THE PRINCE'S COUNTRYSIDE FUND

Is there a future for the small family farm in the UK?

UNIVERSITY OF EXETER | LAND, ENVIRONMENT, ECONOMICS AND POLICY INSTITUTE

Is there a future for the small family farm in the UK?

A report to The Prince's Countryside Fund

June 2016

Research Team: Michael Winter[1], Matt Lobley[1], Hannah Chiswell[1], Keith Howe[1], Tim Wilkinson[1] & Paul Wilson[2]

1. **Land, Environment, Economics and Policy Institute (LEEP), University of Exeter**
2. **Rural Business Research Unit, University of Nottingham**

This report should be cited as:
Winter, M. and Lobley, M. (2016) *Is there a future for the small family farm in the UK?* Report to The Prince's Countryside Fund, London: Prince's Countryside Fund. ISBN 978-902746-36-7

Table of Contents

Acknowledgments

We are grateful to other members of the research team for their contributions to this report: to Hannah Chiswell for her work on the literature review and data analysis; to Keith Howe for advising us on agriculture's terms of trade and contributing to the literature review; to Tim Wilkinson for help on the literature review; and, of course, to Paul Wilson for his painstaking analysis of FBS data. We are also grateful to all those who took part in interviews and attended a workshop in Taunton; the individuals and organisations who submitted evidence; Tony Pike and Alison Wray at Defra; those who supplied case studies; helpful feedback from PCF Trustees and peer reviewers Richard Soffe of Duchy College and Nick Millard of Michelmore Hughes. Emma Tranter prepared the tables, formatted the report and provided administrative support throughout. Above all we are grateful to The Prince's Countryside Fund for giving us the opportunity to conduct this research and for the support and encouragement throughout the research process from Lord Curry as chair of the trustees and PCF staff Claire Saunders, Helen Aldis and Maddy Fitzgerald.

Foreword

Over the last two or three decades, the farms which populate the landscape of the United Kingdom and have shaped its topography through centuries, have experienced profound change, and whatever the consequences of the European referendum decision will continue to do so. Their resilience has been continually tested. Notwithstanding the challenges of policy and paperwork, they have also had to deal with the day-to-day demands of farming: price volatility, disease and climate change, and a public increasingly unfamiliar with an agrarian lifestyle. Not surprisingly, many are struggling. A recent report for The Prince's Countryside Fund demonstrated that half of all farms no longer make a living from farming itself and a fifth are losing money before even accounting for family labour.

Does this matter? The Prince's Countryside Fund believes it does and that is why we commissioned this wide-ranging and in-depth report from Professors Michael Winter and Matt Lobley of the University of Exeter and their team, to whom I offer my thanks for their hard work and dedication.

The Fund has a track record of providing practical help to farming businesses and the rural community through its grant giving, direct action projects and advocacy, supported by a strong network of business supporters and committed individuals. This report will focus our efforts and, we hope, those of our agricultural institutions and policy makers.

The report concludes with a series of recommendations which The Fund believes will be vital for farm businesses, and a catalyst for action for the agricultural sector and policy makers in order to retain the wonderful mosaic of farm types we have in the UK. In the uncertain times ahead we fervently hope that it will allow this particular "endangered species" to be given the best possible opportunity to survive and to thrive for many generations to come.

Lord Curry of Kirkharle
Chairman, The Prince's Countryside Fund

Executive Summary and List of Recommendations

Introduction

For the purposes of this research, we consider a small farm to be a farm that needs the labour input of up to two people, or to use technical language, a standard labour requirement of two full time labour equivalents. This notion of a one to two-person farm, we feel, best captures the small family farm that characterises the sector we are interested in. The definition of family farming is even more elusive than 'small farm'. We use it because in a common-sense way most people know what they mean by a family farm. The extent of the decline of use of hired labour in agriculture is such that many farm businesses are family farms in terms of being family owned businesses worked both managerially and largely operationally by family members. The majority of small farms are family farms in these terms, but not all family farms are small.

The merits or otherwise of *small* family farms have not been so keenly debated in the UK in recent years as was once the case, and this is reflected in a relatively modest recent literature on the influence of farm size and the positive or negative aspects of small farming. Nevertheless, advocates of small family farms regard their contribution as distinct and worthy of support. One of the main purposes of this report is to examine the extent to which these claims for the virtues of small or family farming can be justified and, if a case can indeed be made for their continued role in UK agriculture, what might be done to improve their viability and resilience. It is very clear, as illustrated in this report, that the current challenges facing agriculture as a whole and, we would argue, small farms in particular, are very grave.

We set out to explore the future for small family farms with the following specific objectives:

1. To identify the extent and pace of change in the number of small farms and to consider the drivers of change.
2. To provide insights into the types of farming that may be supplanting traditional small farms.
3. To identify the characteristics of small farms and what they contribute to agriculture, the rural economy and the countryside, including the positive role small farms might play in responding to contemporary global challenges associated with food security and climate change; and how their decline might impact on food production and environmental management.
4. To identify ways in which policies and market mechanisms might be adjusted to increase the viability of small farming.
5. To consider ways in which small farmers might improve performance and viability including consideration of efficiency, added value, diversification, co-operation, and succession.
6. To make recommendations.

The research on which this report is based took place between November 2015 and May 2016, and relied for the most part on the use of research completed or already underway, as well as the use of existing data sets to throw light on the small farm question. This combination of methods and sources comprised a literature review; specially commissioned analysis of Farm Business Survey Data; analysis of a 2016 postal survey of 1,251 farmers in South West England (The SW Farm Survey); a detailed case study of land occupancy change in a single West Country parish since 1941; key interviews with 7 agricultural sector experts; a workshop attended by 17 farmers and other experts, held in May 2016; and 21 responses to a call for evidence. Taken together, we argue that the evidence from this range of sources presents a compelling and rigorous case.

The small family farm over time

When observing recent changes in the number of farms (small or otherwise) it is easy to forget that the apparent constant process of farm size change is actually a fairly recent phenomena and that until the 1950s and 60s farm size was relatively stable. Data supplied by Defra from the annual June Survey indicated that since the beginning of this century small and very small farms have experienced a much steeper decline in numbers compared to their larger counterparts. However, such 'official' statistics give an incomplete story and obscure the extent and pace of change. For instance, they may under-estimate the number of very small or micro holdings which fall below the June Survey radar. Conversely the number of active famers may be exaggerated when, for tax reasons, many farmers appear in the June Survey as active businesses when in reality they are no longer actively farming. Moreover, the June Survey fails to identify a range of 'unconventional' occupancy arrangements. The collective impact of this may be to over-estimate the number of active small farms whilst under-estimating the number of large farms.

We examined some of these issues through a detailed case study of a single west country parish spanning a period of seventy-five years and this revealed a complex pattern of change with the consolidation of land in the hands of large farmers and the number of farms declining by a half; alongside some new farm formations and fragmentation of land holdings. This confirms earlier work which emphasised the stability of family farms as the main institutional units in the countryside at the same time as ever more complex land occupancy and management arrangements and a greater diversity of ways of 'being a farmer'. Data from the SW Farm Survey also points to the longevity of farming families, alongside considerable farm business change in recent years. On average, farming families in the survey have been farming either the same farm or in the general vicinity for 105 years. Only 8% were new entrants in the strictest sense of being the first member of their family to enter farming and who had not personally farmed anywhere else.

Small family farms, like any others, are subject to a wide range of influences on their behaviour including powerful economic, policy and regulatory drivers as well as internal farm family or farm household drivers of change, and while it would appear unlikely that there are any specific, unique *small* farm drivers of change, there may be a specific small farm dimension or response. A considerable body of evidence suggests that family events and processes such as births, marriage, ageing, succession and retirement can trigger change and restructuring in agricultural businesses. In terms of small family farms, there is a well-known association between small farm size and a lack of a successor which will make it harder for the older generation to step back if there is no one else to do the work.

Broadly speaking, farmers face two business choices in order to cope with declining economic fortunes: either to focus on a farming solution or to redeploy resources away from agricultural production. In reality, it may be a combination of the two or farmers may vacillate between the two courses of action with periods of off-farm work generating income interspersed with a focus on the farm. There are, of course, two further options open to farmers. First, they may cease farming, either entirely through selling up the farm or by letting their land. Or secondly, they might tighten the belt and continue business as usual. One of our interviewees highlighted the role of the Basic Payment Scheme in facilitating the latter option.

Looking to the future, evidence from the SW Farm Survey suggests that for a significant proportion of operators of small farms, the near future will see them retiring or otherwise leaving agriculture. It is entirely appropriate in many instances that this should be so. Life decisions have to be made and people retire from work. What is of concern to us is whether the ranks of these small farms can be replenished by active and economically vibrant new small farms or whether, as seems more likely

unless current trends are modified or reversed, their land and property is taken up by a combination of expanding large farms and residential life-style purchasers.

The distinctive contribution of small farms

Advocates of the small family farm make a strong case for the positive contribution that such farms make to rural life and the countryside. Although evidence is uneven, as suppliers of local food and labour, often deploying a deliberate strategy of connecting with consumers, small farms are well placed to contribute to their communities.
Evidence from the SW Farm Survey suggests that small family farms support a greater density of employment, employing more workers per unit area than larger farms. Submissions to the call for evidence identified that because of the challenges faced by small farms they have to do things differently and have a strong motivation to innovate.

The social dimension of the role of farms ranges from creating employment, helping to sustain rural services and community institutions, through to the personal benefits of working on a small scale farm and even contributing to the national character. Whilst the stakeholder workshop identified manifold contributions of small farmers playing a community role such as on Parish Councils and removing fallen trees, the evidence available from previous studies identifies a more recent withdrawal of farmers from the community. Such lack of social interaction then affects farmers' propensity to establish new enterprises as well as having an effect on their well-being.

Small farmers are more likely than their larger counterparts to see farming as essential to the local community and contributions to the call for evidence provided many examples of their support to local social capital. The available empirical evidence suggests however, that the contribution of small farms to the environment is more complex. Contributors made the case for their farming in an environmentally friendly manner and while small farms only manage a small proportion of the land, they do play a fundamental role in the collective provision of rural environmental services, although small farms appear to be less equipped than larger ones to meet the challenges of soil and water quality management.

For the most part, the evidence suggests that the relationship between farm size and environmental value, community connections and so on is highly complex rather than clear cut. There is a complex interplay of size, farm type, attitudes and behaviour and in favourable conditions this interplay can result in a very positive role for small farms.

In addition to highlighting the benefits of small farms, proponents point to the consequences of a decline in the number of such farms. The loss of small farms, it is argued, is associated with fewer people on the land and fewer to play formal or informal roles in communities. Further declines in the number of small farms could mean fewer local suppliers of food and other services. The environmental implications would depend very much on what replaces small farms and it would be just as dangerous to assume that all large farms are environmentally damaging as it would to assume that all small farms are environmentally beneficial. Ultimately, rather than privileging one set of farm structures over another it a question of maintaining a diversity of farm size structures. And it is this diversity that is now under threat.

The economics of small farms

Drawing on analysis of Farm Business Survey (FBS) data commissioned specifically for this research, as well as other sources, we examined the underlying economic circumstances of small farms and explored the factors that are associated with successful small farm businesses. The FBS analysis is

based upon data from 2418 farms from the 2014/15 (the most recently available data) England and Wales Farm Business Survey. The data were weighted drawing upon the standard FBS weights in order to produce national (England and Wales) estimates.

The combination of FBS data and analysis of the SW Farm Survey provides valuable insights into the contemporary economics of small farms and, importantly, helps highlight the heterogeneity of the small farm sector. Regardless of size the most resilient and successful farm businesses run profitable agricultural enterprises as well as gaining higher than average income from agri-environmental payments and diversification, whilst relying least in proportional terms on the Single Farm Payment (now Basic Payment Scheme). In order words, profitable and successful farm businesses are good at everything they do.

Small farms, in general, are associated with more modest Farm Business Income (FBI). However, this is often supplemented by other income from off the farm (both earned and transfer payments). FBS evidence also indicates that small farms are associated with a favourable return on capital. This, combined with an equally favourable debt to asset ratio, suggests that there is a platform from which to maintain a sustainable business or expand.

The infamous agricultural treadmill means that ever larger volumes of outputs are needed for farm businesses just to stand still in net income terms. As a group, both small and medium sized farms make a loss on their agricultural account, with small farms being dependent on income sources other than those derived from the sale of crops and livestock. For small mixed farms in particular, agri-environmental payments make a substantial contribution to overall BI and proportionally, the contribution of diversification income to overall FBI is higher for smaller farms. On top of this it is notable that the Single Farm Payment contributes over 100% of FBI on small mixed farms, highlighting how vulnerable they could be to a significant reduction, or even loss, of this payment.

Other contributing factors are the relationship between the age of the farmer and size of the business relative to its performance, and the likelihood of a successor being in place, with small farmers being the least likely to have a nominated successor. This is identified as arguably one of the largest risks for the future viability of family farms. It is however worth noting that the relationship between farm size and succession is complex as some small farms are essentially retirement holdings where a successor would not be expected.

Of course, not all operators of small farms will wish to expand. The heterogeneity apparent throughout the analysis presented in our report reflects a variety of different types of small family farm ranging from what may be considered ‘main living’ small farms through to ‘lifestyle’ and ‘retirement’ holdings. Some, with little or no debt and owning their own land, may be content to ‘absorb’ adverse changes in the economics of agriculture by adopting an ever more frugal lifestyle or supplementing with income from elsewhere. Others will need to adopt various strategies to capture a greater share of the value of the farm’s output and/or achieve scale effects by collaborating with other farmers for example, via labour and /or machinery sharing.

Improving the resilience of the small farm

Before considering the implications of this research for improving the resilience of small farms, it is important to recognise that there is not necessarily a future for *all* small family farms. Powerful economic forces are continuing to drive change in farm size structures and there is a limit to which they can be resisted in the absence of fundamental change in global economic systems. As we have seen, the term ‘small family farm’ is really just a shorthand way of describing a spectrum of potentially very different farming, business and family situations, ranging from retirement holdings,

'lifestyle' farms, part-time farms, main living farms and so on. This heterogeneity in the small farm sector is likely to be reflected in a range of different futures for different farms. It also means that some small farms may be more in need of assistance than others and that different approaches might be needed for different sub-sectors of the small farm population.

We make a number of recommendations drawn from the evidence we have received, the reading we have undertaken during the course of this research project and, collectively, the many decades we have spent thinking and researching about these issues. In some cases, the development of more detailed and specific recommendations will require the additional input of specialists in order to take our thinking further, especially in areas that have been beyond the resourcing and timeframe of this research. As a general comment, we would also argue that we are not particularly well served by detailed, robust contemporary research on many of the issues facing the small farm.

Where appropriate (i.e. recognising that not all farms will want or need to change) improvements to **farm management and performance** are essential for enhancing the resilience of the small farm (or any farm). To be successful farmers require a wide range of *different* life-skills and aptitudes. A successful farmer has to have business acumen in terms of financial management (attention to costs and margins) as well as technical knowledge and know-how (agronomy, husbandry, mechanical skills), market knowledge, and social/emotional/familial intelligence and awareness. If this seems to be a tall order, we need to remember that these are the attributes to run a successful *farm* business. Even more skills may be required to run a diversified business combining farming and other activities.

There is a need for an improved understanding and analysis as to why some farmers are so much more successful than others. The data are largely associational. In other words, we know the farmer characteristics that are *associated* with good performance but we know far less about the causal mechanisms or how these various variables interact with each other. There is a need to build on this to promote improved business performance. This will require advice and facilitation and not just in the usual areas of agronomy, livestock genetics and so on but also recognising the fundamental strengths and challenges of the family business model and addressing issues of succession and retirement planning. Awareness of these issues has improved but awareness is not enough and there is little evidence that clear and unambiguous retirement and succession planning is a common feature of the agricultural sector. Generally, there is a need to upskill the agricultural sector as a whole through the provision of targeted and coordinated advice and training. Farmers should not just be passive recipients in all of this but can and should play an active role, building on the success of various skills and mentoring programmes.

Shortening the **supply chain** and gaining a larger share of the value of the end product is one route for improving the economic resilience of small family farms. Small farms are at a disadvantage both as purchasers of inputs (less able to negotiate bulk discounts) and as sellers (some buyers will not want to deal with small volumes). Collaboration between farmers offers one way to gain a scale effect but our evidence suggests that the operators of small farms are currently the *least* likely to be involved in collaborative activities.

Concerns have long been expressed regarding the 'closed shop' nature of agriculture and the barriers of access to land for new entrants as well as the interconnected issues of an ageing farm population and succession planning (or more often the lack of it). Steps need to be taken to encourage **new blood** into agriculture. Ideally this should be a combination of younger successors and genuine new entrants. Farming families should be encouraged to see succession planning as an investment in the future of their business and family. Initiatives to encourage succession and retirement planning should be encouraged and supported. It is vital that anyone engaged in offering

succession planning advice understands that successful succession involves much more than the transfer of tangible assets. The transfer of intangible assets and delegation of managerial control are essential for successful succession, as is retirement planning. Succession is not simply a tax accounting and legal issue. It can involve complex psychology; changing roles within the business, family and community; and can test interpersonal relationships. As such, it requires advisers and facilitators who are aware of these issues and who can help families steer a clear course through the succession process. In instances where farming families do not have a familial successor, incentives for share farming agreements and longer term FBTs could offer routes for new entrants as well as some modest progression opportunities. Larger estates could lay a leading role here, offering a small proportion of their land on favourable terms to new entrants.

Recommendations for farmers and farm businesses to become more resilient

1. Adopt lifelong learning through regularly accessing advice, support and information to help inform business decisions.

2. Develop good management and technical skills to assist with the effective day to day management of a successful farm business.

3. Develop and implement a plan for succession and/or retirement from farming.

4. Collaborate with other farmers and supply chain partners, including developing local networks, peer support relationships and business opportunities.

5. If appropriate, and after full market research and business advice, introduce new enterprises to diversify farm business income.

Recommendations for the agricultural sector to support small family farms

6. The formation of a task force to carry out further examination of variable performance in agriculture with the aim of providing further evidence on the causes of variable farm business performance and the factors that help improve performance.

7. Develop a concordat between the various professional bodies who give advice to famers with a view to developing a common protocol for cross-referral and communication strategy about the range of advice and support available.

8. The Farming Help Charities in conjunction with The Prince's Countryside Fund and other helping agencies should identify and equip individuals within farming areas to act as 'catalysts', guiding farmers to the information and support they need and assisting them in this process.

9. Catalysts should be encouraged to establish a 'good farming neighbours' system to allow farmer to farmer peer group support, learning from other mentoring schemes.

10. Rural estates should encourage the creation of opportunities for new farm businesses by investing in the provision of new housing for existing tenants to facilitate new entrants.

