

**CAVES: Complexity, Agents, Volatility, Evidence and Scale**  
**Grampian Region Pilot Study Report**

Lee-Ann Small

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Macaulay Land Use Research Institute  
Craigiebuckler, Aberdeen

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# Executive Summary

## Introduction

The purpose of the CAVES Grampian study is to provide policymakers with scenario analyses for land use change in the region over the medium term, based on computer-generated models of land use change processes. These models will be based on findings from interviews with agricultural land users. This report is a summary of findings from the pilot field research study for the CAVES Grampian research project. Interviews were conducted on 12 farms and 3 estates in the Upper Deeside Region (Finzean to Braemar) from February to April 2006. These largely qualitative interviews addressed issues surrounding the experience and causes of land use change, and in particular the role of social networks. The purpose of this report is to bring together findings to date and identify next steps, in order to both inform and seek feedback from interested parties.

## Pilot Study Findings

Analysis of pilot study interviews revealed subtle changes in land use on Upper Deeside farming operations over the past 20 years: increasing scale of operation and intensity of livestock production, reduction in number of commodities, decreased use of inputs and increasing participation in environmental programming. Estate managers reported actively encouraging their tenants to engage in environmental programs and to increase the scale of their operations. As a result, total numbers of tenancies have reduced and there has been limited development of hobby farming in highly tenanted areas. Due to the subtlety of land use changes in the region, it will be important to develop an operational definition of 'land use change' for the purposes of the research.

The primary reasons given by land managers for changes in land use were economic – the perceived necessity to respond more efficiently to market and subsidy trends, in order to maintain profit margins. Increasing mechanisation and reduced farm labour availability were also of importance. Due to the nature of agricultural production, however, changes in land use and farming operations in general do not respond immediately to changes in economic signals. Agriculture is highly based on seasonal and climactic factors – land managers perceive it to be unfeasible to make rapid changes to either livestock or crop production. Land managers also believe that commodity markets follow cycles, and that quick response is imprudent. Similarly, land is a scarce resource and therefore must be acquired when it becomes available, not according to a long term plan. Thus, land use change processes are both slow and complex.

The role of social networks in land use change were initially considered on four levels: access to information, social norms, resource sharing and community engagement. From the interviews, it became clear that the reputation of the primary farmer is also important for securing access to rented land. This appears less true for markets. Land managers reported accessing information from discussion groups, printed publications, SAC advisors, contract workers and input salespeople visiting the farm, informal

farm visits, international farm visits and general observation of other farmers' activities. They also identified social norms about the meaning of being a good farmer. They reported that sharing of labour and machinery is limited, but has increased in recent years due to financial necessity. All of the interviewees were members of the National Farmers Union, and most had other active community involvement. At this point in the research it is difficult to say what impact social networks are having on land use change, as although the respondents varied in terms of social network engagement, they appeared to be making fairly uniform changes in their land use.

### **Next Steps**

A pilot study is a standard part of interview-based field research, undertaken in order to test and develop the research method, as well as to identify the potential outcomes of the research project. The identified actions, to be undertaken prior to the next phase of research, are as follows:

- Manage interviewee targets to reflect a wider range of land managers
- Develop an operational definition of 'land use change' for the purposes of the research
- Refine the question guide to more specifically address quantitative aspects of land use change and social network participation.
- Establish a formal methodology for deriving decision-rules from research findings

A total of 50 interviews with land managers (farmers and estate managers), including approximately 10 'successors' are planned for the CAVES project as a whole. These will be supplemented by approximately 20 key informant interviews (members of the agricultural industry who are not land managers). Interviews will occur throughout 2006, in three phases: February to April (pilot test); June – July (primary research); October – December (testing of decision-rules and follow-up).

## **Introduction**

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A pilot study is a standard part of interview-based field research, undertaken in order to test and develop the research method, as well as to identify at an initial stage the potential outcomes of the research project. The purpose of this report is to bring together findings to date and identify next steps, in order to both inform and seek feedback from interested parties. This report draws solely on the interviews conducted as part of the pilot study. Subsequent work will integrate and compare findings with existing research, such as Census statistics and previous academic studies.

