and so provide a credible actor-oriented analysis from the perspective of anthropology, while generating information that is pertinent to the EKS approach to facilitating sustainable agriculture.

Furthering the anthropological credibility of the proposed analysis can be achieved by conducting fieldwork according to conventional ethnographic wisdom, “rather than the use of experimental method. One must go to where people are already engaged in interactions, problem-solving activities or routine social practice and negotiate a role or combination of roles for oneself, as participant-observer, active collaborator, adviser, etc” (Long 2001, p. 90). Interactive and problem-solving events of particular interest to the proposed analysis would be, for example, those moments in time where agents of farming, extension and research communities meet to consider responses to various problems in the agricultural landscape. By adopting a participant-observer role, the researcher records social action without, as much as possible, influencing events. “A fundamental principle of actor-oriented research is that it must be based on actor-defined issues or problematic situations, whether defined by policy makers, researchers, intervening private or public agents or local actors” (ibid.).

As indicated above, the participant-observer role, while necessary at the outset of research, can develop into a more active engagement as research progresses. Similarly, the researcher does not necessarily restrict analysis to ongoing social action, but can move towards shaping events whereby data is generated in more formal interview scenarios. Thus, Sanjek (1996a) describes six distinct phases of ethnographic fieldwork. The researcher begins by listening in to a diversity of everyday events in order to become familiar with the study area. In the second phase, the researcher begins to participate in these events by seeking clarification of recorded topics and opinions of specific interest to the analysis being conducted in order to begin assessing how they are perceived by actors in the study area. The third phase employs the enhanced sociocultural competence acquired by virtue of the preceding participant-observation to formulate tentative questions that are directly put to local actors.

In the fourth phase, the researcher begins to shape the events from which data will be recorded. That is to say, the researcher creates, in conjunction with specific actors, events aside from the everyday flow of social action in order to concentrate on what appears to be important to the analysis according to initial findings. Semi-structured interviews characterising this phase allow the researcher to sharpen the focus in preparation for the fifth phase. This entails more structured interviews focusing on specific topics, while allowing actors to respond freely, according to what they see as relevant to, or associated with, the topic. The sixth phase can involve structured interviews, questionnaires and surveys that seek to obtain precise responses from local actors. This final and formal fieldwork strategy is fully informed by a site-specific understanding of what is important, and why, given the previous activities of the researcher. It is based upon what the researcher has found on the ground, rather than on assumptions fabricated to direct fieldwork previous to the engagement with actors in the landscape.

The proposed analysis then, can be grounded in the everyday activities of farmers, researchers, extension agents, regulators and so on. Thus, the various values, priorities, goals and interests associated with sustainability can be grasped. The researcher would not enter the study area and start asking, ‘what do you think about sustainability?’ Rather, the intention would be to listen, observe, and learn how sustainability is experienced by local actors, how it comes up in everyday practice, how it is handled and moulded to fit with the domains apparent in the landscape, and finally, the role it plays in the contestation and negotiation of meaning.

Long (1989*b*, pp. 250-253) has suggested a number of research techniques that can be employed to enhance the collection and analysis of data pertinent to our inquiry. Of particular relevance to the EKS approach to facilitating sustainable agriculture, given the emphasis on establishing learning groups and the networks linking them together, is the recommendation to employ social network analysis. The task for potential extension agents would be eased if a prior knowledge of existing social networks were available. An outline of what the analysis of networks can do for us here is therefore provided to complete our discussion.

Analysing networks as part of the inquiry into the agricultural landscape would add to the comparative character of the ethnographic research. The study of networks has declined in anthropology given the demands it places upon fieldwork and the need to read findings with reference to other kinds of data, but Sanjek (1996*b*) argues that it nonetheless remains a valuable tool. Of course, it is not just anthropologists who have uses for network analysis. Previous extension studies have emphasised the role of interpersonal networks in influencing the adoption of innovations (Rogers 1983, 271-311). Employing network analysis in the inquiry would enable an engagement with these particular anthropological and agricultural extension debates. While this may be regarded as a worthy objective, the principle reason to employ network analysis is to enhance the collection and analysis of data pertinent to the preparatory analysis.

Long (2001, pp. 55-56) argues that network analysis can assist us in considering how embedded actors manage and cultivate social relations to negotiate problems, and so realise 'projects' that are perceived to be in their own interests. Networks are defined as "sets of direct and indirect relationships and exchanges (interpersonal, inter-organisational and socio-technical). They usually transcend institutional domains and link together a variety of arenas. Networks are characterised by flows, content, span, density and multiplicity" (Long 2001, p. 242). This definition merits further attention so as to clarify the nature of networks presented here.

The notion of direct and indirect relationships refers to the observation that while 'face-to-face' relations are obviously present in networks, actors are also connected to others indirectly by virtue of institutional structures and physical distance. For example, actors can be involved in indirect social relations with other water-users in a catchment that is subjected to the claims of an administrative body, or bodies (see Van der Zaag et. al. 2001).

