ARGOS Working Paper No. 2

Social Research Compendium: Key Questions on Social Dimensions of Agricultural Sustainability.

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A follow-up to the Social Research Rationale outlining key topics and methods for operationalising the Social Research on Farm Practice in ARGOS

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Introduction

Following on from the Social Research Rationale, this document takes the rationale an important step further by developing a list of key research topics (and specific issues) that form a comprehensive list of research items that the Social Objective consider to be of interest.

Three general instructions are useful before going further into this document.

1) A comprehensive list of research topics is necessarily big. Like Objective 4, the general research process for Objective 5 is to start broad and use the first two years of data gathering to refine the topics down to a more focused set of issues and foci.

2) The topics are positioned to answer five very broad questions about our ARGOS farms:
> • *Who are they?*
> Describe the sociological characteristics of the participating farmers, households and enterprises.
> • *What do they think?*
> What is the positioning (or key ideas) of our participants in terms of a list of core concepts in the project?
> • *What is their capacity to act?*
> Even if people think a particular way, or want to do some things, individuals are nonetheless constrained in many ways. Social scientists consider this key issue to be central to any analysis: their *capacity to act*.
> • *What changes over the period of the project (and in retrospect)?*
> Both looking back in time, and through the period of the project, what are the key dimensions of change in the farms?
> • *What are the key influences on these changes?*
> What the key processes and 'sites of action' that influence farm activity, and which can assist us in understanding how more pro-active intervention to achieve change might be undertaken?

3) What gaps are left?
This document contributes to getting all the different researchers around the Social Objective clearly aligned and coordinated in framing up and delivering the next phase of research. It also helps to very clearly define the interests and foci of the social research for the other participants in ARGOS. However, maybe its most important task is to provide an opportunity for discussion around those points of interest that Objective 5 shares with the other Objectives, as well as where there are significant gaps as yet unaddressed by the project.

NB. This is not just a list of topics. By grouping the topics under the five general orientations towards enquiry in our Objective, many of the topics appear more than once (in slightly altered form or with a different angle of approach). Hence, there appears to be quite a bit of overlap at times, for which we beg the indulgence of the reader.

PART 1: WHAT?

1. Describing Farm Households using Standard Sociological Variables.

A key task in the social research component of ARGOS is to ensure that we have a robust and defensible set of social descriptors for our farm households. The following form a standard list of 'need to know' characteristics of our participants.

1.1 Age

A key sociological variable.

Key Issues:
• Are our panels representative of the wider age structure of the farm sectors? We need to check this.
• Is there a generational effect in relation to sustainable agriculture? Considerable wider sociological research indicates a difference in attitudes to the environment among young as against older people.
• Are younger farmers really more innovative?
• What is the relationship between age and 'local/indigenous knowledge' of farm environments?
• Ageing of farm populations is potentially an important indicator of the survival/sustainability of farm sectors. Much is made of the rapidly increasing average age of sheep farmers in NZ.
• Other family members (and other workers?) as possible research participants?

Methods:
• Age data (birth date) collected as part of quantitative surveys.
• As a key descriptor, age becomes a standard variable in all database queries.

1.2 Gender

A key sociological variable.

Key Issues:
• Theoretical claims that women are more pro-active in pursuit of environmental goals.
• Masculinity literature suggests that some farming masculinities render sustainable agriculture 'unthinkable'.
• Important questions as to the level of involvement (gender division of labour) in farm households. Level of involvement of women in production activities.
• Gendering of children; allocation of farm tasks by children's gender.
• Important questions as to the role of women v men as decision makers in spheres of farm activity.
• Possible gender significance in: key knowledge networks; relationships with off-farm organisations; relations with rural communities…
• Dare we raise issues about sexuality (NZ's prize winning BD farmers a few years ago are a lesbian couple in Northland)? Sexuality as a correlate to other

nature/society attitudes. I remember the Horticulture students at Lincoln being called the 'Hortie Homos'…

Methods:
• Gender data collected as part of quantitative surveys. (maybe leave sexuality issues out of this kind of data collection).
• As a key descriptor, gender becomes a standard variable in all database queries.
• Gender as key analytical category in qualitative surveys.
• ongoing discussion required on gender dimensions to social research process (number of household members interviewed, male/female balance), including issues of who comprises the primary unit of analysis.

1.3 Household Composition/Kin

Another standard descriptor of social data for farm households: numbering adults, children, kinship relations, other household members

Key Issues:
• What is the make-up of farm households? Is it a family farm?
• What stage of life cycle? How does this reflect farm capital and access to resources?
• Configuration of kinship in farm activities?
• Dynamics of intergenerational transfer. Do the ideas and practices of agricultural sustainability accumulate through intergenerational effects?
• Potential inter-relationship with ethnicity?
• Extras in farm households like WOOFERS.

Methods:
• Household composition included in initial quantitative surveys.
• Development of a typology of farm household composition.
• Database queries via typology of family vis other farm composition.
• Kinship as a potential investigative concept in qualitative surveys.
• National surveys.

1.4 Ethnicity

The term *race* is no longer used in polite company (race refers to the biological characteristics of different human groups – and is thus hopefully irrelevant to sustainable agriculture, while being somewhat more relevant to the incidence of sickle cell anaemia). Ethnicity is the open identification and practice of individuals in relation to participation within a culturally and historically delineated ethnic group (spot the boy who wrote an MA on ethnicity).

Key Issues:
• While ethnicity incorporates multiple ethnic groups, for ARGOS, the ethnicities involved are very likely to come down to constructions of the Maori/Pakeha binary. Thus ethnicity issues operate across Objectives 2 and 5.
• Not to entirely discount the small but influential group of European migrants on the second wave of organic agriculture.

• Ethnicity becomes an important broad category within the analysis of differing perceptions/positioning/subjectivity/identity questions.
• Ethnicity may become relevant in relation to issues of: local/indigenous knowledge; perceptions of landscape; nature/culture binaries; and many many more…
• Ethnicity is also relevant to 'capacity to act' issues for farm households. Different ethnic groups have differential capacity to act due to differing: kinship organisation; generational responsibilities; cultural expectations; institutional and property relations; structural discrimination.
• Ethnicity as a variable around farm work, farm workers (certainly a huge issue for horticultural labour internationally).

Methods:
• Everything Objective 2 decides to do.
• identification of ethnicity as broad descriptor in quantitative surveys.
• potential investigative concept in qualitative surveys.
• National surveys,
• May develop within a strategic interview framework – depending on direction taken in Objective 2.

1.5 Locality/Community Linkages

As a social concept rather than a 'real' geophysical space. People identify with a particular locality and sometimes position themselves socially according to perceived locality characteristics. This may be relevant analytically, but it almost certainly will be relevant for finding out which community the farm households are most integrated within. Farm households may be members of several different communities at various scales and relevant to particular social interactions.

Key Issues:
• Do 'locality relations' have an effect on sustainable agriculture? Are local social networks an important influence on farming practice?
• How are local networks operating? Does technology change this (ie. Internet).
• Do definitions of appropriate or sanctioned behaviour in localities tell us something about appropriate or 'thinkable' styles of farming.
• Does identification with locality, or degree of embeddedness in locality/sense of place, link to sustainable farm practice?
• Having clusters does give us the opportunity to compare the locality relationships of multiple farms.
• Are there wider hierarchies of identity around rural/urban?