11. Rural estates should be encouraged to take a lead in assisting new entrants through either FBTs or share farming arrangements.

12. Rural estates should be encouraged to raise the minimum term for Farm Business Tenancies to 10 years to help strengthen farm businesses and encourage longer-term planning and investment with a view to policy change.

Recommendations for policy makers

13. Utilise a more flexible approach to encourage new entrants into farming through share farming arrangements and Farm Business Tenancies.

14. Consideration should be given in planning policy to allow farmers of retirement age to build a retirement house when they agree to facilitate new entrants through FBTs, share farming or land purchase.

15. Greater investment through rural development funding into farming entrance schemes such as Fresh Start Academies and the Fresh Start Land Enterprise matching service.

16. Discussions should be held to establish what opportunities can be addressed through adjustments to tax reliefs currently available with the specific need to attract new entrants into farming.

17. Promoters of Short Supply Chains and added value (such as social enterprises, local authorities and rural development schemes) should make engagement with small family farmers a strategic priority.

1. Introduction

There would be less confusion if politicians and policy makers would specify 'the small farm' or 'the family worked farm' if this is what they mean, rather than introduce references to 'family farming' which, while having a certain emotional appeal, may not mean very much. It is after all, a great mistake to be influenced by an over-romantic view of the family farm. (Gasson et al, 1988)

Some authors display wisdom by not attempting to define specifically what they mean by small farms. (Carlin and Crecink, 1979)

1.1 Opening Reflections: Does Size Matter?

For the purposes of this research, we consider a small farm to be a farm that needs the labour input of up to two people, or to use technical language, a standard labour requirement of two full time labour equivalents. This notion of a one- to two-person farm we feel best captures the small family farm that characterises the sector we are interested in. We have not even attempted to come up with a definition of family farming. This is a term that is even more elusive than small farming (see Lobley *et al*, 2012 for a discussion of approaches to defining family farms). We use it because in a common-sense way most people know what they mean by a family farm. Like an elephant, they recognise it when they see it but a strict definition is hard to come by. The extent of the decline of use of hired labour in agriculture is such that many farm businesses are family farms in terms of being family-owned businesses worked both managerially and operationally by family members. The vast majority of small farms are family farms in these terms, but not all family farms are small.

Policy makers may not refer to 'family farming' quite as frequently as when Ruth Gasson and colleagues coined those opening words nearly thirty years ago but the notion of family farming still has an important place within wider society, as reflected in the powerful appeal of books such as The Shepherd's Life (Rebanks**,** 2015) and the continued attraction of small family farming as an alternative to large scale corporate farming as reflected, for example, in the emergence of farmers' markets. That all is not well with small or medium sized family farming is well documented in a recent report for The Prince's Countryside Fund which reveals the gravity of declining profits and the financial pressures on farmers (Andersons, 2016) some of whom are already beset by other challenges such as Bovine Tb. Notwithstanding the gravity of the current crisis affecting agriculture, the concerns of this report are longer term. It is not to belittle present difficulties to consider longer term changes and prospects for small farming, which is the purpose of this report. Agricultural commodity prices are cyclical and highly dependent on global markets. Not very long ago, attention was focussed on the food prices spikes from 2008 onwards and, in particular, the complex linkages between food, energy and financial markets (Tadesse *et al*, 2014). As this report shows, small farms face problems that go well beyond the ups and downs of commodity prices. To put it another way, if there were to be a sudden price spike many small farmers would have a short term benefit, but this would not alter some of the longer term problems they face.

The merits or otherwise of *small* family farms have not been so keenly debated in Britain in recent years as was once the case, and this is reflected in a relatively modest recent literature on the influence of farm size and the positive or negative aspects of small farming. This is in marked contrast to lively debate on small scale agriculture in many other parts of the world (Brookfield and Parsons, 2007; Akram-Lodhi and Kay, 2010). Whereas in many European countries, small or peasant farmers have long been portrayed as the backbone of rural society and custodians of the land (Fennell, 1987; Hoggart *et al*, 1995), and in the US there is a lively debate on the contribution of small farms to rural economy and society (Berry, 2002; Hayes-Conroy, 2007), in the UK, or more

especially England, a positive relationship between small farm size and a sustainable countryside is not so easily made. Within mainstream contemporary agriculture, size or scale of activity is usually now seen as less important when measuring farm characteristics and level of performance, whether economic or environmental, than a whole set of other variables (for example, farmer attitudes and type of enterprise).

It is now 55 years since the last governmental investigation specifically of size or scale of farming (Zuckerman Committee, 1961) and even the few later reports of some relevance to the issue, such as the Northfield report (1979) on land occupancy, are now dated. The 1958 Small Farmer Scheme which was arguably the only piece of UK post war legislation which discriminated in favour of small farms (Gasson, 1988), sought to improve farmer performance through research, advice and capital investment was closed to applicants by the then Ministry of Agriculture and Food in the late 1960s. Despite its intentions, the scheme favoured the better endowed, larger small farms and, notwithstanding pockets of high take up, response to the scheme was generally poor (Gasson *et al*, 1988; Lowe *et al*, 1986). For a time after the mid-1960s the British government saw the solution to the small farm problem in removing small farmers from the land and the Farm Structures Schemes introduced in 1967 were designed to establish a minimum size for viable full time farms while offering payments to small farmers prepared to give up their land for amalgamation and assistance towards the costs of amalgamation, but it was concluded that such schemes had little impact (Hine and Houston, 1973).

Today, it is probably fair to say that in many quarters there is a carefully cultivated neutrality on the question of size, a consequence of two factors. First, the average farm size in Britain is larger than in many other European countries. This is linked to the estate system and the tri-partite (landlord-tenant-worker) model, so different to the peasant proprietorship systems of much of Europe (Cleary, 2007; Kopsidis, 2012, Van der Ploeg, 2003). Secondly, size neutrality perhaps reflects the political success of the National Farmers' Union over many years in speaking for the industry as a whole. It is no coincidence that the NFU was founded more than a century ago amidst considerable political debate over land reform and the role of the small farm in society (Brown, 2000; Cox *et al*, 1994; Cragoe and Readman, 2010; Flynn *et al*, 1996). Since its inception, the NFU has, on the whole, successfully contained the tensions between horn and corn and between small and large farmers.

But there are two qualifications to this narrative of 'size not mattering'. First, it is rather an English story. In Wales, the concern for the small or family farm was so strong in the 1950s that the Farmers' Union of Wales was born, in opposition to the NFU, explicitly to speak for the interests of the family farm (Murdoch, 1995; Winter, 1996). More recently it has been argued that "the family farm defines the character of Welsh rural society, and its sense of identity. The numbers directly and indirectly involved in farming make a crucial contribution towards sustaining rural communities." (National Assembly for Wales, 2001). And in Scotland, in part because of the politics of crofting, subject to a recent major official investigation (Shucksmith, 2008), there is currently a Small Farms Grant Scheme. In Northern Ireland, where farms have historically been smaller than elsewhere in the UK, and which has a different land tenure system, small farms continue to exert an influence both culturally and politically (Gosling, 2015). So policy and cultural resonance related to small farms varies significantly across the UK. Secondly, a strong positive discourse surrounding small farms has continued amongst some of those resistant to mainstream conventional agriculture. Thus writing in the Guardian, the former head of the Soil Association, characterizes small farmers as the 'backbone of the rural economy':

> "By their very existence, they play a crucial role in maintaining our countryside. They are the stewards of our landscapes, field boundaries and hedgerows, the guardians of the fertility of the soils, the pastures, biodiversity, and the ancient green lanes of herding the cattle in to be milked." (Holden, 2015)

Others lament the decline of the small farm in a global context. Chris Smaje, who runs a website called Small Farm Future, writes:

> "From the brief high-water mark of pro-peasant populism in the earlier part of the twentieth century, the possibility of founding self-reliant national prosperities upon independent small proprietors has slowly been eroded through land grabs, global trade agreements and agrarian policies favouring capital intensive staple commodity production over local self-provision, regardless of the consequences for small-scale farmers." (Smaje, 2015)

The close association between advocacy of small-scale farming and advocacy of radical organic alternatives to conventional agricultural systems (see Smaje, 2014; Tudge, 2007) often serves, in fact, to keep the size issue on the margins of mainstream debate. This is unfortunate in our view as there is real scope for positive interaction between alternative visions for agriculture and the concern at the challenges facing more conventional mainstream family farms. Two organisations that seek to make the case for small farmers, without any necessary link to organic systems, are the Small Farms Association (SFA) and the Family Farmers' Association (FFA). The SFA was formed in 1997 by farmers frustrated by the reluctance of the major farming unions to recognise the concerns, and support the needs, of the small farmer in their policies and activities. The FFA dates back to 1979. As their website states their purpose is to:

> "…promote family farming – the Family Farmers' Association has been fighting for the survival of civilised farming on family farms since 1979. Family farmers produce significant quantities of high quality food, while caring for the countryside. They enrich rural communities, because family farming involves a lot of country people. They are an endangered species."

One of the main purposes of this report is to examine the extent to which these claims for the virtues of small or family farming can be justified and, if a case can indeed be made for their continued role in UK agriculture, what might be done to improve their lot. It is very clear, as illustrated in this report, that the current changes facing agriculture as a whole and, we would argue, small farms in particular, are very grave.

It is against this background that we set out to explore the future for small family farms and the remainder of this chapter sets out the objectives of the research and the methods employed, including the definition of a 'small farm' used for the purposes of the research.

1.2 Objectives

The research took place between November 2015 and May 2016. Its chief objectives may be summarised as follows:

To identify the extent and pace of change in the number of small farms and to consider the drivers of change.

1. To provide insights into the types of farming that may be supplanting traditional small farms.
2. To identify the characteristics of small farms and what they contribute to agriculture, the rural economy and the countryside, including the positive role small farms might play in responding to contemporary global challenges associated with food security and climate

change; and how their decline might impact on food production and environmental management.
3. To identify ways in which policies and market mechanisms might be adjusted to increase the viability of small farming.
4. To consider ways in which small farmers might improve performance and viability including consideration of efficiency, added value, diversification, co-operation, and succession.
5. To make recommendations.

Objectives 1 and 2 are dealt with in Chapter 2 of this report; Objective 2 in Chapters 3 and 4; and Objectives 4, 5 and 6 are covered in Chapter 5.

1.3 Methods

Within such a short time period, it was not feasible to conduct detailed primary research - a national survey of farmers for instance - and we have therefore relied for the most part on the use of research completed or already underway, as well as the use of existing data sets that can throw light on the small farm question. This combination of methods and sources which taken together, we believe, present a compelling and rigorous case. These methods and sources are set out below.

Literature Review

We conducted an extensive review of the literature on the role and contribution of the small farm, and this work continued throughout the project. Apart from its substantive findings, the literature review reminded us forcibly of two challenges to this project. First, that very little recent work has been conducted specifically on the small farm question in the UK in recent years. In the post war period and lasting up to the 1970s, agricultural economists waged a lively debate on the relationship between size and efficiency in agriculture (e.g. Britton and Hill, 1975), a debate that has almost entirely died away. This demise of attention is not quite as true for rural sociology as for agricultural economics. The path set by sociologists such as Ruth Gasson and Howard Newby in the 1970s was carried forward by various writers in the 1980s and 1990s, the authors of this report included, but few would claim that the small farm question has been much more than a footnote in recent sociological and geographical inquiries into UK agriculture. This brings us the second challenge. The neglect in the UK literature is not mirrored by a universal global neglect and our literature review found that a great deal of books and papers on family farming around the world continue to be written (e.g. Akram-Lodhi and Kay, 2010; Brookfield and Parsons 2007; Calus and van Huylenbroeck, 2010; Lobley *et al*, 2012). The challenge is how to translate such insightful works into a very different geographical context.

Analysis of Farm Business Survey Data

The Farm Business Survey (FBS) has been undertaken every year since the 1930s and nowadays forms part of the UK's obligation to provide data on farm business finances for the European Farm Accountancy Data Network (FADN). It provides an unparalleled level of data on farm financial performance. We were fortunate in this research in drawing directly on the skills of the leader of the FBS in England, Professor Paul Wilson, and his new report commissioned specifically for this research is available as an online resource (Wilson, 2016).

Paul Wilson used data from 2014/15 (the most recently available data) for England and Wales, drawing upon a range of data variables relating to the farm business, the farmer and the farm

household. Data was drawn from 2418 observations for the bulk of the analysis with smaller sample sizes for specific data analysis, particularly in relation to non-farm business income sources (1495) and the presence or absence of a nominated successor (2418). A full list of the categories and variables used in the FBS data analysis is included in Appendix 1 to this report.

The SW Farm Survey

The Centre for Rural Policy Research at Exeter (forerunner to LEEP) has conducted its own postal survey of farmers in the South West of England (covering the counties of Gloucestershire, Wiltshire, Dorset, Somerset, Devon and Cornwall) twice before, in 2006 and 2010, and had planned another survey in 2016. We took the opportunity to ensure the 2016 survey was conducted in time for its results to be available for this report. The 2016 survey includes responses from 1,251 farmers. Appendix 2 provides methodological details of the survey.

The Parish Study

For some time Chiswell, Lobley and Winter have been undertaking a detailed study of land occupancy change in a single West Country parish since 1941, using a combination of data sources. These include the results of the 1941 National Farm Survey (see Chiswell, 2014), information from key informants from within or close to the parish, MAFF/Defra June census data and land registry data. This is work in progress but we have used some of the preliminary findings to illustrate the pace and nature of occupancy change in Chapter 2. Whilst we can make no claim for the representativeness of this particular parish, we have no grounds for thinking it is atypical in any way. By 1941, most of its farms were family operated and owner-occupied and of less than 150 acres in size, mostly mixed livestock and cropping, and therefore very typical of the pastoral West of England.

Interviews, Workshop and Call for Evidence

Specifically for this research we conducted key interviews with 7 agricultural sector experts. We also held a workshop attended by 17 farmers and other experts, held in Taunton in May 2016. In addition, we put out a call for evidence and received 21 responses. Further details of the call for evidence are included in Appendix 3.

1.4 The Definitional Challenge

The literature clearly shows that the term ‘small farm’ can have different meanings depending on the research or policy context (see Bonanno, 1987; Lobley, 1997 and Pritchard *et al*, 2007). However, four measures are of particular relevance:

Land area

The measurement of farm size has been dominated by reference to land area but size classifications based on land area are problematic. For example, 100 hectares of upland sheep grazing in the Scottish Highlands is very different to 100 hectares of intensive vegetable production in East Anglia; and very large pig and poultry enterprises can be situated on a very small land area. Land area is a poor proxy for measuring economic scale.

Standard Gross Margins (SGMs)

These are calculated per hectare of crops and per head of livestock from Defra June Survey returns and, since 2006, the Cattle Tracing System. In aggregate, standard gross margin (value of output minus the directly associated variable costs) is a measure of the size of a farm business in economic terms.

Standard Output (SO)

This measure was introduced in 2010 in the light of CAP reforms in which direct income payments not associated with specific enterprises became increasingly important. Because direct income payments are 'decoupled' from different farm enterprises, it was concluded that measuring actual crop and animal outputs from farms on a standardised basis more accurately reflected farm business size for comparative purposes. Also, grass areas now get a coefficient in their own right rather than being lost in the enterprise gross margin, as they were under the SGMs method. The coefficients applied are also revised every three years, with the current typology being known as 2010 SO typology.

Standard Labour Requirements (SLRs)

This is the Defra Farm Business Survey (FBS) farm size classification which conforms to Office for National Statistics requirements. As Defra (2014) explain, "information on individual labour usage by enterprise on each farm is not always available and could vary across farms, for example depending on the extent to which the farmer choses to substitute machinery for labour. Standard figures for the labour requirements associated with different livestock and crop types are therefore used, on the basis of hours per head of livestock or per hectare of crops. SLRs are representative of labour requirements under typical conditions for enterprises of average size and performance." Once the total annual figure for a farm business is calculated, the number of hours can be converted to an equivalent number of full-time workers on the basis that a full-time worker works a 39-hour week (1900 hours a year). The averages vary over time (Wilson, 2009) and, more importantly perhaps, from farm to farm according to a farmer's capacity to invest in new technology and buildings that reduce labour requirements, as well as their own managerial skill, speed and efficiency.

Use of SLRs gives a size classification of farms by number of full-time equivalent (FTE) workers as follows:

Very small	< 0.5 FTE	Spare time
Very small	0.5 < 1 FTE	Part time
Small	1 < 2 FTE	Full time
Medium	2 < 3 FTE	Full time
Large	3 < 5 FTE	Full time
Very large	> = 5 FTE	Full time

Source: Defra, 2014

We have encountered use of many definitions in our research for this report but the land area and SLRs methods are the most commonly encountered in official sources, such as Defra. We opted to use SLRs in our own analysis of Farm Business Survey data for England and Wales (Wilson, 2016). All farm size measures are imperfect to some extent, but crucial for present purposes is that whichever method is applied it is the *relative* size of farms that matters for the analysis of their economic characteristics and performance. Thus attention is focused here on the smallest size groups in terms of both land area and aggregate SLRs.

1.5 Setting the Scene: What is a Farm?

We have talked about the small farm issue and the definitional issues that size presents. But it is important finally in this chapter to remind ourselves what a farm is. Whilst this might seem self-evident and obvious, it is when we come to consider what exactly comprises a farming operation that some of the challenges become clearer. In economic terms, a farm is a collection of resources, usually based around the land and biological processes, configured as a result of decisions made by people (farmers) having particular objectives in view. At any given time, the resources available are in part historically determined (land area, existing buildings), and in part the result of decisions made by the current farmer. At any scale of activity, viability depends on the capacity to produce a flow of monetised benefits from resources transformed into products. Moreover, those benefits must be sufficient to pay for current resource use, personal drawings of the farm household, make provision for replacement of depreciated assets, make new investments, repay debts and meet interest payments. The extent to which a farm succeeds in these terms will depend on the volume and value of the outputs as determined by market prices and support payments. The main objective of any farmer must be to cover financial expenditures on inputs (financial costs) out of the financial returns earned from using those inputs for production. Without satisfying that objective, viability is unsustainable except in the very short term.

Depending on individual farmer circumstances, adverse conditions may be cushioned by access to funds generated outside of the farm business, such as off-farm paid employment. It follows that viability of any farm business partly depends on individual circumstances.

But whatever the particular circumstances, the ability of a farm to generate sufficient income depends on the following factors:

- Quantities of real resources, e.g. land area, buildings, labour, machinery, breeding livestock, and other inputs.
- Qualities of real resources.
- Market opportunity, such as access to markets that allow higher margins.
- Availability of working capital to finance ongoing activities, whether day-to-day or for major long-term investments.
- Technical and managerial skill of the farmer decision-maker.