## **The Pilot Study**

Interviews were conducted with land managers and key informants in the Upper Deeside Region (Finzean to Braemar) from February to April 2006. Respondents represented 12 farms and three estates. The total number of respondents was 19, reflecting four interviews in which there were more than one interviewee. Interviews were conducted utilising an interview guide, which was based on the general research questions (identified later in this document). The interviews were recorded and notes taken; complete written transcription of the interviews is in progress. Analysis of the transcribed interviews will be ongoing throughout the research. Interviews ranged from 45 minutes to two hours in length.

In order to maintain the confidentiality of interviewees, it is not appropriate to identify detailed demographic characteristics of participants, or details of the individual land holdings, at this stage in the research. In particular, it would be difficult to conceal the identities of the three estates. However, it can be said that the estates ranged widely in size and organisational structure. All three had tenant farmers, but only one was actively 'farming' part of their agricultural land at the time of the interview.

More detail is possible among the farmer respondents. Overall, the farm operators ranged in age from early 40s to late sixties, with the bulk of the farmers being in their 60s. About half of the farmers had some post-secondary education, although only one had a university degree. Five of the farms had one full-time worker (the farmer), three had two, and the remaining four had three or more people working on the farm full time. This does not include part-time staff, of which all of the farms had some. The respondents' tenures as primary farmer on their operations ranged from 6 to 43 years, with most having operated their farm for at least 20 years. Eight of the twelve

farms had identified successors, who were currently active in the farm business.

Farms ranged in size from 365 to 5500 acres; total amount of arable land ranged from 0 to 700 acres; the rest was largely pasture, with some woodland. The farms were typically a mixture of owned and rented or tenanted land: three farmers utilised entirely tenanted or rented land; only one of the farmers owned all of the land currently being utilised in his operation. Eleven of the farmers produced beef, six produced sheep. Those with arable land (about half) typically utilised it to produce barley, silage and improved grazing. Some of the farmers also produced malting barley, potatoes, turnip and oilseed rape. Most of the farm households had some form of off farm income; often a family member employed off the farm, but also contract agricultural work and diversification activities.

Although the estate managers interviewed were quite varied, in terms of scale and organisational structure of their estate, the farmers in the pilot study were fairly uniform – all large-scale and expanding producers, arguably the most ‘successful’ in the study area. It will therefore be important in subsequent work to be certain of a balance of respondents, including those with smaller scale and less overtly ‘successful’ farming enterprises. A number of possible participants of this description have already been identified by a key informant.

## **Research Questions**

- 1) How has agricultural land use in (a study site in) North East Scotland changed over the past 20 years?
- 2) Why (and how) does agricultural land use change?
- 3) What is the role of land users’ social and informational networks in this process?

### **Question One: Land Use Change**

With the exception of the farmer who began his operation in 2000, all of the farms had increased significantly in size over the duration of the current farmer’s tenure, often doubling in terms of acreage. Farmers also reported reducing the number of commodities produced: sheep and beef production has intensified, while production of barley, potatoes, turnips and other crops have reduced, in favour of increased grazing. In addition to the increasing intensification, several of the farmers reported switching from producing ‘store’ sheep and cattle (livestock sold prior to reaching market weight, to a third party who would then fatten and sell to market) to finishing their livestock themselves. Farmers are also reducing their inputs, particularly fertiliser, although not to the extent of undertaking organic production.

Up until 10 years ago, all three estates had operated their own farming operation within the estate lands, in addition to multiple long term tenancies. Two have ceased to do this, in favour of increasing the land they rent to their tenants. The third had increased the land it farmed, in an effort to maintain a

'viable' farming unit. This increase was the result of absorbing a tenanted farm when the tenancy ceased, not from a re-orientation of other estate land (such as forestry). In general, the estates do not appear to have increased or decreased their total 'agricultural' land to any degree. However, one reported an increased demand for rental of hill ground, ostensibly for grazing, but in fact to satisfy Single Farm Payment requirements of holding agricultural land. As a result, this land is designated agricultural, but is not in fact being used for this purpose<sup>1</sup>.