Methods:
• Baseline reports.
• Identification of locality identification as broad descriptor in quantitative surveys.
• Potential investigative concept in qualitative surveys.
• Potential for more interactive tool to uncover community linkages.

1.6 Migration

Is important because of the effects identified in 1.5. Length of time living in a district, family history in a district, or even international migration, positions people in different ways to legitimise their actions (or think outside the square). Likewise,

this opens up some questions of the 'background' of some growers and how this influences their thinking about things like the environment and sustainability.

Key Issues:
• Legitimacy of persons in local community.
• Status.
• Conduit of new ideas.
• WOOFERS

Methods:
• Question in quantitative survey
• Possibly in qualitative survey.

1.7 Enterprise Characteristics/Management Structure

A somewhat broad and elusive descriptor and needs careful integration with Objective 3. Enterprise characteristics for sociologists roughly equates with characterisation of farm units by management structure: as family farms, corporate farms, leasehold etc… Much room for dialogue here.

Key Issues:
• Family farming versus other forms of farm structure is a very central issue for rural sociology. Hard to overstate how much we get theoretically exercised by this.
• Does family farming lead to more uptake of sustainable production than other forms like corporate farming?
• Under what conditions might absentee owners hinder/help the uptake of sustainable farm practices?
• The literature identifies leasehold as a barrier to sustainability.
• Family farm survival is a big theme in rural sociology. Could this transfer straight across to social survival/sustainability?

Methods:
• Baseline reports.
• Quantitative survey questions.
• National surveys,
• Potential investigative concept in qualitative surveys.

1.8 Labour force

Who does the work? And who does what? Will also include time allocation data.

Key issues:
• Who is the primary farm operator?
• Family labour vs hired labour.
• Does hired labour feel as strongly about values underlying the farm enterprise?
• Is retention of labour, or self-exploitation of family members, an indicator of sustainability/unsustainability?
• Farm labourers are an interesting group because their employment is more flexible than family members. You can sack them when times are tough. They often signal good/bad times in the enterprise.

• Training farm workers is a key constraint on sustainable farm practice. New skills etc…
• One classical sociological concept that doesn't come up much in ARGOS is Class. The relations between farm workers and farm owners is one area where class does come out. Mike Bell's *Childerly* study (mate of Hugh's) did argue that upper class folk in a UK community had a more hierarchical view of nature and human/nature interactions than lower class folk. Does that sound convincing that we should talk to farm workers… well… ummm…
• Lots of Objective 3 stuff on workforce…

Methods:
• broad description through quantitative surveys.
• important category for interrogating change through the data-base.
• work is a key concept for inclusion in qualitative surveying.
• Can't we just shovel most of this into Objective 3???

1.9 Education/Farm training

Easy and difficult. Educational attainment is a standard sociological variable. Farm training and skill is a little more slippery… This really only opens up an area that Farm Management needs to arrive and rescue us from…

Key Issues:
• *Greening Food* biennial surveys have constantly hammered away at the association between level of educational attainment and environmental attitudes or deployment of sustainable practices…
• What are the key education mechanisms operating around sustainable practice?
• What are the key knowledge sources/networks supporting sustainable practice?
• How do these flow around the household/farm enterprise?
• Who are the key sources of knowledge off-farm?
• How is information and new knowledge processed on-farm?
• What are the barriers that operate between knowledge and practice?
• What methods do farm participants use to learn/teach practical skills (ie. Things that aren't in books).

Methods:
• educational attainment via quantitative surveys.
• identification of learning processes in qualitative interviews.
• National surveys,
• Something more engaged and participatory… don't know what… yet!

1.10 Religion and Spirituality

An important issue in US studies, never researched in NZ.

Key Issue:
• Possible association between religious participation and sustainable agriculture. One NZ geographer identified high levels of motivation by some religious groups in Canada…

Methods:
• Quantitative survey question on affiliation.
• Possible question in qualitative interviews.

1.11 Political Affiliation and Worldviews

A bit like the previous category. Some US research only.

Key Issue:
• Relationships between political affiliation and other values and orientations towards nature, sustainability, appropriate farming expectations…

Methods:
•Quantitative survey.
• Keep open as a possibility in qualitative interviews.

1.12 Industry/Sector participation

Is a broad descriptor that will fit across all Objectives. Put simply, what is/are the industry grouping, commodity type(s), off-farm linkages with agri-food systems? Are these growers Zespri's, CMPs, others…?

Key Issues:
• for social research, we'll be interested in the level of social and political integration with industry bodies, groups and political organisations.
• are this family aligned with any important wider faction or grouping within their industry?
• Inside the broad industry categories, what are the sub-groupings that industry activity organises around? (eg. COKA).
• Accommodation and resistance (see section on Positioning).

Methods:
• Baseline reports.
• Quantitative survey.
• Qualitatively engage with how these families position themselves in relation to industry.
• Possibly develop typologies within industries to describe industry positioning.

1.13 Farming style/typologies of farming

In which we move into complex and unfocussed terrain. It has been useful for some rural sociology to develop typologies of 'farming styles' to help explain how the totality of farm activities fit together in some kind of coherent pattern or orientation. This, however, should not be mistaken for a complex or even shallow understanding of all that 'totality of farm activities'. Rather, farming styles became a shorthand for categorising farmers around their general orientation to production.

Possible Farming Styles Typologies:

• The original: A and B type farmers divided according to whether they were intensive production-oriented farmers or whether they had longer term aspirations for a wider range of social, kin, community and other less money-oriented benefits. (derived from the Wageningen School in The Netherlands).

• Shucksmith's version: creating a typology around longer term succession patterns combining farm type with farm management approach and household succession aspirations.

• The US model: comparing *agribusiness* to *agrarian*. Agribusiness are the productionists, agrarians aim to produce other values as well as money. Lifestyle, cultural values, succession, esteem in communities… (Not dissimilar to Wageningen, but American).

• The ACAP scale; using Beus and Dulap. They create a binary between conventional and alternative agriculture creating a 24 point bipolar scale to adjudge farmers as adhering to either conventional or alternative systems. Highly contested, but clearly relevant for establishing key questions.

• I forgot Rogers… remember, the typology according to adoption curves… early innovators, laggards…

Methods:
Farming types and such typologies, with the exception of Fairweather and Keating 1994, are theoretically driven. They can become a central area of hypothesis building in the social research (hopefully linking it with Objective 3), but also shouldn't become a way of escaping necessary complexity.

• Using theorised questions in quantitative surveys,
• Potentially within qualitative survey data (meta-interpretation of coding),
• Or, through a more interactive method.
• National surveys,

This is one of those areas where some transdisciplinary hypothesis building can occur. I don't want to promise too much, but farming styles and farming typologies do create descriptive categories that can then be refined through other Objectives (deconstructed, destroyed???).

2. Positioning

The Social Rationale outlines one particular style of research in the social sciences which is hermeneutic/interpretive. This style of research tries to find out what meanings, values, ideas, understandings individuals have about key issues. In ARGOS we suggest that all this interpretive work can be organised around key relationships. For our main farm respondents, the following issues situate them in a web of relationships which create a sense of the normal, natural order of the world.

2.1 Sustainability

Starting with the 'easy' one… The meaning of sustainability is flexible and shifting for researchers, policy makers, decision-makers in industries, consumers, and farm participants. So, we might as well get a good grip on what the S-word means for our participants. We also expect evolving conceptions of sustainability to operate as a primary indicator of the influence of ARGOS activities on participating farm households.