It follows that close scrutiny of small farm business characteristics, financial and technical, including variability arising from geographical location, must be a major aspect of research on the future of the small farm. It is equally apparent that the social and family aspects of farm businesses are of crucial importance. A final important point to make is that agriculture's particular dependence on *land* is a defining feature of farming. It makes it very visible in societal and landscape terms. And its fixed supply poses particular challenges to business expansion and to new entry into the industry.

2. The Small Family Farm: Past, Present, Future

When someone visits a farm they will look for what is important to them. Everyone will look for different things. I am normally interested in the people. It is largely up to them whether or not it succeeds. (Fursdon, 2013)

I look forward to the day when each one of us everywhere will be able to see that sound farms, family farms really constitute … the essential foundation of agriculture in Western Europe. (Sicco Mansholt, closing address at Stresa, quoted in Neville-Rolfe, 1984)

2.1 Introduction

This chapter explores the extent and pace of change in the number of small farms and the factors that have caused their decline. It is clearly the case that small farms are under pressure as farms expand in size and we consider the factors that have driven these changes. Finally, we anticipate what further changes might take place if current trends continue.

2.2 The Small Farm: Continuity and Change

As indicated in the previous chapter, small farms were largely ignored by many English historians and contemporary commentators of the nineteenth century with their focus on estates and high farming instead. Standard accounts of agriculture (e.g. Ernle, 1912), particularly in England, gave little attention to the small farm; agriculture was seen as exceptional in England compared to most of Europe with commentators contrasting England's agrarian capitalism with the peasant farming systems of much of the rest of Europe (MacFarlane, 1978). However, there is now plenty of evidence that the picture was far more complex and varied, with small farmers surviving and sometimes prospering alongside larger scale agriculture. The agricultural depression of the late nineteenth century (Perry, 1973) and the decline of the landed estates and the emergence of owner-occupation in the early twentieth century led to some documented examples of a re-emergence of small farms (Winter, 1986) as well as many mid-twentieth century populist accounts of farming (e.g. Henderson, 1944).

In addition, some scholars discovered neglected evidence of small farms in the nineteenth century (Dewey, 1974; Reed, 1984, 1986). Allanson (1990, 1992) argues that average holding size was either stable or slowly declining between 1875 and 1939, and that constant growth in holding size since 1951 is a novel phenomenon rather than a continuation of previously established trends. Similarly, according to Grigg (1989) between the 1880s and 1930s large holdings (in terms of area) were in decline but the number of holdings of less than 120 hectares was increasing. This re-emergence of smaller farms has been accounted for by the ability of smaller farms to cut costs and work hard, sometimes excessively hard, to weather the storms of agricultural depression (Winter, 1986). But despite all this, the fact remains that the average size of farms in acreage, which scarcely altered between the 1860s and the 1960s (Hine and Houston, 1973), was much higher than in most European countries. Of course, while acreage may have stayed constant, the size of the labour force employed in agriculture declined during the same period as a result of mechanisation. Tractors and other labour-saving inputs, such as agrochemicals, replaced people on the land. A hundred-acre farm in the late nineteenth century may have employed four or five workers in addition to the farmer; by the 1960s the farmer would be on his or her own with some family help. To that extent

the proportion of small farms, as measured by standard labour requirements, actually increased during this period.

Table 2.1 illustrates the relative stability of farm size in terms of land area until the marked increase in average holding size from the mid-1960s, alongside the declining share of farm land accounted for by small farms. Thereafter the pace of change accelerated rapidly as shown in Tables 2.2 and 2.3 to 2.6. It is also apparent that in Northern Ireland, in particular, and also Wales, small farms have remained much more important in numerical terms than in Scotland and England.

Table 2.1 The Changing Holding Size Distribution 1851 to 1983

		% of holdings			% of area		
Date	Mean size ha	Small 2<40 ha	Medium 40-121 ha	Large >121 ha	Small 2<40 ha	Medium 40-121 ha	Large >121 ha
1851	43	62.5	29.7	7.8	21.6	44.7	33.7
1895	32	75.3	19.9	4.8	29.5	42.6	27.8
1915	32	75.5	20.3	4.2	31.1	44.1	24.7
1944	33	73.7	22.2	4.1	31.0	44.8	24.2
1951	33	73.9	21.8	4.3	30.8	44.0	25.2
1960	36	72.0	22.9	5.0	28.7	42.9	28.4
1966	39	70.1	23.5	6.4	25.6	40.5	33.4
1975	51	62.5	28.0	9.5	19.8	37.5	42.7
1983	63	59.6	26.7	13.7	14.4	31.8	54.3

Based on Grigg, 1989: Tables 9.2 and 9.3

Table 2.2 Number of Holdings by Size Group in England and Wales ('000 holdings)

	Areas of crops and grass (ha)						
Date	2-20	20-40	40-100	>100	Total	Total (m ha crops and grass)	Av size of holding (ha)
1950	158	60	60	18	296	10.00	34
1960	139	58	57	20	273	9.87	36
1970	89	45	48	23	206	9.63	47
1980	62	37	45	24	168	9.47	56
1986	61	34	44	25	164	9.55	58
% 1950-86	-61	-43	-27	+43	-45	-4.5	+71

Source: Britton, 1990

Table 2.3 Number of Holdings by Size Group in Northern Ireland

Size (ha)	1997		2000		2003		2005		2007		2010		2013	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<10	6147	21.0	8540	27.0	7813	26.1	7265	25.2	7057	25.4	5710	22.5	5993	22.7
10-19	6560	22.4	6740	21.3	6160	20.6	6060	21.0	5680	20.4	5180	20.4	5650	21.4
20-29.9	4830	16.5	4600	14.5	4250	14.2	4220	14.6	4130	14.8	3860	15.2	3990	15.1
30-49.9	5620	19.2	5450	17.2	5260	17.5	5090	17.7	4850	17.4	4600	18.1	4590	17.4
50-99.9	4610	15.7	4670	14.8	4610	15.4	4450	15.4	4290	15.4	4210	16.6	4260	16.2
>100	1540	5.3	1650	5.2	1880	6.3	1750	6.1	1830	6.6	1830	7.2	1870	7.1
Totals	29307	100.0	31650	100.0	29973	100.0	28835	100.0	27837	100.0	25390	100.0	26353	100.0

Source: Eurostat, 2015

Table 2.4 Number of Holdings by Size Group in Wales

Size (ha)	1997		2000		2003		2005		2007		2010		2013	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<10	8697	29.1	11110	37.0	15123	45.3	15245	43.5	15357	44.8	7340	28.4	7983	29.5
10-19	4570	15.3	3750	12.5	3600	10.8	4050	11.6	3910	11.4	3670	14.2	3920	14.5
20-29.9	3100	10.4	2580	8.6	2370	7.1	2880	8.2	2660	7.8	2520	9.7	2320	8.6
30-49.9	4550	15.2	3890	12.9	3500	10.5	4160	11.9	3790	11.1	3550	13.7	3400	12.6
50-99.9	5430	18.2	5010	16.7	4910	14.7	5100	14.6	4840	14.1	4790	18.5	4780	17.7
>100	3500	11.7	3710	12.3	3900	11.7	3580	10.2	3690	10.8	4010	15.5	4640	17.2
Totals	29847	100.0	30050	100.0	33403	100.0	35015	100.0	34247	100.0	25880	100.0	27043	100.0

Source: Eurostat, 2015

Table 2.5 Number of Holdings by Size Group in Scotland

Size (ha)	1997		2000		2003		2005		2007		2010		2013	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<10	10457	30.4	8800	29.1	7723	27.7	8475	29.9	8907	30.9	11070	31.5	10303	29.9
10-19	3410	9.9	2740	9.0	2370	8.5	2450	8.6	2500	8.7	4760	13.5	4970	14.4
20-29.9	2350	6.8	1880	6.2	1630	5.9	1650	5.8	1730	6.0	2530	7.2	2650	7.7
30-49.9	3500	10.2	3000	9.9	2700	9.7	2750	9.7	2700	9.4	3350	9.5	3260	9.5
50-99.9	5870	17.0	5320	17.6	4960	17.8	4890	17.2	4730	16.4	5090	14.5	5060	14.7
>100	8850	25.7	8550	28.2	8470	30.4	8160	28.8	8260	28.7	8330	23.7	8180	23.8
Totals	34437	100.0	30290	100.0	27853	100.0	28375	100.0	28827	100.0	35130	100.0	34423	100.0

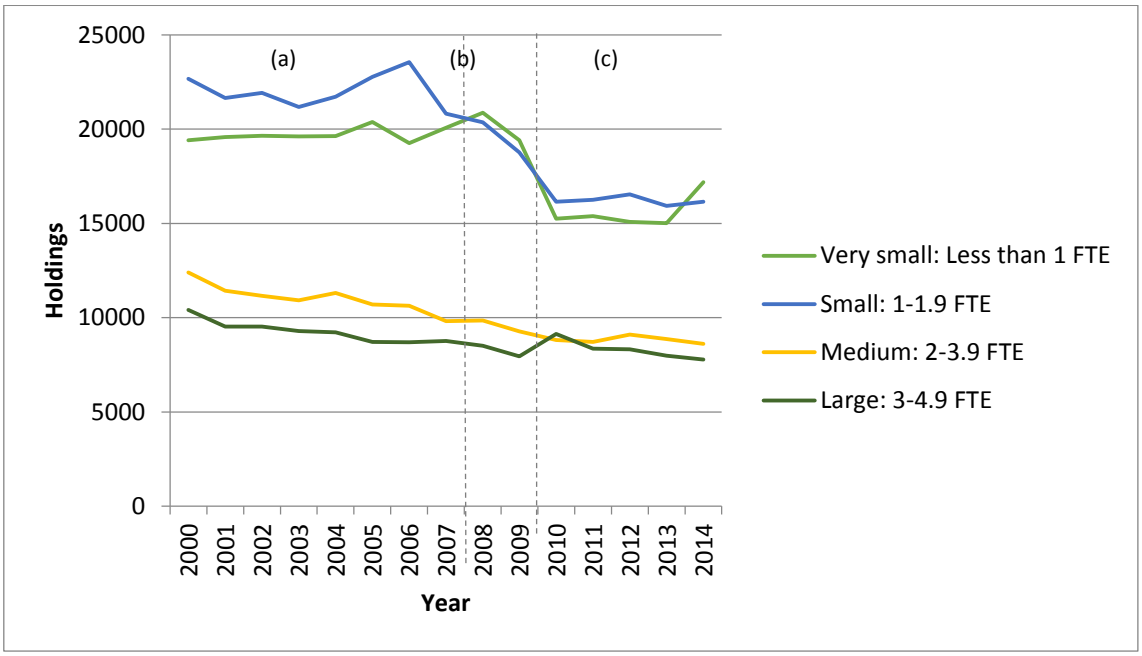
Source: Eurostat, 2015

Table 2.6 Number of Holdings by Size Group in England

Size (ha)	1997		2000		2003		2005		2007		2010		2013	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<10			46070	33.8	69860	43.8	58470	45.1	17490	19.9	9370	13.3	8460	12.5
10-19			17200	12.6	17510	11.0	5870	4.5	4300	4.9	2680	3.8	1400	2.1
20-29.9			10870	8.0	10510	6.6	3520	2.7	2490	2.8	1480	2.1	740	1.1
30-49.9			15570	11.4	14790	9.3	15040	11.6	15910	18.1	12990	18.4	12170	18.0
50-99.9			21610	15.9	21170	13.3	21250	16.4	21830	24.9	18900	26.8	18390	27.3
>100			24980	18.3	25510	16.0	25360	19.6	25740	29.3	25120	35.6	26280	39.0
Totals			136300	100.0	159350	100.0	129510	100.0	87760	100.0	70540	100.0	67440	100.0

Source: Eurostat, 2015

Figure 2.1 Numbers of commercial holdings by farm size (excluding very small 'spare time' holdings <0.5 SLR)



(a) 2000 SLRs, June survey data only
(b) 2000 SLRs, June survey data for all but cattle - now sourced from Cattle Tracing System
(c) 2006 SLRs, June survey data for all but cattle - now sourced from Cattle Tracing System. In 2010 a register cleaning exercise was undertaken. This resulted in inactive holdings being removed. In addition, new thresholds were applied. These changes were backdated to 2009.

Source: Defra, 2015

Looking at farm size in terms of SLRs, Figure 2.1 demonstrates the ongoing numerical preponderance of small and very small farms but also the much steeper decline in their numbers compared to their larger counterparts. However, these figures, and those contained in the previous tables may be, if not exactly misleading, certainly not a fully accurate representation of change in the industry. These aggregated data on farm size, drawn from the annual June Census/Survey, have long been the stock in trade for the analysis of structural change in agriculture but they give an incomplete story. Indeed, in some respects they obscure the extent and pace of change. In particular:

- They may under-estimate the number of very small or micro holdings which fall below the June Census/Survey radar. This issue is likely to increase as a result of the 2015 decision to limit future CAP payments to holdings of 5 hectares or more. In that context there is little incentive for new micro holdings, which may arise from the dispersal of land where farms are split in farm sales, to register as a new holding.
- For tax reasons (see Box 2.1) many farmers appear in the June survey as active businesses when in reality they are no longer actively farming. Others may let land for very short terms. The pressures on small to moderate sized farms, the need for economies of scale and fiscal rules have combined to encourage farmers to adopt a range of 'unconventional' occupancy arrangements, including 'grass keep', gentlemen's agreements, share farming, and contract farming as show in Table 2.7. In this respect the number of active small farms may be over-estimated and the number of larger farms under-estimated. Figure 2.2 illustrates in very simple terms what this might mean in terms of a hypothetical block of land.

Box 2.1 Taxation and Agriculture

There are tax advantages to land owners who no longer wish to actively farm to use share farming, contract farming, partnerships, seasonal leases, and licenses to demonstrate continuing trading activity when in practice they may take no risk and lack any management control.

For those who decide to let out their land, often larger landowners, 100% Agricultural Property Relief from Inheritance Tax is available even on short term lets.

The Inheritance Tax relief is supplemented by additional relief allowing the Capital Gains Tax due on the proceeds of sale of non-farming assets used to purchase land to be rolled forward thus deferring the payment of the tax.

"What does the state get out of it?" asks George Dunn, chief executive of the Tenant Farmers' Association. "Not much … for those with a lot of cash made through capital gains elsewhere land provides the complete tax solution … run it as a 'sham' farming operation [run] by another individual on a short-term basis, you take no risk. And when you pass away, there's all this tax relief." (Hetherington, 2015)

It is hard to estimate with precision the extent of the trends set out in Figure 2.2, but it is clear that the proportion of land held in unconventional arrangements has increased, accounting for 10.4% of land in 1989 and 13.7% in 2007 (Winter and Butler, 2008) as shown in Table 2.7. Anecdotal evidence suggests that this trend has continued, probably accelerated, and may well have been somewhat under-estimated in Winter and Butler's research.

Figure 2.2 Hypothetical Illustration of how the June Survey/Census Under-Estimates Change and Dynamics in Farming

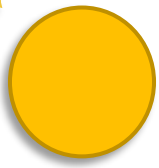
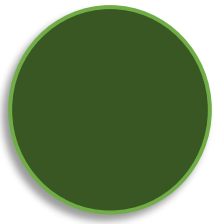
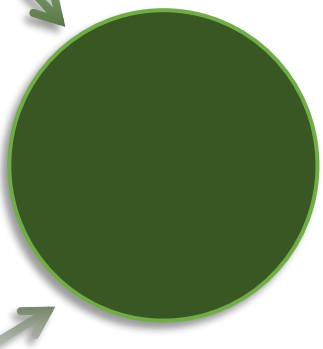
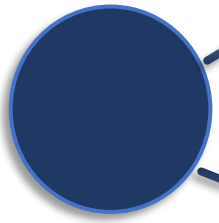
	Indicative Relative Size of Farm Business Turnover using June Survey Holding Size as a Proxy		Adjusted Indicative Relative Size of Farm Business Turnover
Farmer A 50 hectares – all land now let as seasonal grass keep to Farmer C. Farmer works off farm.			
Farmer B 100 hectares – share farmed with/by Farmer D who provides all machinery and makes most of the management decisions.			
Farmer C 100 hectares – Farms his 100 hectares supplemented by the 50 hectares grass keep from A. Also has substantial farm contracting business.			
Farmer D 500 hectares – Farms his 500 hectares and share-farms B's 100 hectares. Contract farms 295 hectares from E.			
Farmer E 500 hectares – Farms 295 hectares, using C for contracting. 200 hectares contract farmed by D. Informally lets 5 hectares to F an unregistered equine holding.			
Farmer F			

Table 2.7 Total Agricultural Land Area by Tenure Type: England and Wales 2007

	Area hectares raised to level of England and Wales	%
Summary		
Owner-occupied land actively farmed	6,250,319	57.7
Tenanted land (includes land held under grass keep arrangements and contract farming)	4,577,844	42.3
Total Area	10,828,170	100
Full Agricultural Tenancy (with no share in ownership)	1,891,408	17.5
Full Agricultural Tenancy (with share in ownership)	158,999	1.5
Total FAT	2,050,407	18.9
Farm Business Tenancy (more than 2 years)	854,152	7.9
Farm Business Tenancy (less than 2 years)	185,790	1.7
Total FBT	1,039,942	9.6
Contract	595,587	5.5
Partnership	76,107	0.7
Share Farming	42,846	0.4
Total	714,540	6.6
Sub-tenancy	17,643	0.2
Grass Keep	361,450	3.3
Informal/Gentleman's Agreement	271,550	2.5
Other	122,312	1.1
Total	772,954	7.1

Source: Winter and Butler, 2008

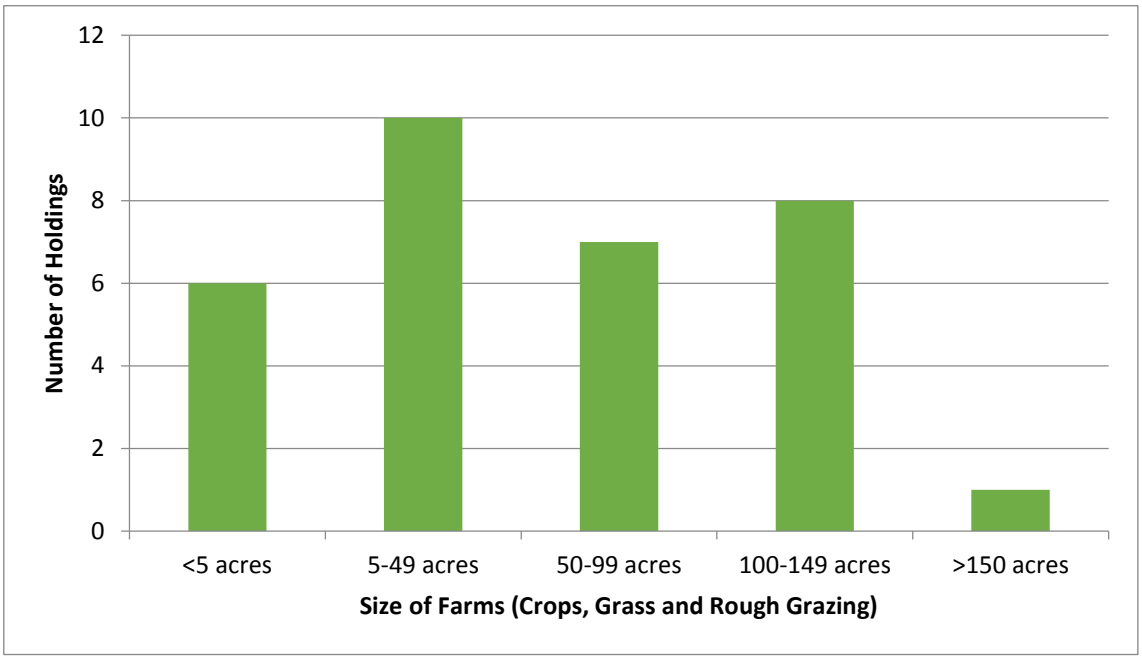
We have explored some of these changes through a detailed study of a single West Country Parish (WCP). In 1941, this was a parish very typical of the mixed pastoral and arable farming of the West of England. Approximately 2,000 acres in extent, farming in the parish in 1941 was characterised by its relative uniformity. As Figure 2.3 shows, only one farm was over 150 acres. The rest were small farms farmed by their occupiers with quite a high degree of commonality in the style of farming. Our focus here is on the 26 holdings of more than 5 acres – 22 of these had dairy cows (from 1 to 15 cows), all grew potatoes (part of the war effort to feed the nation), over half (17) grew wheat, and all bar three had poultry.