Networks transcend domains and link arenas because of the notion of dynamic overlap discussed earlier. That is to say, actors can have more in common with those principally engaged in other domains, and so promote values associated with that domain as they negotiate and manage change within their institutional settings. We can also envisage disparate domains responding in a similar manner to a specific issue. For example, economists and environmentalists may engage in an alliance due to their mutual dislike, for different reasons, of subsidised agricultural production.

Networks enable and constrain the flow of sociocultural and technological resources between actors. This trade is based on anticipated responses informed by previous experience and reference to recognised formal and informal codes of behaviour. The content of networks refers to these normative expectations and regularity of interactive exchange. Span and density refers simply to the breadth and depth of networks. From this, we recognise not only that different networks oriented towards the same purpose can be more or less effective due to the range of actors involved and quality of interaction. It is also apparent that networks oriented towards diverse objectives display dissimilar forms. For example, networks seeking to mobilise information and other resources "are more effective when they are open-ended and span a large universe of options, whereas networks required for carrying out specific collective actions ... are usually close-knit with high levels of shared interests and agreed norms of practice" (Long 2001, pp. 55-56). Thus we can expect an array or multiplicity of networks in the study area, and an understanding of these would undoubtedly inform potential extension agents aiming to facilitate learning groups and networks to enhance prospects for sustainable agriculture.

Having outlined the conceptual basis for an actor-oriented social network analysis, we turn now to process in order to illustrate that theory can be put into practice. McCallister and Fischer (1983) provide guidelines appropriate to the purposes of the proposed inquiry. Their example of network

analysis is pertinent for a number of reasons. Firstly, it is “concerned with studying the ‘social worlds’ of individuals and their connections to social structure” (ibid. p. 75). McCallister and Fischer analysed the complete network of respondents rather than restricting the analysis to particular networks such as those involving family and friends. This strategy enables the researcher to avoid the problem of gaining a partial, and therefore somewhat artificial insight into the social world of the respondent. Pursuing such data with a mass survey is prohibitively expensive and places onerous demands on the time of researcher and respondent. McCallister and Fischer therefore devised an interview procedure capable of generating the required data from a single respondent in less than half an hour (ibid. 77). It is important to note that the procedure was devised to augment the kind of qualitative case-study research implied by the ethnographic approach to the inquiry discussed here (ibid. 76).

The interview procedure to conduct the network analysis was structured into four stages. Firstly, questions were posed that asked respondents to name those people “with whom they were likely to engage in highly valued interactions” (ibid. p. 79). In addition to identifying socially related actors, these initial questions also addressed the frequency of interaction. The interactions at issue here were those relating to personal matters, but the procedure is flexible enough to begin with a focus on alternative matters if this is required. Secondly, a number of questions are selected that “identified network members from a full variety of social contexts (such as work, the neighbourhood, and the family)” (ibid.). These questions obtained a fuller range of names. The researcher then works with the recorded list of names in the third and fourth stages of questioning that aim to obtain further information regarding the quality of the relationship between respondent and those named, and the status of those named. The responses were analysed relative to distinct locales of a community, and from this, the research found that networks varied in character and content across these locales (ibid. pp. 85-87). This finding suggests that networks in an agricultural landscape are unlikely to display uniform characteristics, not just because of the purpose of these networks, but also because of the peculiarities of place. Given this diversity, potential facilitators of networks in agricultural landscapes should be wary of adopting a singular approach to their task.

Conclusion

This paper has outlined the theoretical influences informing an agricultural extension paradigm designed to serve as a guide for the facilitation of sustainable agriculture. In considering the paradigm, a critical gap was identified. That is, an initial stakeholder analysis is recommended to secure the basis of facilitation. Such an analysis is deemed necessary because of the complexity and contestation surrounding the issue of sustainability. However, no guidelines to conduct a preparatory analysis are provided by advocates of the extension paradigm. This paper has provided guidelines to conduct such an analysis. The guidelines presented here are pertinent to the extension paradigm for two reasons. Firstly, the analysis is capable of grasping the various values, priorities, goals and interests that inform the meaning of sustainability in a given agricultural landscape. Thus, the analysis is pertinent to the understanding of sustainability offered by the systems thinking apparent in the agricultural extension paradigm. Secondly, the analysis is consistent with the actor-oriented perspective on rural development. That is to say, the preparatory analysis is fully informed by the second theoretical influence shaping the paradigm to facilitate sustainable agriculture. It would therefore be reasonable to expect that the consequent anthropological insights into ongoing sociocultural dynamics would be directly relevant to potential facilitators aiming to enhance prospects for sustainability in accordance with the agricultural extension paradigm discussed here. We would hope then, that the preparatory analysis would provide the relevant contribution from social science called for by Woodhill and Röling (1998, p. 47). Furthermore, the actor-oriented preparatory analysis presented in this paper can be conducted in such a way as to satisfy anthropological criteria for credible research into processes of rural development (see Den Ouden 1997; Gardner and Lewis 1996; Ferguson 1996). The findings and outcomes of such an analysis are not yet available, but current research into agricultural extension and the sustainability of rice-based farming systems in New South Wales is well under way. Watch this space!

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