Key Issues:
• Definition and means of assessment.
• Is it variable, or influenced by context?
• Does it change over time? with information? through social contacts? by mandate (audit)?
• Relationship between notions of sustainability and farm practice.
• Relationship between notions of sustainability and sense of (or embeddedness in) place.
• Relationship with other key concepts. For example, is it a specific objective or is it incorporated within economic, environmental, or social goals?

Methods:
• Qualitative Interviews
• Participatory
• Quantitative surveys?
• National surveys
• Possible interactive methods?

2.2 Nature

Like ideas of sustainability, the ways in which farmers construct and position themselves in regard to 'nature' will be fundamental to the way that they understand farm management practices.

Key Issues:
• Definition,
• Relationship to farm practice,
• Relationship to risk,
• Gender, Control, Ethnicity?
• The nature/culture binary (An enduring theme in social scientific analysis of human/environment interactions. Operating at the level of ontology (how we

fundamentally believe the world operates), the binary is used as an explanation for key divisions in society, eg. Preservationism vs Conservationism).

Methods:
• Qualitative Interviews,
• Participatory
• Quantitative surveys?
• National surveys,
• Possible interactive methods?

2.3 Animals

Do they love those little wormies as much as Henrik does…? How do farmers construct their relationships with animals on the farm? As these relationships are embedded in cultural and historical processes they are not static and we can look for particular categories or relationships that are currently in flux or seem particularly contested.

Key Issues:
• Division of animals into different categories, such as: *pests*, *productive*, *sport/recreation*, *aesthetically appealing*, '*irrelevant',* (and pets!).
• Are animal/insect species defined in relation to each other? In systems?
• Different values and worth attributed to different species in a conservation context.

Methods:
• Qualitative Interviews
• Participatory research
• Interactive research?

2.4 Plants

Like animals, plants (including trees) can elicit extremely powerful emotional responses in people.

Key Issues:
• Division of plants into different categories, such as: *pests*, *productive*, *aesthetically appealing,* and 'irrelevant'. How do farmers relate to the plants on their farm?
• Are plant species defined in relation to each other? In systems?
• Different values and worth attributed to different species in a conservation context.
• Relations between plants and health: herbalism, healing, smoking, natural remedies?

Methods:
• Qualitative Interviews
• Participatory research
• Interactive research?

2.5 Problems in Production

(eg, pollution, degradation, pests)

How people perceive and define things as 'problems' in their production system could be revealing to the wider understanding and orientation towards farm practice. For example, the management practices of a farmer who defined all non-productive elements of the farmed landscape as 'problems' would be expected to differ significantly from those of a counterpart who readily identified beneficial or neutral entities among similar elements. The relative necessity and means of control of 'problems' is also indicative of the perceived objectives of farm management and may be closely aligned to culture/nature positioning.

Key Issues:
• How do participants define problems (as constraints, as variables contributing to the variability of production, as factors requiring control, …)? And how do notions of 'problems' define or influence farm management practice?
• Do 'problems' and the desirability of controlling them dominate perspectives on future production? Where (in which communities) do participants seek solutions to problems?
• Are individual 'problems' viewed as endemic to agricultural production, or are they attributed to the actions of others (individuals, organizations, industry, etc.)?

Methods:
• Qualitative Interviews
• Interactive methods?

2.6 Landscape

For social scientists (and, might I add, a particular obsession with geographers – one social scientist's obsession is another social scientist's lifeblood…), Landscape is a theoretical term that refers to the socially constructed landscape. Landscape has emerged as a variably defined construct (depending on one's positioning in regard to the nature/culture binary, see above) that focuses analysis on interactions between humans (as social beings) and the biophysical thing they occupy. These interactions are seen to result in the reconstruction (both successful and failed) of the physical environment to more readily accommodate a given society. As such, Landscape is a site of great symbolic activity, political interaction, meaning, identity…

Key Issues:
• Human relationship with particular visions of landscape,
• Identifying different versions of landscape,
• Relationship between versions of landscape and good farming (see below),
• Landscape as constraining or facilitating sustainability,
• Relating these to relational issues of sustainability, humans, nature, farming…
• The construction of the landscape including gardens, shelter belts, and ponds as well as farmed landscapes.
• Position and role of farm within surrounding landscape.

Methods:
• Qualitative Interviews,
• Observations
• Participatory (e.g., farm tour)
• Quantitative surveys?

• Possible interactive methods?

2.7 Food

Life!

Key Issues:
• What do these participants think about the food they produce?
• Do they consume what they produce? Do they have kitchen gardens and how are these managed?
• Issues of craft and artisan production versus instrumental production of food.
• How does food get its meanings? Is it related to locality, history, ethnicity, identity?
• Do producers inscribe meaning into food (like terroir, locality labelling…), audit systems, or companies? Is their product rendered invisible in commodity markets?
• How short is the pathway to market?

Methods:
• Qualitative Interviews
• Participatory research
• Interactive research?

2.8 Locality

As discussed in section 1, Locality is a potential key organiser for how participants see themselves as inhabiting particular landscapes. Participants' positioning relative to Locality (similar to Landscape) offers insights to identity and legitimacy. Locality is more closely associated, however, with the social interactions that develop in particular places (space becomes place when its boundaries can be identified – that is not to say these boundaries are not contested! – and meaning is attached to it) than with elements of a constructed landscape. (Landscape is generally limited to the tangible elements of place and the meanings associated with them, whereas Locality is more likely to include social, political and social entities.) The potency of Locality as an analytical concept is strengthened by the tendency for humans to associate with a particular place, with the locality assuming power of identity.

Key Issues:
• Do participants actively associate themselves with a particular locality – are they inhabitants of that place? Is the locality defined by social, environmental, or other criteria?
• Does the farm household's relationship with a locality affect management practice – does is en/discourage particular practices or philosophies of management?
• Does association with a locality influence positioning relative to politics, economics, industry, etc.?

Methods:
• Qualitative Interviews,
• Quantitative surveys?
• Possible interactive methods?

2.9 Community

This is another important, socially constructed category that shares attributes with landscape and locality. As opposed to the previous two, Community is more exclusively focused on human interactions. Individuals are viewed as achieving identity and meaning through the shared interests of a community built around some level of similarity. In addition, Community is not necessarily a place-related concept as communities can occur across a wide range of scales. Three kinds of community often used: local network of individuals, geographical area inhabited by groups, diffuse network of people with something in common (the global community of the Chris Perley Fan Club).

Key Issues:
• What types of communities do participants participate in? Is their participation
  viewed as pertinent to the sustainability of farms?
• Which communities operate as sources of information, influence, or pressure –
  especially relative to sustainable practice?
• Does community participation reinforce or contest the influence of other actors in
  the relevant agri-food systems?

Methods:
• Qualitative Interviews,
• Quantitative surveys (membership)?
• Possible interactive methods?

2.10 Rural/Urban

Rural and Urban both have strongly ascribed characteristics that differ depending on the positioning of the individual. Rural can be constructed as backward, hillbilly-land full of sexually inexperienced but willing folk chewing grass (As in *Deliverance*). Or, it can be bucolic, happy, more natural, harmonious, community-based society as epitomised by the *Heartland* series in NZ. Urban can be seen as progressive, efficient, intelligent, rational, or as nasty, evil, superficial, unnatural, polluted, ignorant and patronising.