So what has happened to the 26 holdings that were the heart of that community, socially and economically, seventy-five years ago?

Over half (16) have ceased to exist as independent commercial farms, with some or all of their land sold to other farmers or purchasers. We can see the beginning of that process in Figure 2.4. That leaves 10 farms left from the original 26. And just *one* of these remains as a conventional commercial family farm, providing full time work for a farmer and members of his family with no significant recourse to outside earnings. This farm has expanded in size through land purchase and inheritance. One is partly farmed commercially with part of the land let annually to other farmers. Three others are still commercial farms but are now dependent on outside earnings. Three have ceased to be working commercial farms but retain ownership and 'let' land on an annual basis to three different larger farmers from outside the parish, one of whom has also bought land within the parish. One has increased in size from a smallholding to a working small farm, through land purchase by a wealthy 'hobby' farmer. One has declined in size but remains a semi-commercial small part-time farm.

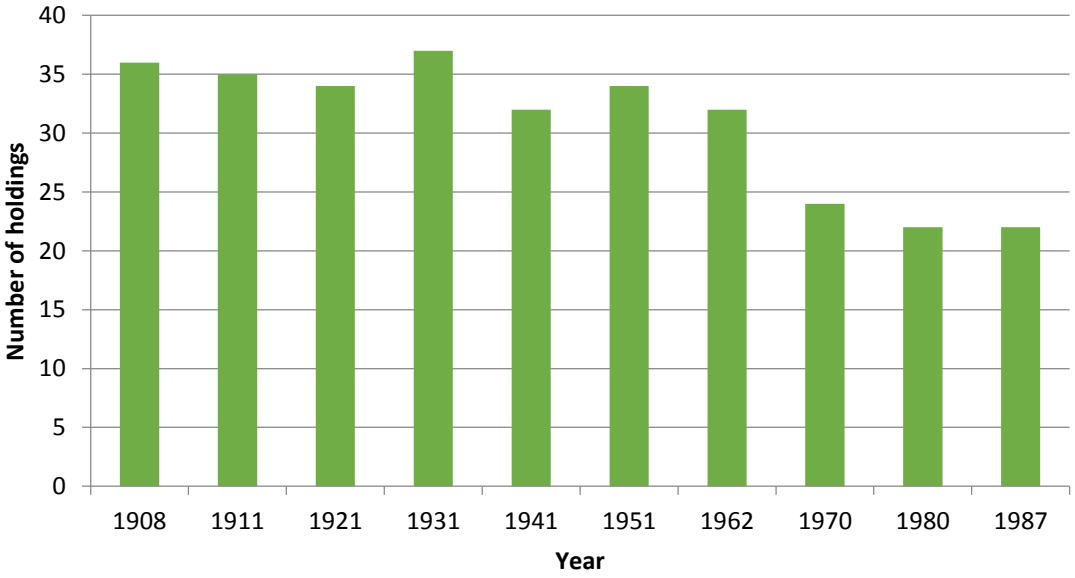
But that is not the whole story. Three other new small farms have emerged in the parish and, alongside the consolidation of land in the hands of larger farmers, mostly from outside the parish, there has been a degree of land fragmentation with purchases of a range of very small areas (1 to 10 acres) to non-agricultural purchasers with a wide range of reasons for owning land. One of the original 1941 farms was disposed of almost entirely in this manner when it came on the market in 2012, with c.35 acres sub-divided into 7 lots and sold to 7 different purchasers.

Figure 2.3 Farm Sizes in the West Country Parish 1941 (32 holdings)



Source: Data from National Farm Survey, National Archives Kew

Figure 2.4 Number of Holdings in the West Country Parish



Source: June Census Parish Summaries, National Archives Kew
NB Data available at parish level only to 1987

The findings from WCP are consistent with what we were told in some of our interviews and with some of the evidence from the literature on the restructuring of agriculture. One of our interviewees talked of the hollowing out of agriculture to describe the process of farm enlargement on the one hand and the persistence, even expansion, of small-scale farming on the other hand. The Family Farmers' Association submitted as evidence an unpublished report produced by its predecessor

body, the Small Farmers' Association. They looked at 17 parishes across England (7 in Devon, 2 in Lincolnshire, 4 in Northamptonshire, 3 in Suffolk and 1 in North Yorkshire) and using local knowledge, electoral registers and estate records examined the decline in full time working farms between 1970 and 1990, recording a 37% decline overall.

What is also clear from the WCP is the extraordinary range of aspiration represented by the smaller land-holdings. Land may be bought and occupied for residential and recreational purposes, for non-agricultural business purposes, or for farming; with even farming covering a multitude of possibilities. This has been brought out in other work. For example, Shucksmith (1993) has shown how the sale of blocks of land may be a strategy for farmers as they slowly retreat from agriculture. Burton and Walford (2005), in a fascinating study of farms in the South East of England, also using the 1941 National Farm Survey as a starting point, show how *large* farms may be sub-divided in response to various succession pressures, something we did not encounter in WCP where the farms are smaller. Sutherland (2012) explores what she calls gentrification, or "the production of agricultural commodities without the intent of earning a living" to describe the emergence of residential or recreational farmers.

In their review of work on the survival of family farming and restructuring in British agriculture Lobley and Potter (2004: 499) state that:

> "A chief conclusion from this work is that despite the numerical stability of family farms as institutional units, the nature of farm households and the pattern of land holding is undergoing significant change, with farm families becoming both more pluriactive on the one hand and increasingly subsumed to external capital influences on the other. At the same time, the connections between occupancy of holdings and the management of land are becoming ever more complex and differentiated in space, with an ever greater diversity of ways in which it is possible to be 'a farmer'."

Based on a survey of 255 farmers in six areas of England[1], Lobley and Potter (2004: 502) go on to describe "the extent to which many farming families are long established in their locales, finding that almost one third of respondents were from families that had been farming in the same area for more than a century. In total, 84% of the sample operated established family farms (defined as at least the second generation of the family farming the same farm or in the immediate area of the first family farm). Just 8% were new entrants in the sense that they were the first generation of their family to farm and/or had not previously farmed or occupied a farm elsewhere."

Most of the agricultural restructuring identified by Lobley and Potter took the form of 'traditional restructuring' such as farm expansion to spread fixed costs, significant enterprise change such as a switch from dairy to beef production and reductions in the use of hired labour. Large farms were found to be the ones most likely to be growing in size (a pattern later confirmed by Lobley and Butler, 2010) while "for many small and medium sized family farms the picture is one of adaptation and retrenchment rather than determined disengagement from agriculture." (Lobley and Potter 2004: 503). Lobley and Potter go on to identify a "restructuring spectrum" consisting of six distinct types of restructuring[2] (different ways of reallocating land, labour and capital) alongside a 7th

[1] The study areas were The Peak District: Bakewell area; The High Weald: Heathfield area; East Midlands: Newark area; Cumbria: Orton Fells area; Mid Devon: Witheridge area; North Norfolk: Fakenham area

[2] **Static businesses**: no change other than usual changes to rotation practice, occasional investment in replacement machinery; **Minor change**: businesses carrying out a range of marginal changes (to inputs for example) and some limited investment; **Traditional restructuring**: Resources are (re) deployed within farm business, frequently involves movements between enterprises, specialisation and sometimes-significant capital investment; **Agricultural integrators**: Resources are (re) deployed within wider agricultural business such as whole farm management businesses, agricultural consultancy, input supply businesses and some upstream businesses; **On-farm diversifiers**: Resources (re)deployed within wider farm-based business such as a tourist enterprise or other farm based business; **Off-farm**

"static" category. Small farms were often associated with the category of on-farm diversifiers. They were however, also disproportionately likely to be found in a group of "capital consumers" which, whilst accounting for only 4% of the sample, "brings together all those who have been actively withdrawing assets from farming: 63% have reduced the size of their land holding and 33% have sold non-land assets. Typically small farms operated by elderly or retired farmers (78% are over 55), many of these are … 'retirement holdings' occupied by individuals at the end of their farming careers, often uncertain of succession but unable or unwilling to give up farming entirely" (Lobley and Potter, 2004: 506). Nevertheless, Lobley and Potter (2004: 508) conclude that "far from underlining the structural fragility of UK farming, the pattern of restructuring reported here points to the robustness of agricultural households as key units of land occupancy and management in the countryside."

Data from the recently undertaken SW Farm Survey points to the longevity of farming families, alongside considerable farm business change in recent years. On average, farming families in the survey have been farming either the same farm or in the general vicinity for 105 years. Only 8% were new entrants in the strictest sense of being the first member of their family to enter farming and who had not personally farmed anywhere else (a finding identical to that reported by Lobley and Potter, 2004 – see above).

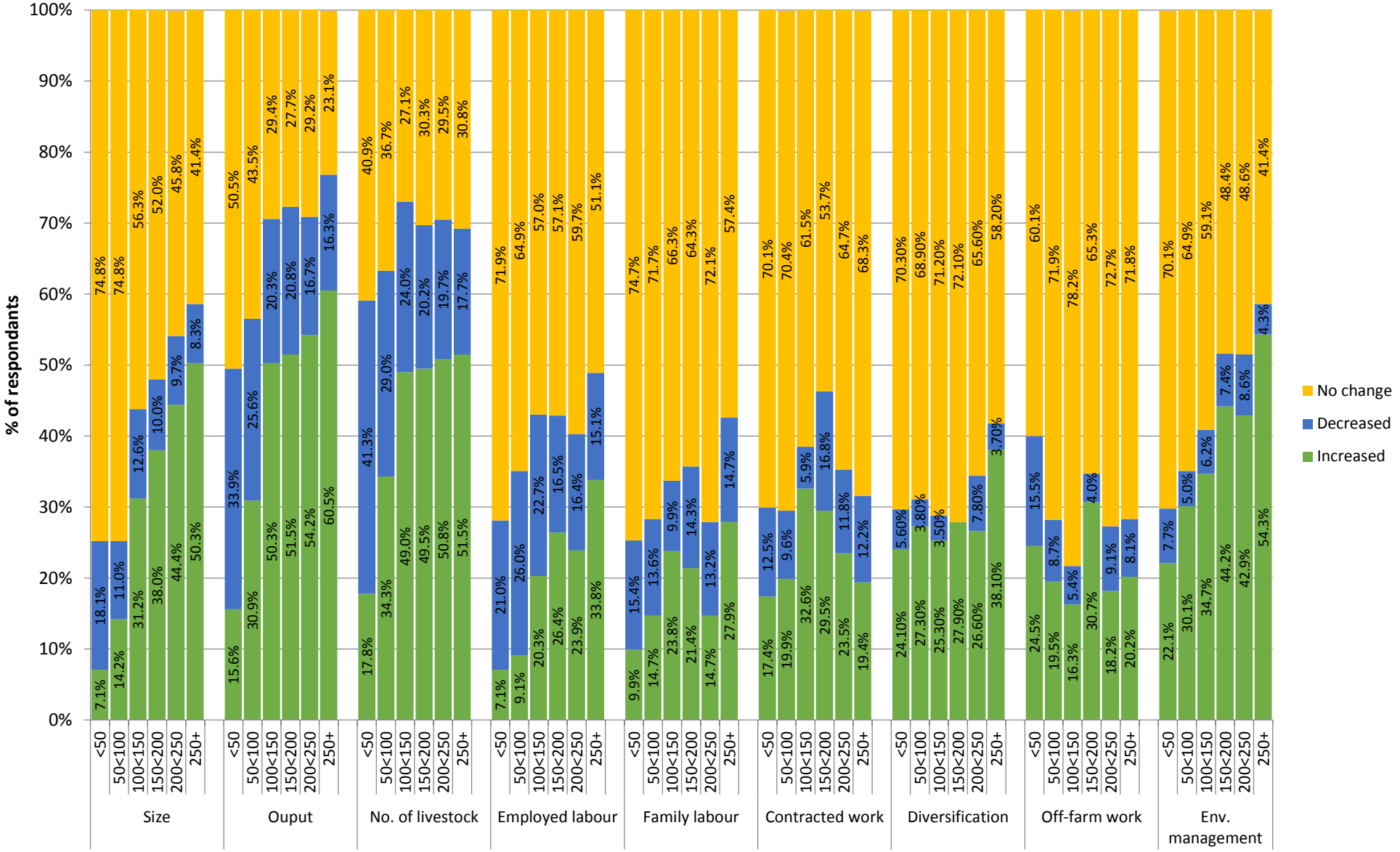
In terms of the farm business, the last 5 years has seen widespread change in the SW Farm Survey sample. As Figure 2.5 illustrates, there is evidence that a group of the smallest farms (<50 ha) have been disengaging by reducing the area they farm, reducing livestock numbers and output. On the other hand, expansion of both land area and output is clearly associated with larger farms.

2.3 The Drivers of Change

This section is essentially about why farmers farm as they do. What are the factors that influence the choices farmers make in how they operate their businesses? There have been clues to this in the previous section when we talked about the influence of taxation and tenure, for example, on farm size. But there are, of course, many other factors. Small farms, like any others, are subject to a wide range of influences as illustrated in Figure 2.6. These influences are often conceived of in terms of 'drivers of change', an aspect of the operating environment (in the broadest sense of the term) that may affect a change in another aspect of the business (e.g. changes in the law relating to the need for employers to offer pension provision may affect labour recruitment decisions at the farm level). There are a number of ways of conceptualising these drivers. A common approach is to differentiate between drivers *internal* to the farm business (including changes within the family and the attitudes and dispositions of key decision makers) and *external* drivers such as changes in the policy and regulatory environment, the impact of market forces (such as price volatility) and so on. In reality, this distinction is rather blurred. Education, for example, is usually seen as an internal driver in that it implies a set of knowledge and skills possessed by a farmer as an individual, and yet that education will have been obtained from external education providers drawing on research generated across the globe. Suffice to say that there are many complicated interacting influences on a farm business which combine to give that business its own distinctive character and level of performance.

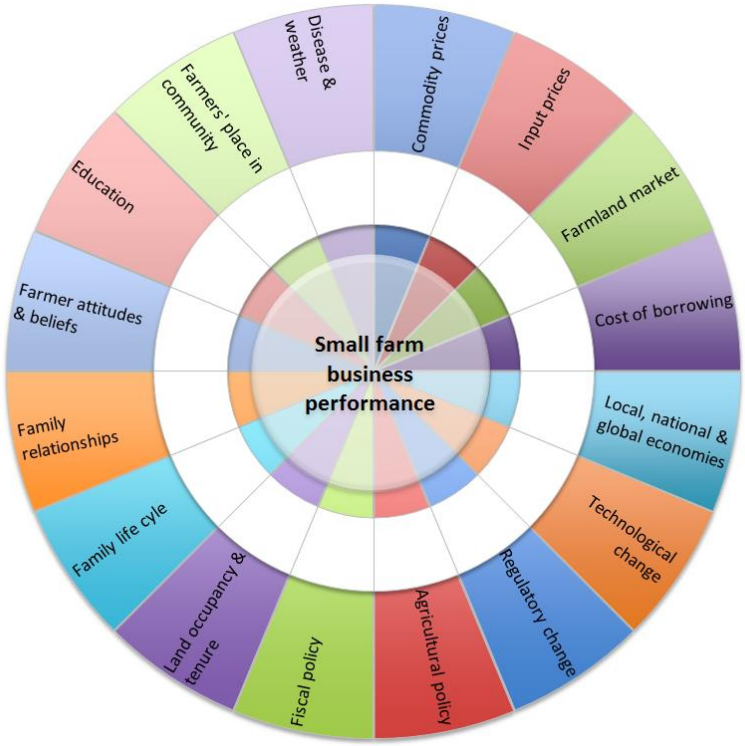
diversifiers: Labour and possibly capital re-deployed in off farm business or off farm employment; **Capital consumers**: Agricultural assets and resources liquidated to provide income; **Leavers**: Exit from agricultural activity with or without a successor.

Figure 2.5 Incidence of Farm Business Change in Last Five Years, by Farm Size



Source: SW Farm Survey, 2016

Figure 2.6 Drivers of Change



In an agricultural context, some drivers have a very clear and direct relationship with farming such as CAP reform and the implementation of the Basic Payment Scheme, whilst others form an important part of the operating environment for all economic activity such as changes in taxation policy, and still others can have very direct impacts on the business but are beyond immediate human influence (e.g. extreme weather events). It would appear unlikely that there are any specific, unique *small farm* drivers of change. Rather, there may be a specific small farm dimension or small farm response. For example, is the influence of the family life cycle experienced in a particular way on small farms? Do the operators of small family farms respond to agricultural policy change in a manner that differentiates them from the operators of larger farms?

Before considering some of the internal family drivers and the role of policy and regulation, it is worth rehearsing some basic economic principles that act as powerful drivers of change in farm size in particular. A basic problem is agriculture's terms of trade with the rest of the economy revealed in the relationship between prices received for agricultural products relative to the prices paid for inputs.