All of the interview respondents were involved to some degree in government sponsored environmental programs, most commonly the Rural Stewardship Scheme and Land Management Contracts. The interview guide at this point does not include identification of specific amounts of designated environmental land use; it is therefore difficult to quantify the land use change involved. In most cases, land managers reported applications to fence off dykes or other environmentally important areas, maintain bird habitats and build recreational paths. The program engagement thus appears to have reduced agricultural land use in general by small amounts, and put restrictions on the management of specific pieces of agricultural land.

### **Analysis of Question One Findings**

The Grampian region was selected as a CAVES study site for its relative stability – in terms of land use change - in comparison to the other case study areas. Results from the pilot study suggest that although no major changes in land use have occurred, there have been subtle changes: increasing scale of operation, reduction in production of cereals and arable crops, intensification of livestock production, and increases in environmental actions, which result in either land being removed from cultivation, or cultivated differently. Land managers did not report significant transition of land out of agricultural production to forestry, but some land had been utilised for urban development.

The pilot study was conducted using a question guide, in order to identify subjects of conversation, rather than defining specific questions. As a result, not all the interviewees identified the specific amounts of land on which production had changed and the time at which this occurred. This issue is further clouded by the differences in tenure – some land managers could speak about decisions made 40 years in the past, others less than a decade. Change was also often gradual and/or part of a crop rotation cycle, and therefore difficult to accurately date. Significant amounts of new land were added to the enterprise over time, and the history of land use on these (prior to their acquisition) was not discussed. It will be important in subsequent work to identify specific timeframes and level of quantification for this topic.

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<sup>1</sup> In order to collect the Single Farm Payment, recipients must operate an established amount of agricultural land. Due to technicalities in the legislation, it is possible to rent or sell the farm on which the original assessment was based, and rent much cheaper land in the hills instead. As there is no requirement under the legislation to maintain production, this rental of 'grazing' land does not result in actual grazing. This can be expected to skew statistics on 'agricultural' land use in future years.

In the research plan, it was anticipated that a working definition of 'land use change' could be derived from interviewee perspectives. This has not been the case. Land use change has been fairly subtle, and therefore difficult to accurately define. While a change from cereals to grazing is clearly a land use change, is this also true for a change between cereal crops? How much intensification of grazing has to occur before this constitutes a land use change? Similarly, the issue of scale has become important – through environmental programs, very small amounts of land are sometimes fenced, or headland sizes increased. How small a scale of land use is worth measuring? This is an issue that will need to be addressed prior to engaging in further field research.

## **Question Two: Causes and Processes in Land Use Change**

### **Causes of Land Use Change**

The primary reason given by land managers for change in their farming operation was economic – the need to optimise income from their agricultural holdings. The increasing scale of operation, the reduction in number of commodities, the increasing intensification of production, decreasing use of inputs and decisions to eliminate the 'middlemen' in terms of selling stores, were all justified on economic grounds. All of the land managers were clearly of the belief that expansion in the size of the business – including the land base – was necessary to 'stand still' in terms of business performance. Actually making progress meant expanding still further. To that end, farmers were expanding their own businesses, and managers reported increasing the size of existing tenancies through land redistribution – rather than seeking new tenants – when existing tenants retired.

Engagement in environmental programs also appeared economically motivated – both estate managers and farmers saw these programs primarily as a means of increasing income and/or recouping reductions in government production subsidies. This is not to say that they did not see other benefits of environmental activity, simply that this was not their primary justification for undertaking these actions. Engagement in environmental programs appears widely accepted in the farming community, although farmers expressed frustration with the perceived loss of autonomy that results. However, farmers are not opposed to producing biofuels – and indeed, one of the farmers already had a biofuel contract. Others reported willingness, but their perception is that there are no local processors, and thus they question their ability to market this product.