Key Issues:
• Relationship between constructions of rural/urban and other key concepts like
  nature, landscape, identity…
• Contested ideas about farming – expectations from non-farming urban populations
  may differ from the rural farming sector. Are there ways in which farmers feel
  constrained or dictated to by non-farming urbanites?

Methods:
• Qualitative Interviews,
• Quantitative surveys?

2.11 Cultural Identity

Cultural identities involve more than ticking off a descriptor as identified in Section 1. Cultural identities tend to be relational; that is, they operate by positioning people in relationship to other people or issues. They share some aspects with community to

they extent that culture is shared among a group of individuals. Thus, they exhibit the potential to become exclusionary groupings and to reinforce hierarchical social relations.

Key Issues:
• Culture often tends to be invisible to powerful cultural groups (We're just 'normal', all those minorities have different culture). Hence issues of cultural identity are often about the *reflexivity* of participants (yikes, that one slipped in far too easily). Reflexivity is how much individuals reflect, and critically engage their own place in the world (rather than accepting that everything is just normal, including themselves). Unreflexive and reflexive participants may well prove to be different in a lot of ways.
• Culture is also (obviously) associated with human/nature relations (see above).

Methods:
• Qualitative Interviews

2.12 Good Farming

(A favourite of Hugh's.)
The concept of the 'good farmer' has been identified as an active element of farmers' worldviews. In much previous research, farm participants are shown to position themselves in relation to other farmers around the district. Fellow farmers may also be discussed as exemplars of good or bad farming. To the extent that individuals seek to identify with the community of farmers, shared understandings of good farming can act as either the justification for adopted practices or as the antithesis of a personal farming philosophy.

Key Issues:
• What the qualities of the perceived 'good farmer'/'bad farmer'? How are these qualities assessed and by whom?
• Do participants identify 'official' representations of 'good farming' and do these reaffirm or contradict the participant's own practice? Are participants' ranges of viable alternatives limited by accepted definitions of 'good farming'?
• How is good farming validated? Prizes, competitions, profits, social status?
• Given constraints that are present in every individual farm, ideals of what comprises good farming are instructive for how participants want to farm, and what they might do if their constraints were removed.

Methods:
• Qualitative Interviews
• Participatory
• Interactive methods?

2.13 Work

Here we are referring specifically to perspectives of the value and meaning of work as opposed to the physical effort involved.

Key Issues:
• Definition.

• Concepts of appropriate work activities, differentiation between 'leisure' and 'work,' motivations and rewards from work.
• What is considered a 'good day'? a 'bad day'?
• How is work made meaningful? How is this meaning maintained?
• Relationship of work to identity.

Methods:
• Qualitative Interviews
• Observations

2.14 Labour

Relationships with hired labour are important part of farm management. These relationships may be influenced by perceived or real differences in class, ethnicity, culture, etc.

Key Issues:
• What is the role of hired labour, both managers and other workers, in farm management?
• How are workers perceived by owners and managers?

Methods:
• Qualitative Interviews
• Observations
• Interactive methods

2.15 Ethics

Ethical beliefs are often embedded in the everyday actions that people make. Some beliefs are very specific in which a particular action is seen as good or bad. Some ethical beliefs are part of an overarching philosophical position, in which people comprehend an array of complex actions and beliefs in positive and negative terms.

Key Issues:
• What are the primary sources for farmers' ethical beliefs (social movements? religion? specific philosophical teachings?)
• How do ethical beliefs impact upon farm management practices?

Methods:
• Qualitative Interviews
• Participatory research
• Interactive research?

2.16 Health

Here, health involves the participants' perceptions of the relative 'healthfulness' (mental as well as physical) of both farming, in general, and of particular management practices.

Key Issues:

• How do participants construct measures of health with which to assess their farming practice and that of others?
• Is health a significant consideration as participants contemplate a range of management practices? Is this significance associated with the personal health experiences of participants? or through other actors?

Methods:
• Qualitative Interviews
• Interactive research
• Quantitative surveys

2.17 Economics/Politics

Here, we refer not to the material relationships as outlined in Section 1, rather, to the way in which participants view and position themselves in relation to political activity, or to economic systems.

Key Issues:
• Binary around small farms versus big corporates,
• Arguments about sustainability and capitalist systems,
• Importance of markets (see also relationship with constructions of 'urban'.)
• Local politics, activism, social movements.

Methods:
• Qualitative Interviews
• Participatory

2.18 Industry

Perceptions on the role and influence (good or bad) of industry generally as well as in respect to a specific sector form a subset of political and economic positioning. In the specific case of industry, the relative esteem/disdain for or complacency/resistance to the industry (its activities, its structure, etc.) can be expected to affect management practice – including adoption of innovation, compliance with audit, etc.

Key Issues:
• Positioning of participants viz their industry (eg. Pro/anti corporatisation of Zespri).
• Interpretations of participants' freedom/ability to act – given industry regulation.

Methods:
• Qualitative Interviews
• Participatory

2.19 Organics/IM

What do participants think these are? In broad terms Organic seems to be a social movement slowly morphing into a technical compliance system. IM is the opposite, a technical compliance system that is morphing, via EUREP-GAP into a social movement. Because of relations to industry and marketing, participants' views on these practices may reflect attitudes in regard to industry thereby forming a further subset of political and economic positioning.

Key Issues:
• Earlier *Greening Food* research revealed a number of ways in which participants understood organic. Some saw it as an all-encompassing lifestyle, some as a biodynamic form of spirituality, some as a reasonable way to make money, some as an audit system that excited a sense of challenge and skill…
• So, what does being an 'organic' grower mean to our participants. What is it necessary to do and be in order to be 'authentically' organic etc… (do you need to go to Bio-Gro meetings, read Harvests, know your moon phases, eat vegan, know the technical standards…?)
• Same for IM. Is Integrated just an audit system, or is there a wider discourse of sustainability that they adhere to and support?
• How are organics/IM identified or assessed by non-practitioners? Do they recognize significant differences in practice? in environmental impact? in social or economic relations?

Methods:
• Qualitative Interviews,
• Quantitative surveys?
• Participatory
• Possible interactive methods?

2.20 Productivity

We often describe particular growers as 'productivist' or 'productionist'. This concept is commonly used to imply a perspective on farm management that concentrates almost exclusively on realizing the greatest possible yields from crops. As such, a 'productivist' or 'productionist' grower would be expected to rationalise the use of inputs and innovation on the basis of the potential to increase yield with environmental impact a secondary concern.

Key Issues:
• What does 'productivism' mean to our participants?
• To what extent do participants incorporate such meanings (theirs, ours, that in the literature, etc.) within their notions of best management and/or good farming?
• To what extent does productivity contribute to sustainable farming?
• How are perspectives on productivity related to political and economic positioning? to concepts of 'good farming'? to community or industry contacts? etc.

Methods:
• Qualitative Interviews
• Participatory

2.21 Technology and Inputs

Here, technology and inputs include those derived from both scientific and local knowledge, those that are innovations and those that are part of established practice in a locality. Participant positioning relative to technology and inputs follows at least two axes relevant to the ARGOS project. The first would involve the individual's acceptance of the risk inherent to adopting new or switching between technologies and their associated inputs. The second involves a participant's relative dependence

on (a) technology and inputs to meet management objectives and to deal with 'problems' in production.