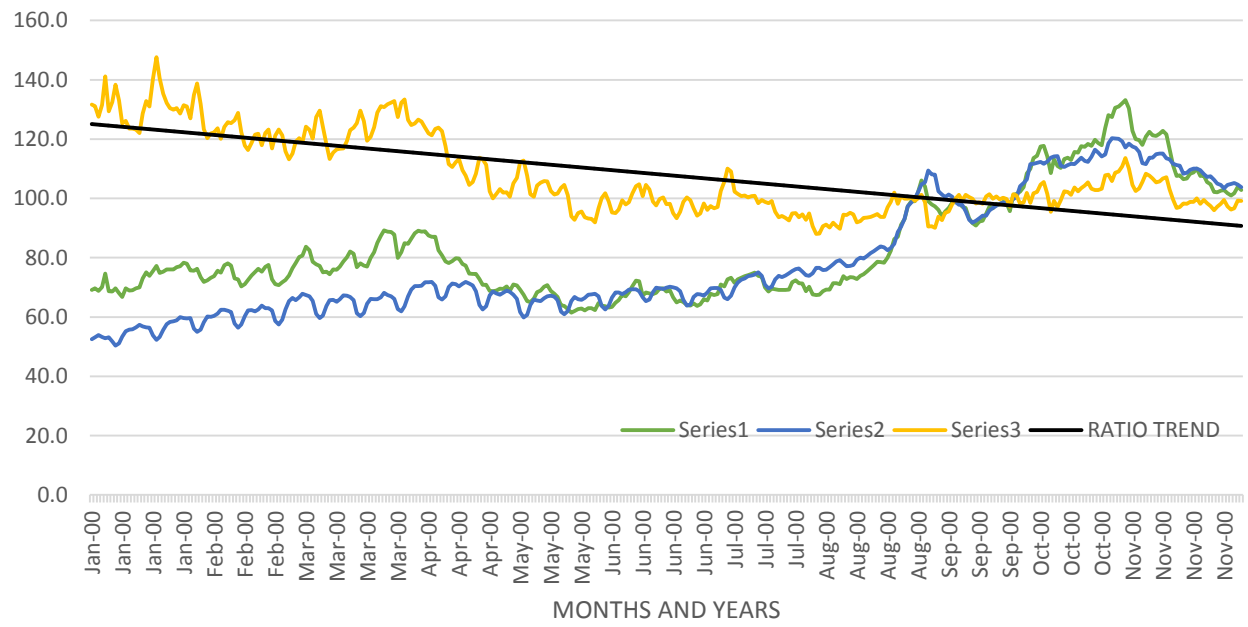
Figure 2.7 shows the long-term downward trend in the ratio of product prices to input prices, indicating a sustained price/cost squeeze on farmers, despite a more favourable movement in agriculture's terms of trade from mid-2011 to mid-2014, approximately three years of better conditions before more normal conditions returned. Crucial to the fortunes of UK farming is the euro/£ exchange rate, because CAP support is designated in euros, and the relative strength of sterling was a factor during that period.

A price/cost squeeze translates into a need to increase the volume of production to at least maintain farm net income. Partly this requires access to greater quantities of resources which, in farming, typically means more land. Given that, in aggregate, land is effectively in fixed supply, this means transfer of land by rent or sale between holdings, one farm's gain inevitably being another's loss. UK

agricultural statistics on size of farms confirm this trend. The other major contributor is technical change, increasing the productivity of inputs. The 'agricultural treadmill', a phenomenon initially identified in the USA (Cochrane, 1958, 1979), is similarly found in the UK. As the name implies, farmers find themselves in the position of having to 'run' constantly in one place simply to survive. Without that capacity to acquire more resources, or innovate, or survive on the basis of subsidising their farming activities from other sources, their farm business is doomed to extinction.

Evidence for the magnitude of technical change in UK agriculture is to be found in estimates of total factor productivity over post-war years. To an extent, these are involuntary for farmers because improvements are embodied in the resources they acquire by purchases such as licensed higher yielding crop varieties, genetically improved breeding animals, more effective agrochemicals, and machinery technology that facilitates better cultivation practices. The ability to exploit resources to full potential also depends on farmers' own awareness, willingness, and ability to implement changes, including technical and business acumen and access to funds for investment. Figure 2.8 makes clear the remarkable contribution of technical progress in UK agriculture over the past sixty years.

Figure 2.7 UK Agriculture Terms of Trade, 1988 to 2016

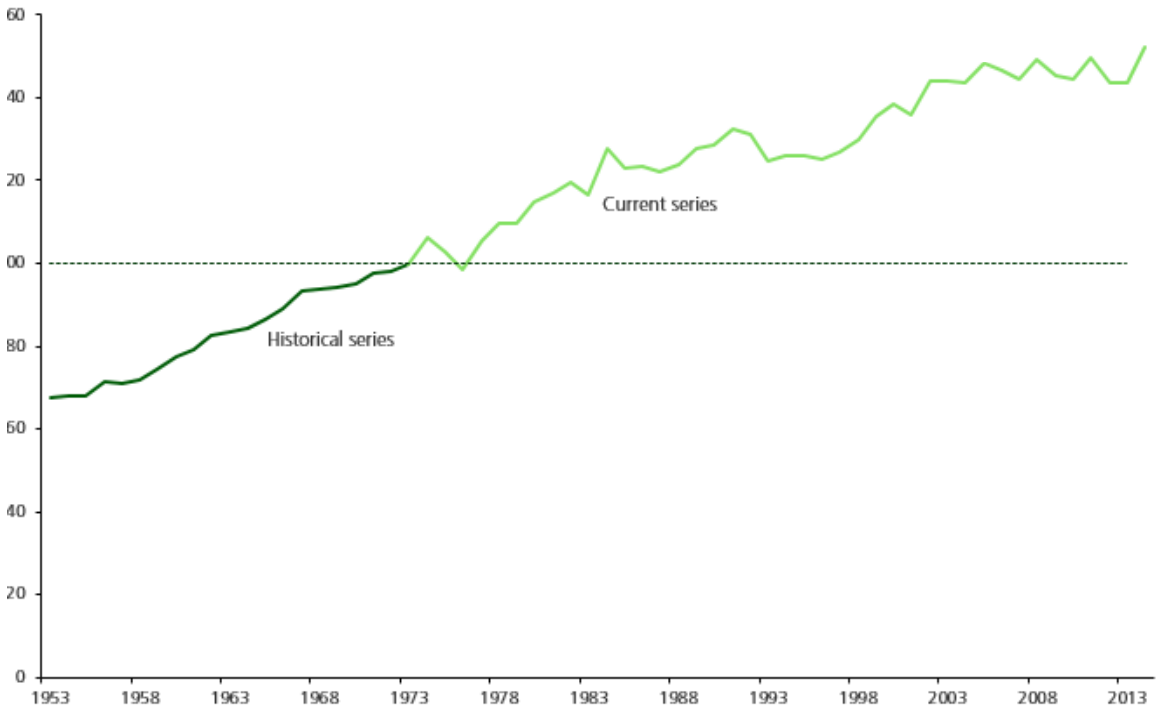


Source: K Howe calculations from API – Index of the purchase prices of the means of agricultural production – historic data for years 1988 to 2016 (2000 = 100), Defra

In addition to these powerful economic, policy and regulatory drivers, the farm family or farm household itself is a source of drivers of change. Farm level drivers are complex because it is here that the effects of other drivers are mediated as well as being a source of internal farm household drivers. Thus while economic and financial drivers are felt most acutely at the farm level, the internal characteristics of the farm household, passage through the business cycle and farm family life cycle also drive change. A considerable body of evidence (e.g. Gasson and Errington, 1993; Potter and Lobley, 1996a and b; Bryden *et al,* 1992) suggests that family events and processes such as births,

marriage, ageing, succession and retirement can trigger change and restructuring in agricultural businesses.

Figure 2.8 Index of Total Factor Productivity of UK Agriculture (1973 = 100)



Source: Zayed, 2016

As with many family businesses, one of the prime objectives of family farms is to pass on control of a sound and often improved business to the next generation (Gasson and Errington, 1993). The process of succession and its intimate links to the mirrored process of retirement can be a time of considerable financial and emotional stress on the farm and there is much evidence of the impacts on the successor and the business when the father cannot bring himself to fully let go of the reins (see for example, Lobley *et al,* 2012; Potter and Lobley, 1996a and b). Succession can have a powerful influence on the development trajectory of a farm business. Symes (1973: 101) for instance, found that farms lacking a successor were less likely to be managed intensively. On the other hand, the identification of a successor can act as a trigger for business development, and existence of a successor can provide a powerful motivation for on-going investment in the business even into the old age of the retiring farmer (Potter and Lobley, 1996a and b). Although the full impact of succession may not be revealed until the successor is incorporated into the business, in many cases the anticipation and expectation of succession can influence decision-making long before a potential successor is identified and indicates a desire to succeed. The assumption that a child will one day succeed may influence thinking and decisions about the farm, making some business options unthinkable while others become more attractive.

The process of retirement from farming can also trigger change in the business. Retirement from farming is frequently unlike retirement from other, urban-based occupations and may involve an extended period of winding down the business and slow withdrawal. This process is often associated with movements out of dairying for instance (as frequently occurs in cases where there is no successor), extensification and a reduction in farm scale with land being sold but also increasingly let

on FBTs or short term informal arrangements, or share/contract farmed. Farmers appear to often find retirement difficult. As Lobley (2014) notes:

> "One of the great strengths of family businesses is the strong commitment to the business from family members. There is also a 'dark' side to this with individuals becoming so committed to and consumed by the business that their identity is wholly aligned with the business, leaving little scope for other interests. The prospect of retirement involves contemplating a change of status within the business and within the family. This can be difficult to face, especially when individuals can't visualise a life beyond the business".

The following quotes from interviewees from Lobley's 2014 *Leaving Farming* report illustrate the problem:

> "… probably the over-riding factor is it's a way of life and not a job. So it is their job but, you know, it's the way of life factor – they want to carry on doing it, it's what they've done all their life. They often don't know anything different, all their social contacts, maybe going to markets, that type of thing, are all linked in with farming and I think a lot of people feel, well if I give up the farming what am I gonna do then? … I'm helping or supporting, several farmers that have semi-retired that have just kept back a bit of shed and land a few bullocks because they say if I gave that up, there's no point in life. They've openly said to myself well I might as well hang myself because what have I got to live for if I haven't got the farm? Which is really sad, because they haven't built up that social structure." (Interview 1)

> "There's lots where there's elderly, sort of 70 plus, that are beginning to struggle but haven't really thought about what they're going to do, but are refusing to do anything else 'cause they've always lived there and don't want to move off. … You can't tell people what to do; they have to make their own decision, but it's very hard and often that decision won't be made until they're so ill or until they die and then it's left to the children to sort it out. Because they've just got this mentality 'oh no, I want to keep those stock; I like them, I like seeing them out the window'." (Interview 1)

Another interviewee explained how, in his perception, tax rules are also an influence:

> "We want to die a working farmer really because we get agricultural relief on everything now. So you want to remain a working farmer really … My father was a working farmer until the day he died because he had a 10% share in the business; he didn't do anything but that is beside the point." (Interview 5)

Given that most farms, regardless of size, can be considered to be family farms of one sort or another, these internal farm family drivers will be experienced across the sector. What is less clear though is whether there is a size dimension to all of this? Well, there is a well-known association between small farm size and a lack of a successor (see Chapter 3) which will make it harder for the older generation to step back if there is no one else to do the work. In addition, Lobley *et al* (2002) identified that internal, farm household drivers were more important on small farms.

2.4 Responding to Change

As indicated in Chapter 1 and in the previous section, small farmers face very real economic challenges at the current time and, indeed, this has characterised their position for many years. Broadly speaking, farmers face two choices in order to cope with declining economic fortunes: either to focus on a farming solution or to redeploy resources away from agricultural production (see Box 2.2). In reality, it may be a combination of the two or farmers may vacillate between the two

courses of action with periods of off-farm work generating income interspersed with a focus on the farm. There are, of course, two other options open to farmers. First, they may cease farming, either entirely through selling up the farm or by letting their land. Or secondly, they might tighten the belt and continue business as usual. One of our interviewees highlighted the role of the Basic Payment Scheme in facilitating the latter option.

Box 2.2 Survival Strategies for Farm Businesses

1. The traditional way: Farming our way out of difficulty

This typically involves strategies either (a) to reduce the unit costs of production, e.g. by enlarging the farm in order to spread fixed costs over a larger area, or by investing in better production methods (including investment in land improvements, buildings and fixed equipment) or (b) to increase the unit value of farm outputs e.g. by adding value through processing, grading or better marketing.

2. The new way: Diversifying the business

This typically involves redirecting some or all of the business assets – such as land, buildings and family labour – to alternative uses. It may involve, for example, the establishment of new business ventures on or off the farm, the employment of more family labour in off-farm jobs, or the increased production of so-called CARE[1] goods (provided adequate payment is available either from the Government or charitable institutions).

[1] The Countryside, Amenity and Rural Environment goods for which there is no established market in the private sector.

Source: Lobley *et al*, 2002

Notwithstanding the significance of direct CAP payments, as subsidies are withdrawn, market competition increases and environmental regulation grows, farming families are combining and reallocating their resources, including land, labour and capital, both inside and outside the farm in a range of accumulation and survival strategies (Bowler *et al,* 1996). Small farmers are engaged in diversification, pluriactivity, changing relations of production, changing tenancy agreements and wider food and distribution systems. The effects of these multiple processes on small farms are uneven and geographically varied. Table 2.8 identifies some of these changes. Further work will be necessary to explore if there is a systematic farm size dimension to the likelihood of undertaken any of these changes.

Lobley and Butler's (2010) analysis of the response to CAP reform amongst farmers in the South West suggests that there may be a relationship between strategic plans for the future and farm size. They identified a number of distinct groupings of farmers (expanders, withdrawers, managerialists, consolidators and disillusionists). The largest group – consolidators – were characterised by a high dependency on agricultural income, small farm size and a low incidence of diversification (Lobley and Butler, 2010: 6). The consolidators were less active than the expanders and managerialists and appeared to be attempting to absorb the impacts of CAP reform without making significant changes to their farming practices. Many of the farmers in this group were older and comparatively least satisfied with their lives, Lobley and Butler (2010) suggest that this is where much of the movement of land occupancy will occur in the longer term.

2.5 The Future?

Looking to the future, evidence from the SW Farm Survey (Figure 2.9) suggests that overall, small farm size is associated with a lower incidence of planned change, although it is notable that the

operators of 20% of the smallest farms are planning to increase diversification, suggesting that for some, survival will continue to be predicated on the health of the wider economy. On the other hand, Table 2.9 indicates that for a significant proportion of the operators of small farms, the near future will see them retiring or otherwise leaving agriculture. It is entirely appropriate in many instances that this should be so. Life decisions have to be made and people retire from work. What is of concern to us is whether the ranks of these small farms can be replenished by active and economically vibrant new small farms or whether, as seems more likely unless current trends are modified or reversed, their land and property is taken up by a combination of expanding large farms and residential life-style purchasers. These are issues we return to in Chapter 5.

Table 2.8 Examples of Structural and Agricultural Diversification

Structural diversification		Agricultural diversification	
Tourism	Accommodation e.g. bed and breakfast, camping Recreation, farmhouse teas, café, farm zoo, children's farm Combined activity e.g. active holidays	Unconventional enterprises	Crop products e.g. linseed, teasel, evening primrose Animal products e.g. fish, deer Organic farming
Adding value to farm enterprises	By direct marketing e.g. farm gate sales, farm shop By processing e.g. cheese, ice cream, cider By selling skins, hides, wool	Farm woodland	e.g. energy forestry, amenity/recreation, wildlife conservation, timber
Passive diversification	e.g. leasing land, leasing buildings	Agricultural contracting	e.g. for other farmers, for non-agricultural organisations

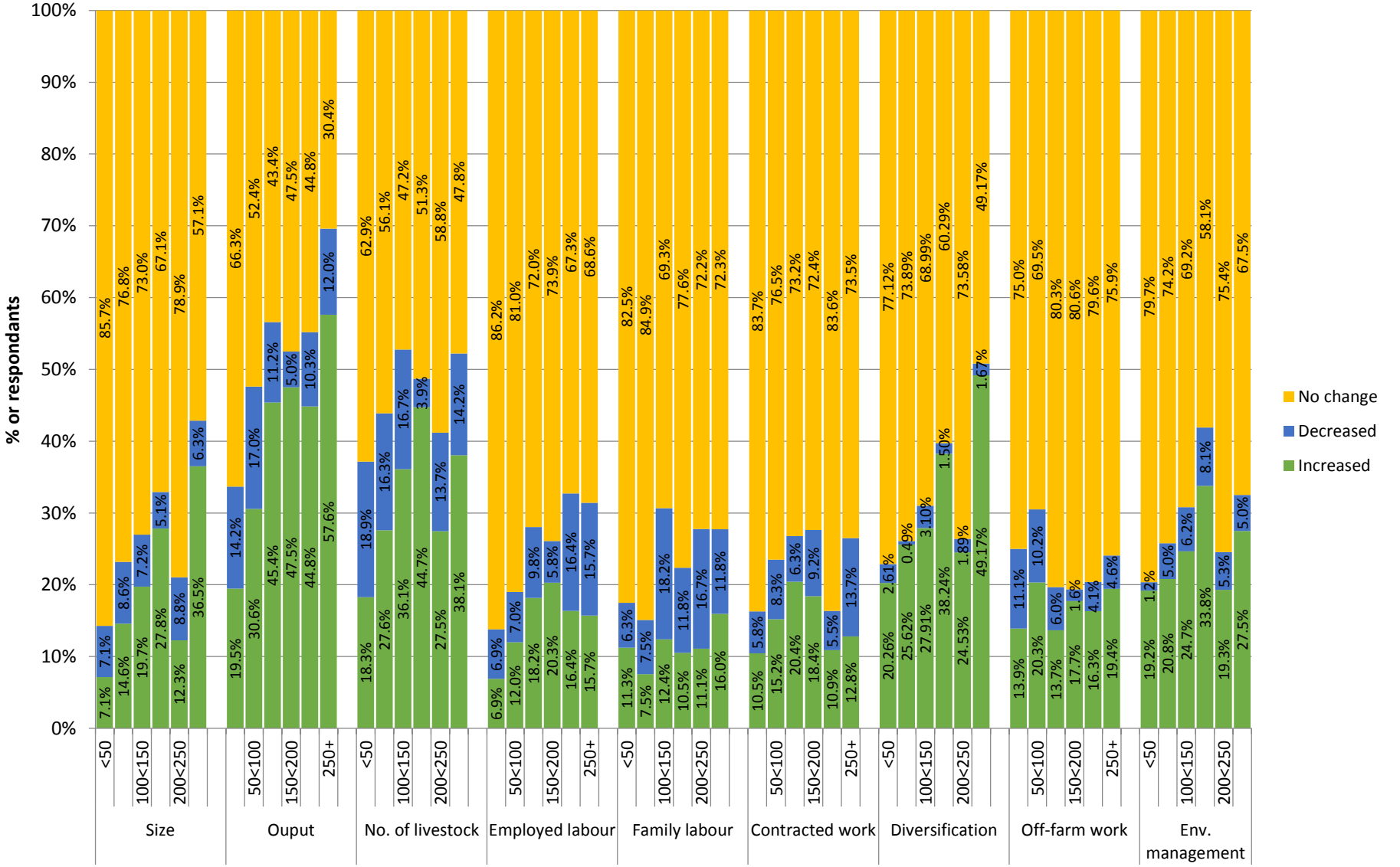
Source: reproduced from Ilbery, 1991: Table 2

Table 2.9 Plans to retire or leave farming in next 5 years

	Size of farm						Total
	<50 ha	50<100 ha	100<150 ha	150<200 ha	200<250 ha	>250 ha	
Plans to retire in the next 5 years (%)	55.3	45.0	38.6	30.7	37.5	24.1	42.3
No plans to retire in the next 5 years (%)	44.7	55.0	61.4	69.3	62.5	75.9	57.7
Total	100	100	100	100	100	100	100

Source: SW Farm Survey, 2016

Figure 2.9 – Planned Changes in Farm Business over the next Five Years, by Farm Size



Source: SW Farm Survey, 2016

3. The Contribution of Small Farms

"*... the small farm of a good farmer, like the small shop of a good craftsman, gives work a quality and a dignity that is dangerous for human work to go without*" (Berry, 1987, p.350).