Land managers are also expecting changes in government subsidy structure – specifically the introduction of the Single Farm Payment – to have a significant impact on how land managers operate, but they believe these effects are largely unrealised at this point. They see change happening in a year or two, when farmers realise that they are producing at a loss. Most farmer respondents indicated that they having been 'sitting tight' to see how their incomes looked in 2005, before making any major decisions. Although they were frequently noncommittal about their own plans, their general perspective was most farmers would extensify their livestock production – reduce inputs and produce less livestock over the same land - but that a few

would 'scale up' and intensify production in order to benefit from economies of scale. They also predicted a shift in land use – the likelihood that less arable land would be used in cereal production, and instead be used as improved grazing. Marginal land – where even grazing was poor - might be taken out of production altogether, as it would no longer be economically viable to maintain fences in these areas. As a result, farmers expect agriculture to 'come down from the hills', and be focused in the most environmentally suited areas. The caveats to this are the use of sheep for controlling tick – sheep are being returned to areas where they had been removed in order to facilitate gaming, so that through regular dipping with insecticide, ticks numbers are reduced, and grouse populations allowed to flourish. Sheep in shooting areas thus have additional value.

Landlords influence land use through the restrictions they put on the land they rent, or tenant. In recent decades, estate managers have reduced the length of tenancies, to the point where some farmers tenant on a year to year basis. This reflects estate concerns that 'right to buy' legislation will result in a reduction in their land base. Investment in buildings, particularly for diversification but also business expansion, is an area of contention between estate managers and tenants. The high amount of estate-owned land in the study site has limited the development of 'hobby farming' – there is limited land available for purchase, and landowners reported being unwilling to let land for this purpose. The estate managers also reported actively encouraging engagement in environmental activities, in order to increase the viability of these units. Estates participate in these as they are able, and are also known to retain pieces of land which have been utilised for environmental purposes, when a tenant retires. This leaves the estate with the income from the environmental activity. Some estates are also encouraging the development of housing and refurbishment of buildings on the estate, in support of diversification/tourist development and affordable local housing.

One of the reasons for choosing Grampian region for the CAVES study was the relative stability of land use in the region over recent decades. Part of this appears due to the lack of viable alternatives for agricultural production. Most producers indicated that they were producing that to which their land is best suited, in most cases cattle and sheep. Hill ground is primarily useful for grazing. Even switching between sheep and cattle has difficulties: sheep can graze in some areas where cattle cannot; sheep require different standards of buildings, handling facilities and fencing; and the skill set and physical demands of managing the two types of livestock are quite different. Farmers who are not set up for one or other of the commodities are thus reluctant to make the transition; farmers with both have often decided on the balance between the two as a reflection of optimal land use, rather than commodity prices. Some farmers also commented on the differing time limitations of the two commodities – cattle were perceived as a ready source of cash in downtimes, whereas sheep can only be marketed at a specific age, and receive best prices at certain times of the year.



## **Processes of Land Use Change**

The phenomenon of 'sitting tight' in response to changing markets was a theme throughout the interviews, and reveals the dynamics associated with time, which impact on land use decision-making. Farming is a highly time-dependent occupation: crops grow in seasons, and are usually involved in a rotation; livestock have reproductive cycles, which impact on the speed at which products can be put on the market and in what volume. Land managers also identified their belief in market cycles – that commodity prices have highs and lows both during and between years. The unpredictability of these cycles between years, combined with the length of time it takes to initiate, increase/decrease or cease production of a commodity, has taught them that quick changes are not wise: by the time a change in production has been achieved, the market may well have changed.

Land acquisition is also largely a matter of timing, as availability is usually unpredictable. In general, the farmers did not actively seek out additional land, either for purchase or rental, in response to profits or anticipated market shifts. Instead, they acquired land when it became available. Due to the importance of acquiring land in close proximity to the existing holding – and the rarity with which this occurs - farmers reported buying land when it came up for sale, almost irregardless of their financial status at the time. Land rental often occurs informally: land is 'offered' to a neighbour or local resident, rather than put on the open market. Landowners renting their land are somewhat selective in who they rent to, usually offering it to individuals who have proven their ability to care for the land (and fences). In both cases, access to new land means making decisions in a fairly short time period about how to 'make it work' within the enterprise. This is a factor of labour requirements, likely yield and environmental potential – the potential of the land to be used to satisfy the requirements of environmental programming.