Key Issues:
• Do participants ascribe to a particular technology and employ the associated inputs? To what extent is farm management circumscribed by available technologies and inputs?
• How do farmers assess the merits of a given technology or determine the appropriate level of input use? What other elements of the production system (on-farm, locality, beyond) contribute to these assessments?
• To what extent do participants rely on 'technological fixes'? Are such fixes self-generated or are they necessarily the product of outside research?

Methods:
• Qualitative interviews.
• Interactive research

2.22 Consumers

The role of consumers in the construction of agricultural production systems is increasingly recognized (at least in passing) within the Agri-systems literature. In such analyses, consumer preferences (while admittedly subject to the advertising juggernaut) are seen as exerting pressures on farming practice and influencing conceptions (and contestations) of good farming. Consumer activism can be the impetus for the creation of audit systems detailing acceptable management, labour, and trade practices. As a result, farmers may either accept such demands as reasonable or contest them (as based in lack of awareness of the conditions of farm management, for example). An additional facet already identified among participants is the perceived viability of direct marketing – of being able to project a specific quality advantage that would eliminate the need for intermediaries such as industry, retail outlets, etc.

Key Issues
• Do participants recognize the role of consumers in defining acceptable practice and quality in the production of sheep/beef or kiwifruit? Are such demands viewed as helpful or hostile encroachment of others on farm practice?
• To what extent are consumers viewed as members of the same community or locality? Are consumers seen as potential allies or as adversaries as farmers pursue best management and sustainable production?
• How do participants act a consumers? What influences their consumption decisions and preferences?

Methods
• Qualitative interviews

3. Capacity to Act/Structural Constraints

A key dimension to sociological analysis is *capacity to act*. Once researchers have gained an idea of how research participants view, understand and interpret the world, it is a mistake to think that individuals do therefore go forth and act according to their views (known in the trade as the Cartesian view: *I think therefore I act*). Rather, individuals are always faced by numerous structures, institutions, processes and discourses that impinge upon their capacity to act.

Human action, and important outcomes of trying to change human's behaviour, can only be explained through a strange combination of motivation to act and capacity to act.

The following topics pinpoint areas where key factors impinge or enable capacity to act in the context of farm management.

3.1 Life Cycle

Jane Smiley's classic novel *A Thousand Acres* is but one of many literary examples of the conflicts and constraints around life cycle in farm households. Rural Sociologists talk about this in relation to 'farm succession'.

Key Issues:
• Decision making power in the family.
• Children.
• Estate planning.
• Do you want to keep farming?

Methods:
• Qualitative Interviews
• Participatory research
• Interactive research?
• Quantitative surveys

3.2 Capital

It helps to be rich. Ooops, not to forget the important of social capital…
environmental capital???

Key Issues:
• The 'room to manoeuvre' model (only when you are financially secure can you contemplate experimenting).
• The crisis-induced change model (only when you are about to go bankrupt will you try something experimental).
• Access to capital, finance.
• Social capital to enable activities.
• Previous surveys in NZ showed that organic farms were smaller and less wealthy.

Methods:
• Qualitative Interviews

• Quantitative surveys

3.3 Structural Constraints in Agri-Food System

Greening Food continually found that some industries were just completely unsuited to getting an organic product to the market. Eg. The meat and dairy industries in the 90s. Infrastructural constraints often were cited in decision-making research as causing motivated individuals to give up trying to be organic.

Key Issues:
• Farmer perceptions of opportunities and constraints in their industries,
• How many products are available, how many pathways to market?
• Positioning and actions of key decision-makers in industries.

Methods:
• Qualitative Interviews
• Quantitative surveys
• Strategic Interviews with key industry players

3.4 Autonomy within Processor/Packhouse Requirements/Contracts.

A key issue for rural sociologists is the amount of autonomy growers have within agri-food structures.

Key Issues:
• Contracts. How onerous are production contracts? Do they reduce the freedom of producers to manage their farms according to their own best knowledge?
• Labour. How much does availability of workers, as well as labour demands (pay, hours, etc.) affect growers' autonomy?
• Who decides how crops are going to be grown? Has this role shifted up the industry chain?
• What are the restrictions placed by political manoeuvres, production regulations and industry requirements?

Methods:
• Qualitative Interviews
• Quantitative surveys
• Strategic Interviews with key industry players

3.5: Labour Market

A cross-over topic with economics (obviously!)…labour force and labour market relationships are socially embedded as well as having key economic connections.

Key Issues:
• How much does availability of workers affect growers'/farmers' autonomy?
• What constraints are placed on farmers in order to meet labour regulations?

Methods:
• Qualitative Interviews with growers
• Qualitative Interviews with farm/orchard workers?
• Quantitative surveys
• Strategic Interviews with key industry players
• More ideas to come from Economic Objective?

3.6: Audit Requirements, Audit Responses

Just in case any of you forget this…

Key Issues:
• Who sets the standards?
• Who inspects?
• What is the level of compliance?
• What do growers do with audit systems at the level of farm practice? How much uptake of required systems is there?
• Does audit get them to better markets? Does absence keep them out of markets?
• Are there differential impacts across different grower groups? Who finds it easiest to be compliant to audit systems?

Methods:
• Qualitative Interviews
• Quantitative surveys
• Strategic Interviews with key industry players

3.7: Skills: Education, Development, Networks, Experts.

Is farming in a more sustainable way easy? If not, where, how, when and from whom are the skills to farm sustainably generated. This is potentially a key constraint on developing new management systems.

Key Issues:
• Have they not met Jon Manhire?
• In new, and potentially successful, systems of production, how much of the skill came from external sources (science, experts, industry) and how much from local knowledge (traditional knowledge, family knowledge, individual innovation)?
• Who are experts? Where do scientists fit? Whom do you trust?
• Detail the structure and flows through knowledge networks.

Methods:
• Qualitative interview
• Quantitative survey
• Strategic interviews with key industry players

3.8: Biophysical Constraints on Farm Strategy, Tactics and Operation

Does the biophysical nature of the farm landscape place constraints on capacity to act? Social scientists are increasingly being encouraged to include the biophysical

into their arguments, but we really are looking elsewhere to tell us how to do this in anything more than a nominal way.

3.9: Regulation

Despite Hugh's oft-repeated argument that New Zealand has the lowest level of regulatory intervention towards sustainability in agriculture, it is clearly not true that there is absolutely no regulation at all.

Key Issues:
• Effect of RMA 1991,
• Biosecurity act,
• Farm perceptions of regulation and impact of regulation on farm choices,
• Role of regulation in constraining long term farm planning,
• Retrospective understanding of changes to farming practices correlated to changes in regulation.

Methods:
• Qualitative interviews
• Quantitative Surveys
• Literature review (analysis of impact of historical & current regulations)

3.10: Moral Economy of Farming

Vandana Shiva described the world's worst problem in agriculture being 'monocultures of the mind'. While not being a social scientist, she nevertheless hit a key target for us.

Key Issues:
• Where do farmers draw the lines of acceptable and unacceptable courses of action?
• What kinds of visual landscape are unthinkable?
• How far can you move from mainstream thinking in agriculture without the sense of risk becoming overwhelming? (what is their pain threshold for risk?).
• Is there a 'moral economy' in farming? Moral economies describe the cultural and discursive framework by which decisions can be seen as rational, even when, in economic terms, they might appear irrational. Moral economy was the word used to describe peasant behaviour when peasants wouldn't choose to adopt 'modern' agricultural techniques, instead opting for longer planning timelines, social obligations, maintaining kinship etc…
• Are there moral economies operating between farms and local communities?
• How do all the above constrain choices in farming?
• How much are these kinds of barrier disrupted in periods of crisis?
• Mark Shucksmith's study used the theoretical concept of habitus to describe the way in which a particular way, approach, lifeworld of farming was naturalised and normalised for farm families.