"The total disappearance of the family farm has been confidently predicted for almost a century and a half, and is still predicted today. While a great number have not survived into the twenty-first century, the fact that so many have done so, and in so many different lands, is remarkable."
(Brookfield and Parsons, 2007, p.1)

3.1 Introduction

This chapter examines the contribution of small farms to the economy, rural communities and the rural environment. Drawing on the literature review undertaken for this research, the stakeholder workshop, submissions to our 'call for evidence', and the 2016 SW Farm Survey, we review the arguments and evidence of the contribution of small farms. Importantly, we recognise that 'the case for small farms' is often built on assumptions of what might replace them, so we also consider whether, and how, the decline of small farms might impact on food production, rural communities and environmental management.

3.2 The Economic/Agricultural Contribution of Small Farms

The economics of contemporary small farms is considered in detail in the next chapter. Here we consider the broader agri-economic contribution including direct on-farm employment generation, wider employment implications, contribution to agricultural output and evidence on the relationship between farm size and efficiency.

It has been argued that "the approximate measure of rural community well-being is and should still be employment" (Midmore and Dirks, 2003: 3). This is because employment, or more precisely, *paid* employment is the most important means of achieving other ends. In terms of direct employment, evidence from the SW Farm Survey indicates that the 1,070 respondents supplying employment data employed 3,164.75 FTEs (including family labour and those working in diversified enterprises). On average, small farms of less than 50 ha employed just over 2 FTEs compared to the largest farms employing 5.25 FTEs (See Table 3.1). However, significantly it is smaller farms that employ more labour per unit area. Table 3.2 indicates that mean and median employment per 100 ha is greater on smaller farms (< 50 and <100 ha) compared to larger farms.

Table 3.1 Mean FTE, by Farm Size

	Farm size (ha)						
	<50	50<100	100<150	150<200	200<250	>250	Total
Mean	2.15	2.09	2.95	3.05	4.85	5.25	2.96

Source: SW Farm Survey, 2016

Table 3.2 Mean and Median FTE per 100 ha, by Farm Size (With Outliers Removed*)

	Farm size (ha)					
	<50	50<100	100<150	150<200	200<250	250+
Mean	7.72	2.95	2.51	1.78	2.27	1.23
Median	4.95	2.47	1.87	1.61	1.48	1.06

*10 cases have been removed as these were small business with a very large number of employees which were distorting the results. With the outliers included the mean FTEs per 100 ha for small farms (< 50 ha) was 12.49.

Source: SW Farm Survey, 2016

If this employment benefit is noticeable on mainstream farms, it is even more apparent on smaller less conventional alternative farms. In their submission to the call for evidence, Funding Enlightened Agriculture discussed the concept of a micro-dairy, which is seen to offer multiple benefits, including employment creation:

> "A micro-dairy is a small dairy herd of 20-40 cows side by side with a small processing facility providing milk directly to local shops and doorsteps. Such an operation can provide employment to several people, paying a living wage to all involved at the same time as turning a profit before any subsidies. …. this concept is proving to be of real interest both to new entrants and larger dairy farmers wanting to downsize. Micro-dairies operate at the human scale, helping to create self-reliant communities and sustainable local economies built around family/community farms and businesses that weave together all of the threads of a place."

Similarly, evidence from the Landworkers' Alliance based on a survey of 70 farmers operating farms of 20 ha and less also points to "the labour intensive nature of farms in the survey, especially those with a horticultural element, means that more people are employed per hectare than is typical for most traditional farming activities (Redman 2015, p188). While family labour is the main input, holdings as small as 1 ha were providing a livelihood for up to three full time equivalents."

Participants in the stakeholder workshop argued that the contribution to employment associated with small farms is not confined to direct on-farm employment but that the great many small farmers who have diversified provide a network of services to the community for example as contractors or repairers of machinery. Similarly, another argued that without a dense population of small farmers it becomes harder to find tractor drivers, middle managers and dairy staff:

> "… if there aren't farms around you, how are you going to find people?" (Workshop participant).

A different but significant perspective emerged from several submissions to the call for evidence: in essence, this says that because of the challenges faced by small farms they have to do things differently and have a strong motivation to innovate, as the following examples illustrate:

> "Because small farms have to generate more cash per unit of land in order to provide a living for the owner, they often have to be very innovative. Small farms are perhaps more likely to start tourist enterprises, run craft shops, or undertake some form of niche marketing of their own agricultural produce, than larger farms which can cover their costs selling commodities." (Huw Jones, Glyn-Coch Farm)

> "The pressure on small farms forces innovation, typically in the form of processing agricultural products, marketing processed products to retail consumers, selling services to retail consumers to locals and tourists. On the whole larger farms don't do this." (Anonymous)

> "Small farms are the ideal vector to showcase and develop new products but they must add very significant levels of value to the product on farm in order to make then economically viable." (Joel Woolf, Partner, Head of Agriculture, Foot Anstey)

Whilst this incentive to innovate on small farms may be true in some cases, it is by no means universal. Not all small farmers possess the necessary capital or aptitude to embark on a diversification project. Indeed survey data has shown a consistent relationship between farm business size and diversification, with larger holdings more likely to have branched out of conventional agriculture. "Thus, diversification is significantly more common on 'very large' farms with more than eight out of ten holdings in this group recording additional activities, well above the 'all holdings' average. At the other extreme holdings classed as 'very small' are the least diversified group although, even here, nearly half have some such activity." (Turner et al 2003)

The other main economic/agricultural contribution of small farms is to agricultural output itself. Here, as with much of the small farm debate, arguments are complex and evidence in the form of quantitative data frustratingly scarce. The 57,200 farms of less than 50 ha in England in 2014 accounted for over half (56%) of all farm holdings in England. However, despite being numerically important, at the risk of stating the obvious, they are small and consequently account for only 11% of all farmed land. This suggests that the contribution to aggregate agricultural output from this group of farms will be limited. However, the relationship between farm size and output is complicated and influenced by efficiency and intensity of production.

Focussing specifically on cereal farms as part of an Agricultural Change and Environment Observatory Research Report, Defra (2011) modelled the relationship between farm size and expected agricultural output based on a standard £150,000 of inputs per year for each of three farm size. The results presented in Table 3.3 appear to demonstrate a clear and positive association between farm area and the value of agricultural output. In other words, more value for the same level on input is achieved on larger farms. However, the relationships underlying these results are complex. For example, as Defra point out, although these modelled results are for cereal farms, they include all of the enterprises in the farms and these may be influencing the results.

Table 3.3 The Relationship Between Farm Size[1] and Predicted Output (Cereal Farms Only)

	Land area (ha)		
	150	200	250
Estimated Farm business output (£'000s)	203	219	231
Estimated agricultural output (£000s)	132	140	146

[1]Farm size was measure in ESUs – European Size Units - where one ESU is defined as 1200 European Currency Units of Standard Gross Margin. ESUs therefore provide a measure of the economic size of the business. Farms were categorised as: very small =<8 ESUs; small 8-<40 ESUs; medium 40-<100 ESUs; large 100-<200 ESUs; Very large 200 ESUs and over. Farms of less than 8 ESUs were considered (in the UK) to be below the threshold of full time activity.

Source: Defra, 2011: 15

Defra go on to warn about the complex relationship between farm size and efficiency. Indeed, there is a long standing debate concerning the association between farm size and efficiency, complicated by different approaches to measuring efficiency as well as different ways of measuring farm size. Using data from the Farm Management Survey, the Zuckerman Committee (1961) concluded that, with the exception of arable farms, smaller holdings used significantly more inputs per unit area

than larger farms of the same type (with the implication that they were less efficient). This finding may be a reflection that farmers consider detailed input calculations less worthwhile because of the modest quantities involved on a small farm (Gasson, 1988).

The importance of the farm size and type effect was recognised in the seminal study by Britton and Hill (1975) who went on to show that, measuring farm size in SMD (Standard Man Days), there were only small differences in the value of inputs per acre between farm size groups, although smaller farms were found to be more labour intensive. This latter point has been focussed on by small farm proponents as evidence that small farms support more employment. As we have seen above, when expressed in terms of FTEs per 100 ha, smaller farms do indeed support greater levels of employment.

In terms of stocking density, Britton and Hill (1975) found that "small businesses [measured in SMD] evidently use their land rather less intensively than large businesses; they include, for instance, many beef and sheep farms which have relatively small numbers of livestock on a rather extensive acreage" (Britton and Hill, 1975: 26). In turn, this has been taken as evidence that small farms operate more extensive systems which are therefore more environmentally friendly (see Lobley, 1997).

More recently, Defra's (2011) results broadly suggest that "there is an underlying tendency for larger farms (in financial terms) to be slightly more economically efficient than smaller ones" (p.25), but this is only apparent when 'compounding factors', such as unpaid labour (charged at the full economic rate) are included. Furthermore, there is a *very large* level of variation within this relationship, and the top performing small farms are more efficient than *many* larger farms (see Chapter 4 for a further discussion).

One reason for this excursion into the complexities and intricacies of the farm size-intensity relationship is to demonstrate that there is no simple, unequivocal answer. Proponents of both small and large scale farming should bear this in mind when making claims regarding the efficiency of different-sized farms. That said, the contribution of small farms to agricultural output is not just about efficiencies and their proportionate contribution to aggregate output. For instance, workshop participants argued that small farms often make a stronger connection between production of food and consumers than large farms focused on mass commodity markets. Similarly, in responding to the call for evidence, Rebecca Laughton pointed to a focus on "producing high quality, healthy food for local markets using agro-ecological production methods, alongside provision of education and fulfilling employment." Echoing this the Soil Association stated that "smaller farms are well-placed to contribute to local supply chains, farmers' markets, education, their communities and the environment" (Rachel Harries, Soil Association). As these last two quotes illustrate, small farms are seen to make a particular contribution to communities.

3.3 The Social and Community Contribution of Small Farms

The role of small family farms in rural society provides some of the most powerful imagery and assumptions in support of the contribution of small farms. Discussion of the social and community contribution is often powerfully normative (i.e. statements about how things should be arranged) but it is an area that remains under-researched. The exact nature of the 'social' dimension is also not always clear but can range from the role of farms in creating employment (as discussed above), helping to sustain rural services and community institutions, through to the personal benefits of working on a small farm and the contribution of the operators of such farms to the 'national character'. So, for writers such as Wendell Berry (1987) the family farm is "part of the definition of

one's own humanity" (p.347), supporting a superior quality of life and moral and spiritual values than industrial society. This view is summed up by another American writer, Paarlberg (1980), who states that for supporters of small family farms the loss of such farms would imply the loss of a valuable way of life: "The family farm represents in the minds of many, an idealised form of preindustrial living, the son apprenticed to the father, living close to nature and producing the most needed product of all..." (Paarlberg, 1980: 185)

The romanticised view of family farming, extolling craftsmanship and creativity can also be found among English writers: H. J. Massingham for example, writing about a small farm in Kent says, "they farm in precisely the same way as a poet writes a sonnet or a sculptor carves from the block. They are in the most definite application of the term artists who assemble the materials of their craft into a creative unity" (Massingham, 1948, An Englishman's Year, quoted in Keith, 1975). Interestingly, Emmerson also linked a good farmer to the true poet.

Ideas about the role of small family farming in the United States have been traced back to ideas developed during the early years of the Republic (Bonnen and Browne, 1989) i.e. the 1780/90s, and often to Jefferson's argument that the basis of democratic society was an independent yeomanry (Bonnen and Browne, 1989; Browne *et al*, 1992). Jefferson argued that farmers were the most valuable citizens and "the most independent, the most virtuous, and they are tied to their country and wedded to its liberty and interests by the most lasting bonds" (Jefferson, 1785, quoted in Browne *et al*, 1992). Jefferson's thinking emphasised the relationship between farming, citizenship and stability, whereas writers in the 19th century added a new dimension by stressing the moral and spiritual benefits of farm work. This combined "Jefferson's hardworking yeoman with a legendary superiority stemming from the prevailing Protestant work ethic of handwork as a measure of moral worth" (Bonnen and Browne, 1989: 12).

The American view of the family farm outlined above is probably not unlike the European view of small family farms. Typically, in Western Europe during the formative years of the then EEC, family farming was seen as the bedrock of European society and rural economy. This was reflected by the founding fathers of the European Community who, in the 1956 Spaak report (which formed the basis on which the EEC was established), recognised the importance of the "social structure of agriculture based on the family farm" (Fennell, 1987: 5). Then, in the year following the signing of the Treaty of Rome, the 1958 Stresa Conference established the principles of the Common Agricultural Policy (CAP) issuing a general resolution stating that agriculture was both an integral part of the European economy and an essential factor in social life. Moreover, "given the importance of the familial structure of European agriculture and the unanimous wish to safeguard this character, every effort should be made to raise the economic and competitive capacity of such enterprises" (quoted in Fennell, 1987: 11). Thus, in the early years of the Community, family agriculture was positioned as the 'economic engine' driving rural development coupled with an important social role.

Although much has changed in the intervening years, family farming is still adhered to on mainland Europe in a way that it is not in UK policy circles. Or more precisely, within Defra's policy for English farming. That is not to say that the UK lacks champions of the small family farm. For instance, Denman has championed the small farm in much the same way as some of the American writers quoted above, claiming that, "The small farmer in his calling and character contributes to the well-being of us all. ... It is neither sentimental nor a false perspective which sees the small farmer as the bastion of independence and social liberty." (Denman, 1981: 9)

Small family farms are seen to contribute to the spiritual and moral fabric of society: "Farming is a way of life. Farmers contribute more than food to the welfare of the nation, in terms of ability,

character, morality, work habits, experience of the natural world." (Weiss and Wilson, 1991, quoted in Wilson, 1996: 237)

More recently, Pretty (2002) has argued that "social connectedness, trust and participation in community life was greater where farm scale was smaller". Newby and others also highlight the link often made between the supposed characteristics of small family farmers and the nation's health: "The yeoman virtues of sturdy independence and solitary self-help have long been prized and celebrated as a source of strength in the English national character ... It is worth noting that this perspective continues to infect much of the thinking and writing on what has come to be known as the 'small farm problem." (Newby *et al*, 1981: 38)

It is against this background that the social and community contribution of small farmers is explored in this section. Moving beyond assertion, what evidence is there for the contribution of small farms?

What evidence there is often comes from broader studies into social change in farming and rural communities. For example, in their research into East Anglian farmers in 1972, Newby *et al* (1978) recognised that what had previously been farmers' 'natural place' in the local community, was increasingly uncertain due to an influx of 'newcomers/outsiders/aliens' to the village who were not dependent for their employment on local farmers and therefore undermined the ability of farmers and landowners to dominate whole communities in the way they had been used to. The "cultural competences" (Cloke *et al*, 1998) of these newcomers, who have been able to take the place of farmers and assert their own values, has meant country living has become more similar to suburban territory, bringing with it new types of cultural conflict and implications for farmers. Parry *et al* (2005: 65), contend that "the traditional mainstays of rural and farming life – the pub, the church and markets (are) in widespread decline, partly because of competing time pressures on farmers, and partly because of the changing nature of the rural population." The implications of social change in rural communities that Newby *et al* (1978) began to identify were exacerbated by a lack of appreciation and understanding amongst the wider community.

Such trends have continued. Reed *et al* (2002: 38) described a "collapse of solidarity" in rural communities, where farmers played an "important but limited civic role in the broader community". Similarly, Burton *et al* (2005) and Appleby (2004) identified a decline of "social capital" in UK farming due to the erosion of traditional community ties and working arrangements. Interestingly, the stakeholder workshop reflected some of these same issues but in a more positive sense, with participants arguing that small farmers play an important community role, either formally on Parish Councils or informally as the people the village turns to to remove fallen trees that are blocking the road and to stack firewood for bonfire night for instance. However, in their investigation into the wider social impacts of agricultural restructuring in 2005, Lobley *et al* also identified farmers' withdrawal from rural society and decline 'social connectivity'. They argued that:

> "Despite being socially embedded in their communities (that is living very near their place of birth and most of their close family and friends) the results of the household survey suggest that farmers are less socially active than non-farmers. The reasons for this vary but are associated with a desire to avoid exposure to criticism (of farming/being a farmer), the lack of time associated with excessive working hours and, more straightforwardly, the declining number of main occupation farmers in rural areas." (Lobley *et al,* 2005: vi)

Farmers had withdrawn from fulfilling a 'niche role' for community activities such as supplying land, trailers or mowing grass for village fêtes, etc. Farmers accounted for the withdrawal from rural society in a number of different ways. Some withdrew from the community as a result of working longer hours – typically a result of farms getting bigger – which prevented them getting involved:

> "The two farms next door have gone from being 1000 acres to 4000 acres each. There's no one there. There's no one living the cottages, they've all been sold off. Two men running 4000 acres and that's it." (Lobley *et al,* 2005)

In the most part, farmers claimed to have withdrawn from their local communities in order to avoid criticism from newcomers. Lobley *et al* (2005) identified strong feelings of dissatisfaction and of persecution which "derived from farmers' perceptions of the changing population of their communities […] in particular, the perception that 'townies' do not understand or appreciate them". One farmer stated:

> "Years ago everybody had quite a good feeling about farms, a good opinion of farmers … you'd be working away and people would come past and they'd say, 'Well I dunno, you might get that hay in before, you know, it's gonna rain tonight, you know, you'd better get them bales up.' They really couldn't give tuppence now, and what we do, we always, I always feel that you're under suspicion. Erm… there's never a positive attitude from them, it's always negative, it always appears to be negative attitude with new people to the village" (Lobley *et al*, 2005: 30)

According to Lobley *et al* (2005) farmers' changing place in the community has had profound implications for farmers. They documented cases of stress, illness and negative impacts on interpersonal relationships. Furthermore, Lobley *et al* (2002) suggested that such withdrawal from the community can lead to a downward spiral of depression. Stress, illness and difficulties within interpersonal relationships have obvious implications for the farm business. Conversely, according to Meert *et al* (2005), social interaction and farmers' integration into social networks are significant factors in farmers' decision to establish a new diversified enterprise i.e. farmers' lack of social interaction, as reported by a number of commentators, across a range of contexts (Lobley *et al*, 2002; Lobley *et al*, 2005; Burton *et al*, 2005; Appleby *et al*, 2005), has implications for farmers' propensity to establish new enterprises as well as direct implications for their own well-being. Thus, the 'social', is inseparable from the economic.