Changing subsidy regimes add another layer of complexity to dealing with issues of time. Several of the farmers reported that grant schemes, typically for building construction or environmental projects, often occur on very short notice, leaving them a matter of weeks to respond to new opportunities for funding. This often means the rapid acceleration of existing plans, or establishment of new ones without lengthy consideration. Longer term plans and commitments also pose problems – some of the environmental programs require multiple year commitments to activities such as crop rotation. While farmers welcome promises of funds over a multiple year period, they are concerned with the lack of flexibility this gives them in terms of planning – often the weather in the spring determines the amount of a specific crop that is planted; the relative number of weeds in a field determines precise crop rotation. Farmer respondents expressed concern over the conflict between their need for flexibility, and the commitment requirements of environmental programs. The uncertain policy environment is also a concern, as it impacts on land manager ability to plan long term.

Labour was also a major issue identified by farmers. The number of people working on farms has reduced dramatically in recent decades, despite the increase in farm size. This is a result of decreased need on the farm due to

mechanisation, and decreased availability of labour. It requires planning to increase or decrease labour. The addition of a son to the business typically resulted in the gradual increase in agricultural production – while the son worked off-farm – in order to integrate him into the business full-time. An opportunity for accessing more land was often seen as the opportunity to add a son to the business on a permanent basis. Similarly, the lack of a successor reduced the need to acquire more land or continue ongoing business expansion. Several farmers identified issues surrounding the security of hired labour – good, permanent farm labour is apparently becoming increasingly difficult to find. As a result, farmers are reluctant to expand their operations to depend on non-family members. Even if they could find good labour, they risk losing it again and being unable to replace it. As one farmer said “it’s easier to breed them than hire them”. A lot of the labour on farms in the study is thus based within the immediate farm family.

Although most of the farmers reported decreasing their use of chemical inputs in an effort to reduce costs, the respondents were adamant that conversion to organic production was not something they were seriously considering. Most farmers identified the issue as being “the last 20%” – their concern that the final step towards organic production - all pesticides and fertilisers removed – would leave their crops and livestock at risk to disease. They were seriously concerned that they could lose entire crops, or large numbers of livestock for want of a treatment that was readily available. Although this risk clearly presented an economic constraint – and several farmers pointed out that organic prices were not that much higher than for non-organic production – the concern appeared to be more the restriction on “good farming practice” – by which they meant use of pesticides and antibiotics. A couple of the farmers also commented that switching to organic production would be like “going back to the hoe” – a step backward in terms of technology, which again reflects their general perception that ‘good farming’ means using recent technological advances.

Many of the respondents flagged up the issue of new entrants, recognising that it is almost impossible for young people to start farms independently of their parents. This is a reflection of both the capital intensity of current farming operations and the difficulty of acquiring land. Estate managers and tenants both identified that when land becomes available, estates tend to rent it to existing tenants, rather than seeking out new ones. While this enables existing tenants to expand their operations, a characteristic of farms throughout the region, it seriously limits new entrants. Similarly, land values have increased so much in recent years that the only individuals able to purchase them have equity in their existing agricultural holding. This has also kept many tenants from purchasing land. Respondents saw the issue being augmented by the Single Farm Payment – agricultural subsidies are only available to those who operated farms in the past, or to those who purchase the right to receive them. The perception of respondents is that many farmers are retaining these rights and ceasing production. Although this may leave land available, they are concerned about the financial viability of resultant operations.

### **Analysis of Question Two**

Interviewees identified multiple causes for land use change, primarily economic (including environmental program incentives), but also mechanisation and labour availability. These perspectives will be further explored in ongoing research. Although some dynamics of land use change processes have been revealed in the study, the multiple issues and processes involved will make it challenging to accurately identify 'decision-rules' about land use change, for the computer model. This was recognised prior to engaging in the study. However, having completed the pilot study, it is clear that a mechanism for deriving decision-rules from respondent data requires further development.

### **Question Three: the Role of Land Users' Social and Informational Networks**

Respondents reported acquiring information from multiple sources, typically discussion groups, printed publications from government and private sector (SEERAD, NFUS), SAC advisors, contract workers and input salespeople visiting the farm, informal farm visits, and general observation of other farmers' activities. Most lamented the loss of the local marts, but reported that a lot of informal interaction happens at Thainstone. It is difficult to say which of these information sources is most important – a decision typically involves several: reading about a new grant, discussing it with whoever comes to the farm that day, checking with the SAC advisor, working through the financial logistics, not necessarily in that order.