Methods:
• Qualitative Interviews
• Interactive Research?
• Participatory Research?

4. Change

Examination of the social world of the ARGOS participants cannot be limited to the description and analysis of their current worldviews, strategies, attitudes, and actions. Rather, this world must necessarily be approached from the perspective of change – that is, as an emerging system of interactions. To suggest that the social world emerges is to imply that its current characteristics are embedded in a context of past experience and action and that these characteristics are subject to the influence of new experiences and interactions both within and beyond the production system. Thus, it becomes imperative to both establish the structures and contours of historical management practice as well as interpret actual and proposed adaptations of practices in response to periods of crisis and stability in the production systems. Pursuing these changes will facilitate the assessment of factors identified in the previous three sections by indicating the relative significance of those factors as participants actively negotiate the challenges of production.

The following categories (or better said, trajectories) concentrate on specific areas of change that are believed to exert significant influence on management practices and the sustainability of agri-food systems.

4.1: Production/intensity

It is a common assertion in agri-food systems research that farmers have experienced pressures to alter production as the result of the expansion of capitalism–most recently through global markets. The intensification of production (i.e., the growing emphasis on management practices and inputs use as means to raise productivity) has been identified as a primary facet of this change. In addition, diminishing sustainability of the agricultural sector and loss of management knowledge have been associated with this intensification. The construction of a narrative of production change within the ARGOS participants will allow them to identify (and confirm or not our own perspectives) the significant factors and sites of action which influence on-farm practices.

Key Issues:
• How has the farm enterprise changed over the period of the project. What concrete changes have taken place within farm production?
• Do participants articulate a narrative of change in their approaches to and practice of production and management? How is this change evident on the farm landscape, in the farm household, in the locality, etc.?
• To which factors or influences is this change attributed? self-instigated (changes in personal approach to farming, etc.) or external (changes in production technology, information or skill availability, industry regulation, etc.)?
• Have changes in production driven – or were they driven by – changes in the objectives of farm management? To what extent does this influence sustainability of farm management?
• Has any aspect of farming activity intensified? Is it input intensification or knowledge intensification?

4.2: Farm Household Structure/Demographic change

Age, household structure, and life-cycle are already identified as descriptors (see section 1 and 2). In a longitudinal study of the scope of ARGOS, however, these can also be observed as factors of change. Demographic changes can influence the availability of labour and investment capital on farms, alter the time horizons employed by participants, or change the households commitments to community, recreation, or financial gain.

Key Issues:
• What is the level of farming experience for each of the participants? Was farming a life-style change or a family tradition?
• What is the existing condition of ownership, debt, projected expansion, etc. of the farm? As this changes, will perspectives on management change as well?
• Who contributes to the labour requirements on the farm? Has/will this change as a result of changes in the household make-up? How are women and men treated differently/similarly? How are workers treated differently from/similarly to family members in regard to labour?

4.3: Industry, audit, agri-food system change

Past experience with researching NZ agriculturel suggests that major impacts in farming occur via changes in the industry structure, audit, or other parts of the agri-food system. The role of these factors in participants' positioning and in their capacity to act are elaborated above. In this section we are concerned with how participants have incorporated changes in industry and the larger agri-food system within their farm management practice. Of particular interest is the extent to which these changes are seen to constrain or encourage appropriate (as defined by participants) management practice.

Key Issues:
• Is farm production influenced by conditions in the respective industries (as well as other local industries)? Do participants feel that they have gained or lost control over management decisions?
• How do participants perceive their relationship with the industries? Are marketing and consuming relations subject to constraints? Are they considered fair? Has this changed over time?
• Do the demands of the industries require alterations of management practice? Do participants conform to or find means to contest changing standards and regulations (audits)?

4.4: Management/skills/interventions

As stated with demographic change, the knowledge and skills employed by the farm household or to which the household has access cannot be considered static within the context of a longitudinal study. Changes in these factors may often reflect changes in political and economic policy, in social discourse of good farming, or in awareness of local environmental conditions among others. As such, the narrative of change in management/skills/interventions offers insight to the influence of broader influences in production and in society on farm management practices.

4.5: Environment

If Objective 4 delivers some pretty impressive data on environmental change on farms over the period of the study (and, let's face it, we all know that they WILL), then how does biophysical environmental change integrate with social and economic processes in the farm households? We are interested in changes in environmental awareness within the farm households both in prospect and retrospect. Such changes would involve both tangible alteration of biophysical attributes as well as evolving perceptions of the role and importance of nature (see section 2.2) within the farm household.

Key Issues:
• Do participants recognize the impact of their management practices on the environment? Is this impact considered beneficial or degradational? Do they believe that the quality or condition of the environment of the farm has improved under the household's management?
• Does farming require more inputs (greater compensation for environmental limiting factors) now than in the past?
• Do participants regret any changes that they have made to the environment? Are there elements of the environment they would still like to change?

4.6: External networks/association

Again, a topic that has been addressed previously which must be addressed as an evolving set of relations. Here we are particularly interested in the locality dynamics, thus separating this section from that on industry relations. The resulting narratives would address the significance of changes in the place of the farm household within wider communities of social interaction on farm management.

Key Issues:
• Do participants identify with a particular locality or community? Has their sense of belonging increased over time? Is there evidence of this association in their management practice?
• In what types of social activities does the household participate? Does membership in communities create a sense of responsibility? Does it provide tangible benefits for agricultural production?
• Which groups or organisations are considered to be influential? Do they facilitate or impede with the sustainability of agricultural production?

4.7: Ideas/attitudes/identity/positioning

To the extent that analysis focuses on the farmer and the farm household as the central actors in agricultural production, the preceding narratives all form part of the attitudes assumed by participants. It is expected that these attitudes will both reflect and respond to the other change narratives as well as evoke alterations in the ways through which individuals approach sustainability in agricultural production.

Key Issues:

• Do participants recognize alterations in the way in which they approach farm management? Do they maintain the same objectives for there farms as when they first started?
• Do participants refer to themselves in the same manner as before (farmer, grower, orchardist, businessman, …)? Have their responsibilities changed?

5. 'Sites of Action' in Creating 'Sustainability': A Basic Checklist

It is important for the project that we don't *a priori* reify where we think the key actions are taking place that are influential on achieving sustainability outcomes on farms. It would be a serious error to assume that all the action takes place within the farm boundaries.

Another guiding issue is the tri-partite model for achieving sustainability: via one of the three pathways of Regulation, Voluntary or Market mechanisms. ARGOS gives us a superb research opportunity to embed these three pathways into more grounded, and hybrid forms within NZ agriculture.

Here is a checklist of the hypothesised 'sites of action' where key things might or will happen which turn out to be influential on farm-level sustainability. This checklist does not add anything to the previous four sections of research foci. Rather, it indicates the way in which a slightly broader analysis across the previous research foci can cluster around key sites or processes in the later analysis.

5.1: Cognitive Change

A big, and still very important, site of change is inside people's heads. We want to avoid assuming direct correspondence between what people think they should do (and how that changes) with what they end up actually doing in practice (otherwise the previous section on 'capactity to act' would be irrelevant). Similarly, we certainly don't want to become structural determinists and assume that what people think is irrelevant.