Contributors to the call for evidence were able to describe in more detail the contemporary contribution of small farmers in local communities:

> "Small farms that engage with the public promote farming and food production to the general population by bringing people on to the farm." (Anonymous)
>
> "…. small farms usually mean more homes, supporting more people and therefore a more vibrant local community of activities, services and businesses." (Anonymous)
>
> "Small farms are seen as more approachable by the public and tend to interact better with their non-farming neighbours, particularly as small farms are more likely to have boundaries adjoining non-farming land." (Anonymous).
>
> "Generally the owner of a small farm is known in their local community. When corporate businesses take over, the manager may live miles away, and the work is done by contractors who may be based hundreds of miles away." (Anonymous)
>
> "Small farms often make a greater contribution to the social capital of rural communities. This may be because of a long term presence in the community, a reliance on local community for income i.e. direct selling, or due to part time work being gained in the community to supplement farm income, or from the reverse-part time work being gained for the community to supplement farm labour." (Anonymous).

Although these statements cannot be backed up with statistics, they nevertheless reflect the lived experience of a range of respondents (not all of whom are farmers). Evidence from the SW Farm Survey indicates that in terms of recent changes in levels of contact between farmers and non-farmers, there is little or no difference between farmers of different sizes. On the other hand, compared to the largest farms, small famers of under 50 ha were more likely to 'strongly agree' with the statement that farming is essential to the local community (see Table 3.4 below).

The following example clearly describes the wider social and community benefits associated with this particular small farm:

> "The other main activity of the farm is as a "Care Farm". My wife offers her services to the local community as an equine facilitated psychotherapist. Basically, she uses horses as partners in her therapy practice to help people, especially autistic youngsters. We have many visitors to the farm; one is a weekly group of 12-15 autistic youngsters from the local college - they've been coming to their farm for about five years. Working with the animals and doing light farm duties helps to build their confidence and their communication skills."

Table 3.4 Agreement with the Statement 'Farming is Essential to the Local Community', by Farm Size (ha)

	Farm size (ha)					
	<50	50<100	100<150	150<200	200<250	250+
Strongly disagree	6.7%	6.1%	10.8%	5.1%	8.0%	8.7%
Disagree	10.5%	7.9%	10.8%	9.1%	12.0%	12.8%
Neither disagree nor agree	14.7%	23.1%	18.1%	22.2%	24.0%	21.5%
Agree	19.2%	24.3%	21.6%	28.3%	12.0%	20.1%
Strongly agree	48.9%	38.6%	38.7%	35.4%	44.0%	36.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SW Farm Survey, 2016

In another example of encouraging greater interaction between producers and customers, Grown Green @ Hartley Farm is an award-winning sustainable market garden where a new entrant rents land from a larger farm. According to their website:

> "Grown Green has an open-gate policy, and customers, chefs and anyone interested in sustainable growing are welcome any time to come and have a look around the site – just let us know when you'd like to pop in."

Another example of small farms explicitly intended to provide a link between people and the land and producers is Stroud Community Agriculture (see Box 3.1). Stroud Community Agriculture is an example of the increasing number of Community Supported Agriculture (CSA) initiatives in which the risks and benefits of farming are shared between farmers and CSA members.

Box 3.1 Stroud Community Agriculture

Community supported agriculture (CSA) enables those who consume the food (the members) to support the farmer by committing to buy a "share" in the harvest at the beginning of the season, and maybe contributing to work on the farm when the labour demand is high (for example – large weeding jobs). The aim is to establish a mutually beneficial relationship between farmers and consumers, and build up a community around the farm. Hence many CSAs also provide their members with social benefits, such as farm picnics, bonfires and an annual dance.

This CSA scheme has been established for 12 years, and supplies 220 households members with food each week. A basic share is worth £40/month, which includes a £3 membership fee to cover the admin of the scheme – it includes enough vegetables for a couple, although amounts vary through the season according to availability, with gluts in the summer amply making up for low periods in the early spring. The monthly standing order enables the farm to have the security of a regular cash flow, and members are asked to give 3 months' notice if they wish to stop, to enable replacement members to be found. As well as vegetables, members can also buy frozen beef, lamb and pork throughout the year. Members are not required to work in this CSA, but can take part in regular community work days if they choose.

The farm rents 17 ha of land, of which 3 ha is down to biodynamic vegetables and 14 ha used for grazing and forage production. This scheme sells a £110,000-132,000 worth produce each year, generating a mean net income of £9,250 and employs 3.5 full time equivalents. Administration of the scheme is carried out by a voluntary committee made up from the membership, elected at the AGM.

A final piece of evidence that suggests that small farmers might have closer social ties to their local community is found in Table 3.5 which shows a very strong relationship between levels of complaints received by farmers and farm size. It is striking indeed that 72% of farmers with over 500 hectares have experienced complaints. Thus in a number of categories where there are few complaints overall, larger farmers are significantly affected. Important examples include other smells (16%), health risks from pesticides (11%), destruction of wildlife or landscape features (14%), and plans to sell land for development (11%). 78% of small farmers (less than 50 ha) had received no complaints at all.

3.3.1 The social context of farming as an occupation

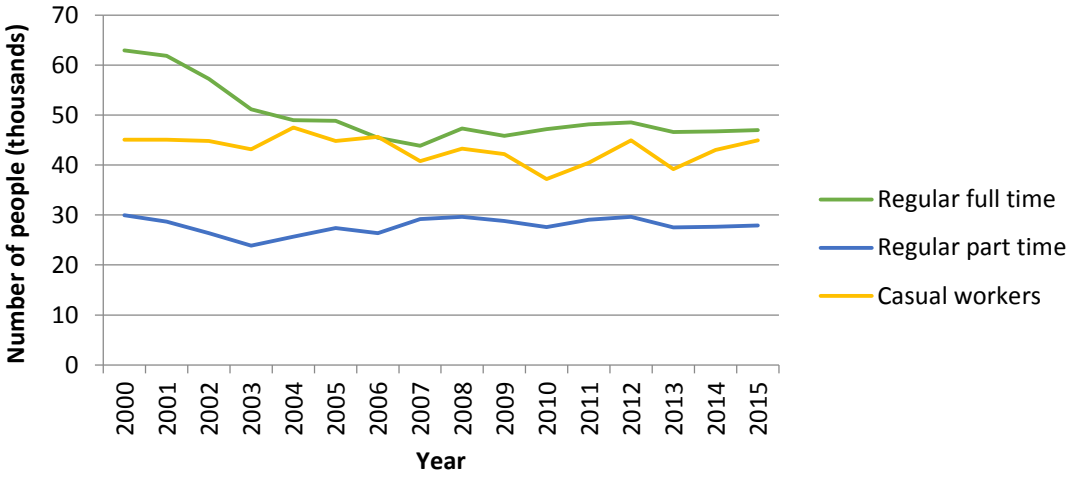
Although based on data from the 1970s, Newby *et al* (1978) explicitly identified differences in levels of work satisfaction according to farm size. According to Newby *et al* (1978) 34.4% of their 1000+ acre sample, spent more than half of their week doing office work, compared with only 15.1% of farms in their 44 parish sample. On small farms, Newby contends the situation is almost entirely reversed. The small farmer constitutes a high proportion of the total labour force on a farm, and spends a considerable amount of his time out on the farm – driving tractors, milking cows and bringing him into much more frequent contact with his employees.

Table 3.5 Incidence of Verbal or Written Complaints Activities from Members of the Public or Representatives of Public Agencies, by Farm Size in GB (% of Farmers)

	Farm Size (ha) (Crops and Grass)					
	<49.9	50-99.9	100-199.9	200-299.9	300-499.9	>500
No complaints received	78	72	61	53	60	28
Public access issues, such as footpaths	6	10	17	23	22	28
Mud or slurry on roads	5	8	16	24	13	44
Hedge trimming	4	4	5	6	7	5
Use of slow moving heavy machinery on roads	2	3	4	5	9	9
Smell from livestock units	2	2	2	2	-	-
Other smells	2	2	2	3	2	16
Health risks to public from livestock units	-	-	1	1	-	-
Health risks to public from pesticides	-	1	2	1	-	11
Flies or vermin believed to emanate from farm	3	-	1	3	-	-
Proposed or recently constructed agricultural buildings	-	1	1	2	6	5
Pollution or contamination of water courses	1	2	3	3	3	-
Agricultural 'litter' (such as silage bags, etc.)	1	-	-	-	-	4
Destruction of wildlife and landscape features (including hedges)	-	1	2	2	6	14
Game shooting on your land	-	1	2	2	2	5
Hunting on your land	-	1	1	4	3	-
Residential barn conversions	-	-	1	-	-	-
New non-agricultural uses for farm buildings	1	-	1	-	-	-
Plans to sell land for development	1	2	1	3	2	11
Plans to use land for non-agricultural purposes	1	1	1	-	1	-

Source: Milbourne *et al,* 2001

Figure 3.1 Number of Hired Workers UK, 2000-2014



Source: FBS, 2016

Farming has been a solitary occupation for some time, but recent economic pressure and a subsequent need to streamline farm businesses has meant that farmers find themselves working alone (Lobley *et al*, 2005). So whilst Newby's evidence suggests smaller farmers have more opportunity to 'farm' in the accepted sense, the well-documented reduction in the number of regular, full-time hired workers (Figure 3.1) has seen small farmers in particular, suffering from isolation and loneliness.

Workshop participants discussed the problem of loneliness and isolation for the small farmer who often works alone. In their research into stress in the farming community, Parry *et al* (2005: 55) captured the impact of losing farm workers, particularly in geographically remote areas, and the impact on small farmers:

> "Several farmers commented on the detrimental effects of the longer hours they needed to work, and on their regret at having to lose valued members of staff because their farms could no longer sustain larger workforces. This had the effect of increasing farmers' sense of isolation, which was important in two senses: firstly, in terms of a qualitative decline in workplace camaraderie and occupational satisfaction; and secondly, in terms of the loss of support staff and increased risk to individuals taking on the workloads of multiple farm workers. This could be particularly detrimental in areas where farms were geographically remote, and when farms were small or run by one individual working alone, where loneliness and distance from support services may be issues of growing concern."

In contrast to this rather bleak picture of the life of the small farmer, the Landworkers' Alliance argued, in their submission of evidence, that small scale farming is associated with "a culture of satisfying and skilled employment" and that "smallholders are motivated by environmental, political, and quality of life reasons".

The SW Farm Survey captured a range of data that sheds some light on the quality of life and subjective well-being of respondents. Table 3.6 indicates that a sizable minority (28.2%) of the operators of farms of less than 50 ha reported never being able to get away from the farm for a holiday (this result is statistically significant). Of course, many of these farmers may be quite happy not to take a break but it seems likely that some are effectively 'trapped' on their farm, unable to step off the treadmill of farming life. Other data however, paints a more positive picture. When

asked how satisfied they were with life in general compared to 12 months ago, 72.4% of farmers with less than 50 ha reported no change compared to 53.5% of the operators of the largest farms. Perhaps more telling is the 47.1% of famers with 200 to 250 ha and 35.9% of farmers with over 250 ha who reported feeling less satisfied compared to just 17.9% of farmers with 50 ha or less (see table 3.7).

Table 3.6 Frequency of Holiday, by Farm Size*

	Farm size (ha)					
	<50	50<100	100<150	150<200	200<250	250+
More than once a year	21.3%	22.9%	22.4%	26.0%	19.2%	45.2%
Once a year	24.8%	30.5%	28.4%	32.0%	31.5%	28.1%
Less often than once a year	25.7%	23.2%	28.9%	31.0%	37.0%	20.5%
Never	28.2%	23.5%	20.4%	11.0%	12.3%	6.2%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*The association between frequency of holiday and farm size is significant when P<0.001

Source: SW Farm Survey, 2016

Table 3.7 Life Satisfaction Compared to a Year Ago, by Farm Size*

	Farm size (ha)					
	<50	50<100	100<150	150<200	200<250	250+
More than satisfied	9.7%	9.2%	10.9%	10.9%	7.1%	10.6%
Less than satisfied	17.9%	30.1%	32.2%	28.7%	47.1%	35.9%
About the same	72.4%	60.7%	56.9%	60.4%	45.7%	53.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

*The association between frequency of holiday and farm size is significant when P<0.001

Source: SW Farm Survey, 2016

3.4 The Environmental Contribution of Small Farms

A discussion of the origins of the idea that small farms are better for the environment would take far more space than we have and would take us further back in history than is necessary for the purposes of this report. There is however possibly one 'common sense' explanation for the assumed relationship between small farms and the environment. Oliver Rackham famously wrote that:

> "Except for town expansion, almost every hedge, wood, heath, fen, etc. on the Ordnance Survey large scale maps of 1870 is still there on the air photographs of 1940. ... Much of England in 1945 would have been instantly recognisable by Sir Thomas More, and some areas would have been recognised by the Emperor Claudius" (Rackham, 1986: 26)

Contrast this picture of a largely unchanging countryside, with the then NCC's (Nature Conservatory Council) assessment of the post war countryside:

> "While a few habitats that are rich in wildlife are increasing, most in the intensively farmed parts of Britain are declining in size, in quality or both. The decline is serious: it is occurring

throughout the lowlands and more fertile uplands ... The rate and extent of change during the last 35 years have been greater than at any similar length of time in history" (NCC, 1977: 21).

Although much had changed in the post war period, as we have seen, a particularly notable change was the growth in average farm size and the loss of small farms. From here it is an easy assumption to make that as the decline in the environmental quality of the countryside coincided with increasing farm size, larger farms must be worse for the environment and smaller farms better. As with most things however, reality is more complex.

3.4.1 The nature conservation value of small farms

Although now increasingly dated, Potter and Lobley (1992, 1993) and subsequently Lobley (1997, 2000) provide the most comprehensive discussion of the environmental contributions of small farms in a British context. They recognise that what they term the "strong conservation case" for small farms is often based on a belief that their operators are somehow inherently more sensitive to the environment and therefore provide the best way to organise and manage the land but they also identify other arguments in support of the conservation value of small farms:

> "If small farms can be shown to be more environmentally sensitive, is this because the people managing them are more conservation-minded or is it because they are conservationist by default – they lack the means to intensify production in the way a larger, more prosperous farmer might? Alternatively, are small farms conservationist by association because they tend to be of a type that is environmentally sensitive or rich in conservation assets anyway?" (Potter and Lobley, 1993: 271)

Thus there are two issues here. Firstly, is there evidence that environmental performance or quality is related in any way to farm size? Secondly, if that is in some way the case, why is this so – is it by inclination (i.e. the attitudes and behaviour of the operators of small farms), default (i.e. the inability or unwillingness of small farm operators to engage in actions that have a negative impact on the farmed environment) or association (i.e. are small farms associated with types of agriculture that are naturally rich in environmental assets)?

Contributors to the call for evidence certainly shared the view that small farmers were more inclined to farm in a manner that is environmentally friendly:

> "Small farms are often more willing to look at their environmental impact and more willing to assign areas of the farm to wildlife. Small farms tend to be more sensitive to the land they occupy and farm in a way which more fits the landscape. Small farms will often be less intensive in their use of the land and be more sustainable for the environment." (Joel Woolf, Partner, Head of Agriculture, Foot Anstey)

> "Small farms also act as magnets for wildlife that exists at low population densities on their larger neighbours. Small farms are brilliant for monitoring wildlife that exists invisibly on larger areas. On our little farm we have different habitats from our immediate neighbours and have locally unique species. However, we know that some species have a meta-population dynamic that means that they must exist on our neighbours land even though they are invisible there." (Huw Jones, Glyn-Coch Farm)

The available empirical evidence suggests a more complex situation: drawing on a survey of 504 British farmers in 1993, Lobley (1997, 2000) made a significant contribution to the debate on the

environmental contribution of small farms. Using the concept of conservation capital[3], Lobley (1997, 2000) demonstrated how smaller farms (<50 ha) are more likely than larger farms (>200 ha) to have zero stock of conservation capital (39% versus 23%) (Table 3.8). However, by separating the small from the very small, the latter, whilst still containing a significant proportion of zero stock parcels (33%), emerged as having the highest concentration of high conservation stock parcels across the sample (50%).

Table 3.8 Degree of Conservation Capital by Farm Size (ha)

Conservation capital	Very small <20	Small 20-50	Medium 50-200	Large >200	All
Zero	32.8	44.3	32.5	22.7	31.8
Low	17.2	2.6	40.1	37.9	34.1
High	50.0	29.1	27.4	39.4	34.1
Total (%)	100	100	100	100	100

The association between farm size and conservation capital was significant at 0.00026 level using Chi-square

Source: Lobley, 2000

Table 3.9 The Distribution of Conservation Capital by Landscape Type and Farm Size (% of Area of Conservation Capital)

Landscape type	Very small	Small	Medium	Large	Total
Arable	3.5	1.3	27.7	67.5	100
Pastural	9.1	14.7	3.3	39.9	100
Marginal and upland	12.1	1.7	14.9	71.3	100

Source: Lobley, 2000

Whilst this suggests very small farms are of high conservation value, because they represent a much smaller proportion of the total land area, they only account for 10% of the stock conservation capital in the survey, whilst the largest farms (200 ha or more) account for 59%. However, this distribution does vary by landscape type[4]. For example, in arable landscapes, 5% of conservationist capital is located on farms of less than 50 ha compared to 24% in pastural[5] landscapes, suggesting that location and landscape factors are important in determining conservation value, as well as farm size.