The importance of 'being a good farmer' became clear in interviewees responses to questions about organic farming. The meaning of being a good farmer was clearly shared between the farmers, as is already evident through discussion of perspectives on organic farming. The farmers in the study all clearly knew each other, and often volunteered comments on the perceived quality of each others' businesses. When asked directly about social pressures, however, they denied that this was an important factor in their decision-making. They clearly viewed themselves as "producers of food", resenting the apparent lack of appreciation in the markets for their efforts in this area. Similarly, they clearly believed that subsidies should be oriented to production – that people should not be able to receive the Single Farm Payment without producing agricultural goods, and that in doing so, they were making it difficult for young people to enter farming. At the same time, however, the financial reward of the SFP is so great that some of them were clearly considering it, despite the social censure implied. Similarly, respondents acknowledged that diversification activities are undertaken – usually to generate income – and lamented this need. Two of the farmers in the study appeared to be outside of the farmer network – one, because his practice of farming was deemed too aggressive (constantly trying new things), and the other because he was not a 'real' farmer, being perceived as more engaged in his diversification activity than 'real' agricultural production. It is difficult to say what implications this would have had for their business development. Both had actively established markets for their produce outside of Thainstone Mart.

It was speculated in the research proposal that farmers would increase their sharing behaviours (labour and equipment) in response to economic pressure. To some degree this appears to be true. Most respondents indicated that they do a small amount of equipment sharing – typically pieces which are not expensive, and not high demand. This practice has increased in recent years as predicted. However, they reported great reluctance to share important equipment – particularly that used for harvesting – due to logistic issues: farms that are close enough to share equipment typically also need to harvest on the same day. There is also concern about responsibility for equipment damages and maintenance, and sharing was considered a potential area for serious fall-out between neighbours. This suggests that expansions in formal equipment sharing between neighbours may be minimal. Sharing of labour is often informal, on an emergency type basis – neighbours will lend a hand in events ranging from illness to calving difficulties, but not as a formally established practice. Although some respondents were members of the Ringlink Machinery Ring (which also can supply labour) most reported that they were located too far away to make good use of this resource. As labour on the farms continues to decrease, some farmers are looking to the Machinery Ring as a ‘back-up’ in case of emergencies, such as illness of the primary farmer or machinery breakdown.

All of the estate managers and farmers in the study were members of the Scottish National Farmers’ Union. Most farmers were fairly active, attending meetings. This is unsurprising, as the initial list of farmers was given by the local National Farmers Union branch secretary. Several were members of the Scottish Tenants Association, which they reported finding very helpful. Most were also actively involved in their local community, through participation in highland games, local trusts and other associations. Unlike participation in specifically farm-oriented groups, these there not seen to be of particular value to the farm, but rather constructed as a means of social diversion separate from the farm. Several respondents did indicate their belief that many of these community type organisations are highly dependent on farmers both for leadership and for provision of practical support (machinery and labour).

All three of the estate managers identified an orientation towards the community, in the sense that the estate management, while recognising the need to maintain the estate as a business, also recognises the role of the estate in the community. Provision of affordable housing is one of the primary ways they see this role playing out. Managers also expressed concern about maintaining other local businesses, as well as local jobs and community-based activities. All three managers are involved in community groups, as part of their role of estate manager.

### **Analysis of Question Three**

At this point in the research it is difficult to say what impact social networks are having on land use change, as although the respondents varied in terms of social network engagement, they appeared to be making fairly uniform changes in their land use. Most livestock are marketed through Thainstone Mart, rather than private sales, so social influences can be expected to be

somewhat minimal in terms of establishing market contacts. The two socially isolated farmers reported networks beyond the local area, and appeared to be economically successful. Information on innovations and funding access is widely available through print media, and farmers have clear visual access to their neighbours' activities – this draws into question whether information access is a major issue. Social norms are significant, but seem outweighed by economic concerns.