5.2: Decision-making dynamics in farm households

How farm households come to make decisions is important. Does the process change? Are new knowledge sources brought to bear? Who do you strategically concentrate upon to influence key decisions?

5.3 Farm enterprise

Not so much a 'site of action' as a portal into another world…

5.4 Industry politics/ Industry policy groups

Who, or which group, makes strategic decisions on behalf of industry? How are they related to our growers? How are they related to other 'sites of action'?

5.5 Key relationships: farm–off-farm

Have we managed to identify the key structural constraints/enablers in the on-farm/off-farm relationships? On the vertical axis: Banks, stock firms, single-desk sellers, input suppliers, science providers? On the horizontal axis; community, labour market, local resources?

5.6 Standards setting bodies/committees

If audit turns out to be as important as Hugh thinks it is (place your bets now), then who sets the standards? What are the sites where standards are set, fixed and deployed? What kind of groups and alliances lie behind these? How easy are they to influence?

5.7 Market Access

Europe is evil, it picks on us poor free traders. Lets get W to nuke them back to the stoneage…. Or… is market access as big a factor as Caroline claims? If so, how has it influenced sustainability outcomes on farms?

5.8 Social movements/Public debates

The knowledge networks analysis might well trace the importance of wider societal debates around issues like organics and GM. Likewise, social movements have become key contributors to public debate and PR contests. Interesting to try and judge how important these influences were on actual farm practice. Might end up finding out that those wanting to achieve greater sustainability should just ignore these wider media circuses… or the opposite; we should be into public debate boots n all!

5.9 Consumption

New styles and modes of consumption are widely regarded to be influential in most studies of contemporary food politics. Is this too far away from the ARGOS brief to care about? Or can we just not afford to?

5.10 Regulation

Does it make a blind bit of difference? What are the actual impacts of regulation on farm practice, compared to other potential mechanisms for encouraging sustainable practice. Could it be that all we need to do is encourage Integrated Catchment Management groups????

5.11 Stabilisation

OK, following a somewhat theoretical hypothesis… we are interested in the way in which different processes can cluster and reinforce each other to make some small and insignificant factor/innovation/experiment start to take on more solid, stable and enduring form. You could approach this through a meta-analysis of the other sites of action and the relationships and/or processes that operate between and through them. Hard to make a better case than that without having a good example to hand.

5.12 Destablisation/Crisis

Hypothetically, you can also pose the opposite: that innovation and interesting new things arise when currently stable social forms are shocked and destabilised by a crisis or other disturbance.

Periods of crisis are of particular interest because they are often associated with necessary (and often mandated) alterations to accepted management and production practices. Boom periods may also usher in change, but such change is more likely to involve changes that are seen as desirable, as opposed to necessary. It is further expected that similar chronological anchors within the respective industries will facilitate comparative analysis of the remaining narratives of change.

Key issues:
• How did participants deal with financial, climatic, or domestic crisis or crisis with the community or locality? What was the cause of this crisis? Are you prepared for similar crises in the future?
• When have/will the participants felt/feel the most secure? How would conditions differ from periods of crisis to those of security?
• What periods of crisis or boom do participants' associate with kiwifruit or sheep/beef production? Did these meet successful (and satisfactory?) conclusions?
• What would participants like to have accomplished on their farm? What has impeded the ability to pursue improvements?

Could it be that 5.11 and 5.12 represent some kind of sociological engagement with resilience theory…?

Part 2: How?

Key Methods in Social Research:

- Interviewing
- Interactive Methods
- Participatory Methods
- Quantitative Surveying

The methods proposed for the analysis of social sustainability fall into four main categories: interviews, interactive techniques, participatory, and quantitative surveys. This mix of methodologies provides the means to capture both highly situated data as well as data that allow for generalization across spatial and temporal frames. The diversity of methods is also necessary in order to address the range of themes identified in the preceding sections. (The following presentation of methods should not be understood as a rank ordering according to importance or period of implementation. By contrast, the suite of methods is expected to offer multiple points of entry and facets of perception, thereby providing a more complete examination of the complexity that is farm management.)

1. Interviewing

1.1 Qualitative Interviews with Farm Participants:

Interviews are among the most commonly employed methods in social research. As such, they are considered an appropriate and direct means of eliciting information from participants in the research project. Interviews facilitate the gathering of data that reflects the personal knowledge and experience of the participants in the study. It is understood that the participants offer privileged access to in depth knowledge of the research subject. Because such data reflects the personal perspectives of each of the participants, however, interpretation of the data and application of the results must acknowledge the potential subjectivity of the collected information.

Due to the temporal constraints placed on interaction with study participants by the research design (i.e., large number of participants, spatial dispersion of study sites, etc.), the selected interview methods are all at least partially structured in order to focus response on key topics and relations. More specifically, included methods can be categorized as either semi-structured or structured interview methods based on the relative latitude of response that they encourage. The intent of semi-structured methods is to establish a loose framework for the data acquisition while maintaining an open-ended format that encourages self-definition and self-representation. In other words, participants will be asked to address specific themes in their farming experiences, but will also be encouraged to define which aspects of their narratives should be emphasized.

Outside the farm household, wider industry dynamics, issues of constraints and capacity to act, and other sites of action are important. There are two main interview types for engaging with these wider structures, processes and influences.

1.2 Focus Group Interviews:

Focus group interviews are a structured interview activity which allow a group of participants (generally chosen on the basis of significant characteristics defined by the researcher) to respond to a restricted set of topics (Barbour & Kitzinger 1999). The intent of the exercise is to elicit greater depth of response as participants incorporate the responses and perspectives of each other through dialogue facilitated by the interview coordinator. As part of ARGOS, participants will come together as groups annually either nationally or in a region. These meetings would provide an excellent opportunity to coordinate focus groups with the participants addressing issues which may produce better information from a group interaction.

1.3 Strategic Interviews:

These interviews are comparable to the qualitative interviews directed at the farm participants and can be either unstructured or structured. The key difference is that a strategic sample of actors – identified as key decision-makers – across multiple sites in industries, sectors, and agri-food systems is included. This suggests that we have already identified the significant sites of action within the system and, thus, will access the pertinent relationships through the sample. Most of the Greening Food research programme was conducted through strategic interviewing across industry sectors.

2. Interactive Methods:

The process of qualitative interviewing of farm participants is a very capable means of elucidating the participants' view of the world. It is not equally capable of covering the full range of issues, questions, or hypotheses in which the research team might be interested. Consequently, we can also draw on a range of methods that involve more structured and interactive data-gathering by the researchers.

2.1 Cognitive Mapping:

An interactive method with an established a record of eliciting understandings of environmental issues from a broad range of stakeholders is that of cognitive mapping (Schneider, Shnaider et al. 1998; Hobbs, Ludsin et al. 2002; Özesmi and Özesmi 2003; Özesmi and Özesmi 2004). Cognitive mapping is accomplished by asking individuals or groups of individuals (who represent particular stakeholders in the issue in question) to list all factors (people, things, relations, etc.) that influence or are related to the issue of interest (e.g., sustainable agriculture). Subsequently, the participants define any relationships among the factors by assigning the direction (using an arrow), the perceived value (positive or negative influence) and the weight (in the case of fuzzy cognitive mapping this would range from –1 to 1) of influence. Cognitive maps can be compared on basis of their complexity (number of factors and relationships identified), hierarchical nature (predominance and strength of uni-directional relationships), and the centrality (combined weight of relationships) of

factors within each map. The maps of participants may also be combined (by averaging weights) in order to facilitate comparison across stakeholder groups using graph theoretical analyses. (It is also possible to compare temporally distinct maps to determine change in cognitive assessments of sustainability during the period of the project.) Finally, the collection of the fuzzy directional data enables the construction of response models for purposes of assessing the probable impact of various policy initiatives.