## **Other Themes**

### **Shocks and Stresses**

A particular interest of the research is how land managers respond to unexpected events. One of the questions in the interview guide raised the issue of major problems the farmers had dealt with in recent years. The expectation was that implications from BSE and foot and mouth would be raised in response. Although this was true, these disease outbreaks did not have the dramatic impact on farm businesses initially expected. Respondents indicated that it was a big issue at the time, but that in recent years, beef prices had been good. In being asked to identify the most serious issue they had to deal with, they were as likely to say paperwork and labour shortage, as to identify the disease outbreaks. In terms of changes in farming, the most common responses were scale of operation, reduced number of commodities, reduced staffing, paperwork and mechanisation.

Several respondents identified the heavy burden of paperwork, in order to achieve government subsidies. They also were unimpressed by the monitoring efforts of government officials – two of the respondents had had audits, whereby the authority showed up without warning, and stayed for at least two days, reviewing the account keeping. One respondent indicated that bookkeeping alone required one full day a week. The Single Farm Payment has not reduced this responsibility – respondents reported that paperwork has actually increased as a result. This reflects the paperwork involved in environmental programs, which has occurred to compensate for subsidy reductions. The perception of farmers was clearly that completion of paperwork was tied to subsidies – with a direct link to their frustration that paperwork is increasing while subsidies are decreasing. A couple of the farmers indicated that the up-side of a complete loss of subsidies, would be that they would no longer need to comply with government regulations and bookkeeping requirements in order to run their operations.

The other concern raised was labour shortage. Farming has changed considerably in recent decades in response to mechanisation – jobs that once took several men several days, are now completed by a single man in a matter of hours. Thus, the perceived labour shortage is occurring despite a significant decrease in demand for labour on farms. All of the farms, despite their increase in size, utilise less labour than in previous decades. However, this is also a reflection of economic concerns, and the inability to pay wages from existing farm income. A couple of the farmers reported difficulty “competing” with the oil industry in Aberdeen for young workers. Several farmers expressed concern that farmers are becoming “one man bands”, with the implication that if something happens to that one man, there is no one to

cover for him. This was also identified as a reason for the perceived decrease in farmer participation in discussion groups – that farmers are working such long hours that they do not have time for the social activities that were once an accepted part of life. These respondents also raised concern that the decreasing staffing on farms would lead to problems in animal welfare – that farmers are stretching themselves to make ends meet, and as a result do not have the time for monitoring animal welfare that they had in the past. They see this issue increasing, as margins continue to shrink.

Several of the interviewees were located within the boundaries of the recently established Cairngorm National Park. They were asked how they expected the park designation to impact on their farming operation. In general they reported that the designation was too new to have had any major impact, and that because they already had 'less favoured areas' designation, they expected the change to be minimal. They were concerned that the addition of administrative staff to the park would result in further additions to the paperwork they were already completing for their farming operations.

Another issue raised by respondents is the perceived losses in autonomy, primarily through increasing government restrictions, but also through lack of financial flexibility. They reported decreasing profit margins, and the belief that few if any farmers can continue to produce without subsidies. The increasing commercial orientation of farms is seen as a threat to herdsmanship – that the traditional skills of farming are not being valued. Most value autonomy as a primary characteristic of being a farmer – and see the increasing regulations as putting them into the position of being a government employee, but without the benefits.

### **Next Steps**

A total of 50 interviews with land managers (farmers and estate managers), including approximately 10 'successors' are planned for the Grampian CAVES project as a whole. These will be supplemented by approximately 20 key informant interviews (members of the agricultural industry who are not land managers). Interviews will occur throughout 2006, in three phases: February to April (pilot test); June – July (primary research); October – December (testing of decision-rules and follow-up). The bulk of the interviews are expected to occur in the primary research phase.

Based on the analysis presented in this report, the following issues have been identified, which must be addressed prior to engaging in further field research.

- Manage interviewee targets to reflect a wider range of land managers
- Develop an operational definition of 'land use change' for the purposes of the research
- Refine the question guide to more specifically address quantitative aspects of land use change and social network participation.
- Establish a formal methodology for deriving decision-rules from research findings

These are in addition to the transcription of existing interviews, which is already in progress.