2.2 Vignettes:

Vignettes are a method of qualitative research utilized in order to assess participants' judgments in a less personal and threatening manner. The method requires the researcher to develop hypothetical narratives (vignettes) of scenarios which portray particular behaviours or attitudes. For example, in the case of the ARGOS project, a vignette might describe a particular management response to a social (quality standard) or ecological (pest outbreak) stimulus. Each participant is then asked to evaluate the response represented in the vignette. Because the same set of vignettes is presented to the all of the project participants, it is possible to compare their responses across cohort groups.

2.3 Diaries:

The study participants may also be asked to maintain farm management diaries. In an effort to facilitate collaboration with ARGOS' economic objective, these diaries will include a focus on recording the level of management inputs and production outputs as realized on a daily basis on the farms (i.e., similar to time-budget analysis). The design of this element of the diaries will be subject to interaction with the economic objective researchers. In order to gain insight to the social networks of farm households, the diary design will also include sections in which participants are asked to detail and discuss social interactions. The latter diary activity is expected to establish the identity, number, consistency, and relative importance of social relations. This information offers insight for a more incisive follow up interview during which the identified relations can be further assessed.

2.4 Card Sorting/Q Sorting:

An additional structured method involves a card sorting exercise. Here, the focus will likely involve relationships between the farm households and the surrounding community. Thus, participants would be supplied with cards listing a set of off-farm relationships and asked to sort them by importance, necessity, etc. relative to the sustainability of the farm. Blank cards are also provided to allow participants to include relationships not identified by the researchers. (This activity would be roughly equivalent to a visualisation exercise in which participants were asked to evaluate pictures of land use practices.) In addition to the cross-cohort comparison, such a sorting activity would allow for annual repetitions in order to examine any temporal evolution in assessments.

2.5 Visual Techniques:

In order to account for differences in the ways in which participants view the farmed landscape, we will also conduct a visualisation exercise. In this exercise, we will

provide participants with disposable cameras and ask them to document the best, worst, and most 'meaningful' areas of their farm. The farmers will also be asked to document their reasons for including each of the pictures. By means of the visualisation exercise, we expect to gain insight to farmscapes as these are viewed by those who inhabit them. Variation in the selection of significant sites in the farmscape may indicate differences among farming cohorts or farm management types as well as between farmers and researchers.

Others…

3. Participatory:

Because the interview methods rely on the perspective of participants in the data gathering process, they do not necessarily conform to historical truth or the actual practices of the participants. In order to compensate somewhat for this subjectivity, participatory observation methods also form part of the data gathering process for the social objective.

3.1 Participant Observation:

The classic anthropological technique. PO suggests that sometimes, no matter how much you talk about something, you really can't try to understand it until the researcher becomes fully immersed. Likewise, actually participating in farm life gives a good corrective on the old quandary of whether participants actually do as they say they do. PO is a great research technique for getting right to the guts of issues. Its key (and very significant) limitations are time and resources.

Participatory observation may also include attendance at formal and informal events and occasions between study participants and community members. This could include (but is not limited to) informational meetings with cohort members (including persons from outside the selected clusters) or with industry representatives. The object of such attendance would be to observe the social dynamics and positions assumed by participants while engaging in this type of interaction.

3.2 Farm Tours:

Farm tours have gained popularity as a method associated with Rapid Rural Appraisal (RRA) and Participatory Rural Appraisal approaches. In the exercise, farmers are asked to provide a walking tour of their farm highlighting its various productive and non-productive elements as well as management practices. (The exercise will be documented through photographs of specific sites and accompanying dialogue (recorded) of participants.) Expected results of the exercise are to establish actual management practices and compare these to those identified by the interview methods. The two most common frameworks for the tour are that of a transect or that of nodes. The transect method involves selecting endpoints at opposite farm boundaries and walking a straight line (as far as possible) across the farm landscape. Participants are asked to describe the elements encountered with additional specific queries offered by the researcher. This method is arguably more objective in approach, avoiding possible bias against less prominent elements of the agricultural production system. It does, however, potentially miss important elements of the

farmscape as well. An alternative approach is to ask the participants to present the various parts (nodes) of the farm. This approach runs the risk of subjectivity, possibly ignoring elements of the farmscape considered less important by the participant. In conjunction, the approaches offer greater potential for inclusiveness and completeness.

3.3 Participatory Appraisal:

Participatory Appraisal is a method developed from Rapid Rural Appraisal. It is a way of ensuring democratic participation in a group process which aims to raise and prioritise problems and issues and develop ways of addressing them. Participatory Appraisal is typically a visually-based activity in which members of a group collectively draw or represent symbolically the situation in which they find themselves as well as the problems they face. Then, by a voting procedure, they prioritise the problems the group identified and set about thinking of ways of addressing them by following specially designed group processes. The process is usually very satisfying for the participating group because it develops ownership of significant problems and of ways of dealing with them. This technique is most likely to be useful at the start-up phase of the project, and thus might be a little late for ARGOS.

4. Quantitative Surveying:

Face to face research techniques are excellent, but time consuming (not to mention resource consuming). Moving to the other mode of data-gathering in the social sciences, methods that operate at a distance to participants allow you to get larger numbers in your N and thus greater statistical purchase (on a lower quality of data).

Assessment of the veracity and the representativeness of the data gathered by interviews and participatory observation is also further enhanced through the utilization of broader scale survey methods. The surveys proposed for the social research are expected to provide insight to sectoral characteristics and will include attitudinal surveys in order to develop a broader understanding of perspectives relative to sustainability, management, and social factors by accessing a cross section of kiwi, sheep, and beef producers.

4.1 Quantitative Surveys for Farm Participants:

Have the advantage of gaining rapid data on specific issues without too much bother to the participants. The main effort goes into design, with the final result being able to be administered by Field Officers, by post, or by phone.

4.2 Quantitative Surveys for Wider Sectors:

A key test of the generalisability of ARGOS social research data is to test it through wider sectoral surveys. AERU runs biennial surveys posted to 2000 primary producers which can deploy a range of questions generated from on-farm research methods.

In a perfect world…

Just something Hugh was working on that didn't necessarily go anywhere…

Method	Timeline	Time to Implement	Who	Priority for inclusion
Qualitative Interviews with Farm Participants	Years 1 & 2 Years 5 & 6	Half Day	Lesley, Chris	High
Focus Group Interviews	?	Half Day	?	Low
Strategic Interviews (sectoral)	Years 2 & 3	1 hour (20-30 per annum)	?	High
Cognitive Mapping	Years 1 & 2	40 minutes	?	Medium
Vignettes	?	?	?	?
Diaries	?	Independent	?	?
Card Sorting/Q Sorting	?	?	?	?
Visual Techniques	?	?	?	?
Participant Observation	?	?	?	Medium
Farm Tours	?	1 hour	?	Medium
Participatory Appraisal	?	?	?	Low
Quantitative Surveys for Farm Participants	Annual	?	?	High
Quantitative Surveys for Wider Sectors	Bi-Annual	?	?	High

Timeline for Social Research