[3]Conservation capital is a measure of the area of deciduous woodland, semi-natural vegetation and extensive grass. Data from Countryside Survey 1990 was used to measure the extent of conservation capital different 'occupier parcels' (defined as the area of a farm included in the CS1990 field survey).

[4] The landscape type classification was derived through the combination of individual land classes into distinct groups. Although each landscape has a distinct spatial distribution, assignment to a particular landscape does not imply anything about specific location (e.g. arable landscapes can be found in the East Midlands and South of England). A detailed description of each landscape type is provided by Barr *et al* (1993) (also see, Bunce and Howard, 1992). Some of the characteristics of the landscapes referred to in the following analysis are as follows:

Arable landscapes – dominated by arable crops and intensive grass, found largely in Southern England, East Anglia and East Midlands, but also in parts of the East Coast of Scotland

Pastural landscapes – characterised by large areas of grassland, small fields, hedgerows and small woods. This landscape is typical of South West England, West Wales, parts of the Welsh/English border, and the Northwest.

Marginal and upland landscapes – found in Northern Britain, Wales and Scotland. Dominated by a mix of low intensity livestock farming and forestry. This landscape contains extensive tracts of semi-natural vegetation.

[5] Spelling of pastural is taken from CS90 and should not be mistaken for pastoral. The name is derived from the dominant characteristics of the landscape, i.e. pasture.

Drawing on these results, Lobley draws a balanced conclusion about the value of small farms to the environment. He suggests "there is some support for the assumption of conservation interest by association" and "in some locations (notably pastural landscapes) they [small farms] are responsible for a significant proportion of conservation capital, and their loss could expose land of conservation value to potentially environmentally damaging structural change" (Lobley, 2000: 601). He acknowledges that whilst small farms only manage a small proportion of the land, they nonetheless play a fundamental role in the collective provision of rural environment services.

More recent work tends to support Potter and Lobley's findings. Using the Agri-Environmental Footprint Index (AFI)[6] in combination with Farm Business Survey data for arable, lowland livestock and upland livestock farms, Westbury *et al* (2011) found that farm size (measured in terms of land area) had no significant effect on AFI values calculated for arable and upland livestock farms. However, on lowland livestock holdings, farm size had a significant effect on AFI ($p < 0.001$); with a significant increase in environmental performance with farm size. Westbury *et al* (2011) attribute this positive relationship to larger holdings using significantly less energy per hectare than smaller holdings, as well as having greater land use diversity, and using less water use per hectare compared to their smaller counterparts (Table 3.10).

3.4.2 Small farms and other environmental issues

Research into the environmental implications of farm size is limited, despite large bodies of literature pertaining to the contamination or degradation of the environment and surrounding ecosystems, e.g. damage to soil, leaching, runoff, and eutrophication, and despite a longstanding anecdotal belief that it is large farms that are most damaging to the environment. (Heffernan and Green, 1986)

More recently, and in recognition of the fact that demands on farmers' soil management competencies will need to increase, Ingram (2008) asked "are farmers in England equipped to meet the knowledge challenge of sustainable soil management?". Although she did not specifically intend to explore the relationship between soil management practices and farm size, it nonetheless emerged as part of the analysis. Specifically, the issue of farm size (measured in terms of acreage) emerged in farmers' use of manures as part of the nutrient budget for the farm, which according to Ingram (2008: 220) requires "understanding the principles of nutrient dynamics in the soil and being able to estimate amounts, and the nutrient content, of manure so that artificial fertilizer rates can be adjusted accordingly". Ingram observed how small farms failed to see manure as an asset. In contrast, bigger farms were "more disciplined about accounting for manure, measuring its value as part of their nutritional programme and using more sophisticated spreading machinery" (p. 221).

[6] A farm-level measure of environmental performance which aggregates a range of measurements of agri-environmental indicators; a high score depicts good environmental performance

Table 3.10 Indicator Values for Lowland Livestock Holdings According to Farm Size (ha)

	Small < 80 (n=60)	Medium 80-120 (n=27)	Large >120 (n=51)
Fertiliser units (tonnes) per ha	0.59	0.34	0.50
Grazing livestock units per ha forage	1.89	1.42	1.59
Energy consumption – units per ha	90.48	97.49	60.31
Water usage m^3 per ha	33.28	28.36	18.47
Rough grassland % of utilizable agricultural area	2.96	0.04	3.05
Temporary grassland - % of total grassland	27.96	12.41	34.25
Woodland cover % of total farm area	0.19	0.13	2.49
Land use diversity	0.27	0.41	0.60

Source: Westbury *et al.,* 2011

One advisor interviewed suggested nutrient budgeting was a 'closed book' for 95% of farmers, with larger arable farmers being the only ones to take an interest. Farmers broadly agreed with this, particularly those from smaller dairy and mixed holdings, often constrained by the size of farm, poor soils, and their own lack of experience. Although it was smaller farmers that emerged as struggling with the concept of nutrient budgeting, Ingram also identified some suggestion that the use of large machinery – typically on larger holdings – is threatening farmers' knowledge of the soil by removing "their physical and sensual contact with the soil, obscuring any visible signs of problems with the subsoil, which may have been detected earlier by someone on foot" (Ingram, 2008: 223). Farmers and advisors interviewed suggested that this is only relevant for larger farmers who hire labour and utilize large machinery.

With reference to farmers' behaviour towards water quality management in Nitrate Vulnerable Zones (NVZ) in Scotland, Barnes *et al* (2011) utilised cluster analysis to identify three distinct groups according to their agreement with a number of key statements: 'resistors', 'mulifunctionalists' and 'apathists'. As evident in Table 3.11, 'resistors' were largest in terms of both income and acreage and were defined by mostly negative views towards NVZ regulations. They disputed the link between water quality and the health status of the farm and tended to avoid responsibility for water quality. For example, they strongly agreed with statements such as "the cost of avoiding polluting watercourses is too great for the farmer to bear alone" (p. 285). Despite valuing resource maximization, they placed very little value on the environment and nitrogen management – something Barnes *et al* (2011) describe as contradictory, as the aim of good nitrogen management is to facilitate increased resource efficiency. 'Multifunctionalists' were small in terms of income, and moderately sized in terms of acreage. 'Multifunctionalists' tended to agree with the statements and appreciated the multifunctional role of farmers. The smallest cluster (economically and physically), 'apathists' neither agreed nor disagreed with the majority of statements regarding water quality management and appeared to be generally disengaged with the regulations.

Table 3.11 Socio-Economic Characteristics by Cluster Type

	Resistors (29% of sample)	Apathists (32% of sample)	Multifunctionalists (39% of sample)
Main income group (£ 000s)	20+	1-10	1-10
Area category (ha)	250+	<50	50-150

Source: Barnes *et al*. 2011

Table 3.12 Adoption of Voluntary Water Management Practices

	Resistors	Apathists	Multifunctionalists
		% of cluster type	
Invested in fencing near water course	83	76	85
Invested in manure management software	17	8	7
Adopted PEPFAA[7] standards	35	14*	34
Begun to use buffer strips	52	19*	52
Received a grant under the NVZ scheme	4	2	13*
Taken advice regarding the NVZ regulations	20	3*	23

* Significant at 0.05%

Source: Barnes *et al*., 2011

Despite the most negative perception of water quality management, it was the 'resistors' who had the highest rate of adoption of water management practices (Table 3.12) – something which Barnes *et al* (2011) attribute to the group's emphasis on resource management. 'Resistors' were also more likely to take advice regarding NVZ regulations from consultants and advisors from outside the business. Unsurprisingly, 'multifunctionalists' – who shared the largest degree of enthusiasm towards water quality management – showed similarly high levels of adoption of water quality management initiatives. It was the smallest cluster (physically and economically) who demonstrated least change in their N-management behaviour.

3.5 Discussion

As this chapter has demonstrated, advocates of small farms make a strong case for the positive contribution that small farming makes to rural life and the countryside. Evidence, in the form of large scale statistical surveys for instance, is uneven but there are many examples of the role played by small farms. However, the evidence that is available typically suggests greater complexity than

[7] Prevention of Environmental Pollution from Agricultural Activity

simply being able to point to a clear cut relationship between farm size and environmental value, just to take one example. Rather it is (or appears to be) the complex interplay between size, farm type, attitudes and dispositions to behave in certain ways that contributes to the role played by small farms.

In addition to extolling the virtues of small farming, proponents point to the consequences of a decline in the number of small farms. The loss of small farms, it is argued, is associated with fewer people on the land and fewer to play formal or informal roles in communities, although as we have seen, there is evidence that famers have already withdrawn from various community roles. Further declines in the number of small farms probably would mean fewer local suppliers of food and other services. The environmental implications would depend very much on what replaces small farms and it would be just as dangerous to assume that all large farms are environmentally damaging as it would to assume that all small farms are environmentally beneficial. Ultimately, rather than privileging one set of farms structures over another, it a question of maintaining a diversity of farm size structures. This of course depends on the ability of small farms to be economically viable, an issue that is considered in the next chapter.

4. The Economics of Contemporary Small Farms

4.1 Introduction

As we have seen in Chapter 2, powerful economic forces continue to force the pace of farm growth. The infamous agricultural treadmill means that ever larger volumes of output are needed just to stand still in net income terms. Clearly however, not all farms are growing in size. Some pursue alternative strategies to generate income, through diversification and adding value. Others are supported by income generated off the farm and others adopt the tried and tested strategy of tightening the belt, although there is a limit to how far the belt can be tightened.

Drawing on analysis of Farm Business Survey (FBS) data commissioned specifically for this research, as well as other sources, this chapter examines the underlying economic circumstances of small farming and seeks to establish the factors that are associated with successful small farm businesses. The FBS analysis is of data from 2418[8] observations from the 2014/15 (the most recently available data) England and Wales Farm Business Survey (for full details see Wilson, 2016). Note that the data were weighted drawing upon the standard FBS weights in order to produce national (England and Wales) estimates. Clearly, being based on a single year, the financial figures presented here are in part influenced by factors such as agricultural commodity prices, input costs and exchange rates at the time. Nevertheless, although figures may change from year to year the relationship between different categories of farm remains instructive.

4.1.1 Farm Business Income

Farm Business Income (FBI) represents the financial return to the farm business[9] and is Defra's preferred measure of farm business performance. Figure 4.1 shows FBI by farm type and region, indicating the great variability in FBI across space and by type of farming. Figure 4.2 shows FBI results by Farm Size and EU region. It is no surprise that the largest FBI is achieved by large farm businesses in the East of England, with the smallest FBI being recorded by the small farm size category in each region (Wilson, 2016).

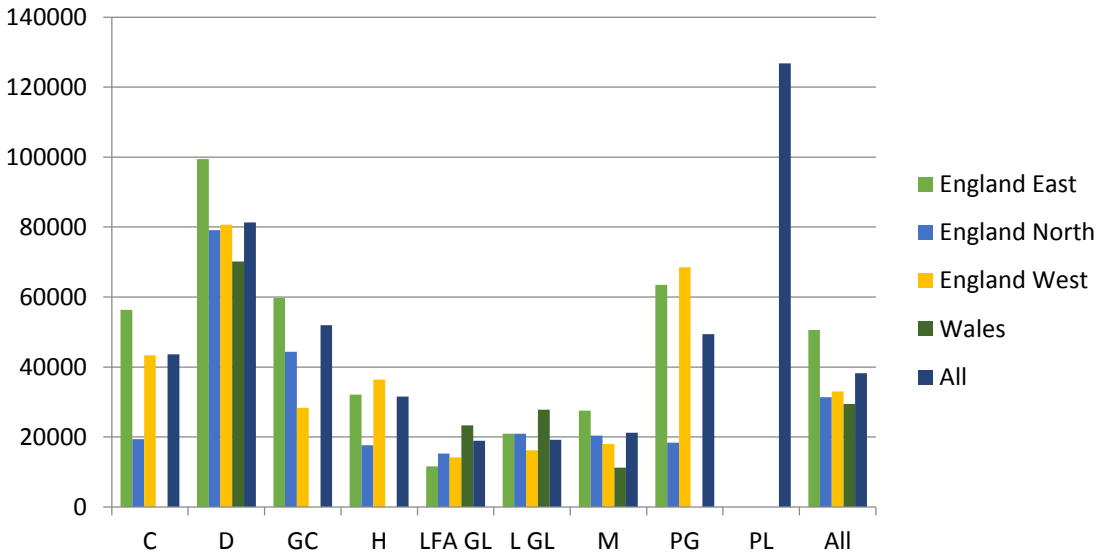
Figure 4.3 shows Net Farm Income (NFI) results by FBI performance group and farm size. These are within farm size group performance quartiles defined as: A (upper quartile; 75-100%), B (middle upper quartile; 50-<75), C (middle lower quartile; 25-<50%), D (lower quartile; <25%).

The FBS collects data on the sources that contribute to FBI. These are: agriculture; agri-environmental income; diversification; and Single Farm Payment (SFP) (and other subsidies). This analysis is very helpful in identifying the relative dependency on different income sources and areas of possible vulnerability. Figure 4.4 indicates the proportion of FBI that is derived from agriculture. It can be noted that as a group, both small and medium sized farms make a loss on their agricultural account. Figure 4.5 demonstrates the significance of agri-environmental payments. It can be seen that the relative contribution of such payments declines with increasing farm size and that for small mixed and Less Favoured Area (LFA) livestock farms agri-environmental payments make a substantial contribution to overall FBI.

[8] Smaller sample sizes were used for certain specific data analysis, specifically in relation to non-farm business income sources (1495) and the presence or absence of a nominated successor (2418).
[9] FBI includes returns from agriculture, agri-environment, diversification and the Single Farm Payment. It does not include the value of own labour or the rental value of owned land.

Turning to diversification, Figure 4.6 also indicates that, proportionally, the contribution of diversification income to overall FBI declines with increasing farm size. The importance of diversification as an income source for small mixed, lowland livestock and cereals farms is clear from Figure 4.6. Finally, for this analysis, Figure 4.7 demonstrates the importance of the single farm payment to all farms but particularly small and medium size farms. It is also notable that the SFP contributes in excess of 100% of FBI on small mixed farms.

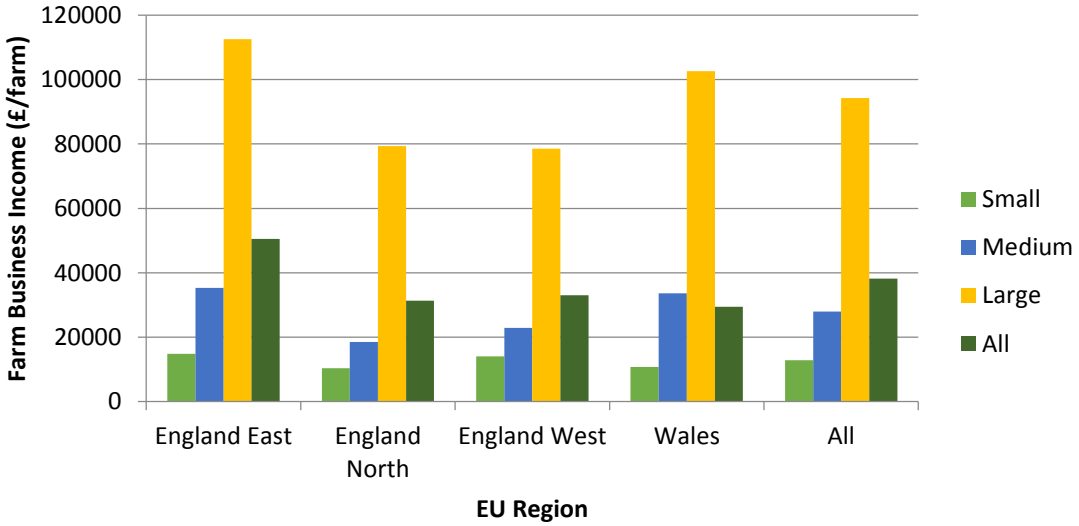
Figure 4.1 Farm Business Income (£/farm) by Farm Type and EU Region



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; L GL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.
Observations=2418. Wald Test: F=8.53; p-value<0.001.

Source: Wilson, 2016

Figure 4.2 Farm Business Income (£/farm) by Farm Size[10] and EU Region

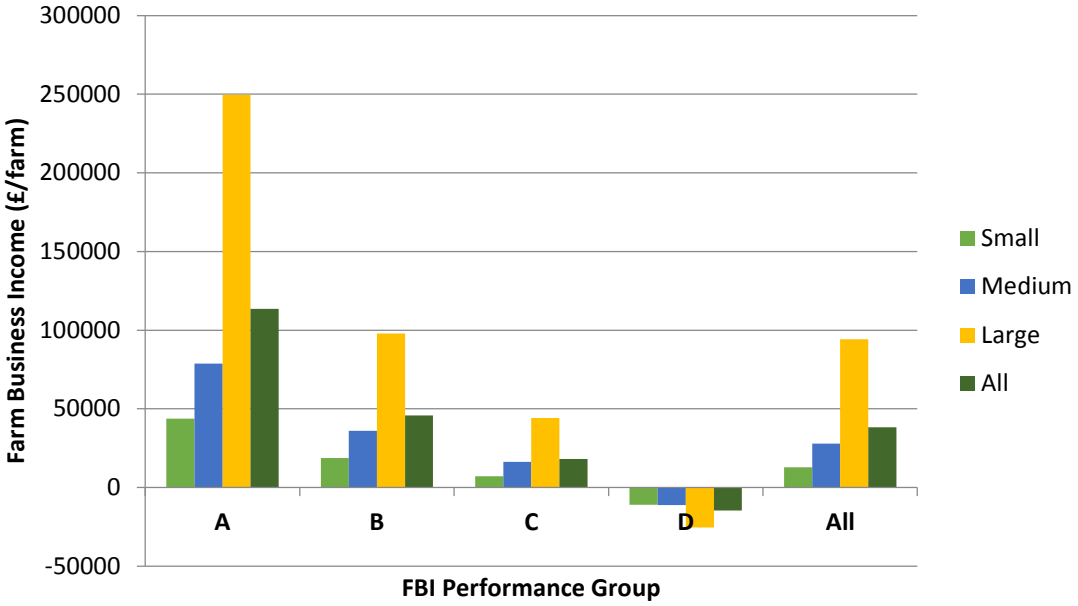


Observations=2418. Wald Test: F=33.44; p-value<0.001

Source: Wilson, 2016

[10] Based upon Standard Labour Requirements (SLR). Small=<2 SLR; Medium=2-<3SLR; Large=3SLR or greater

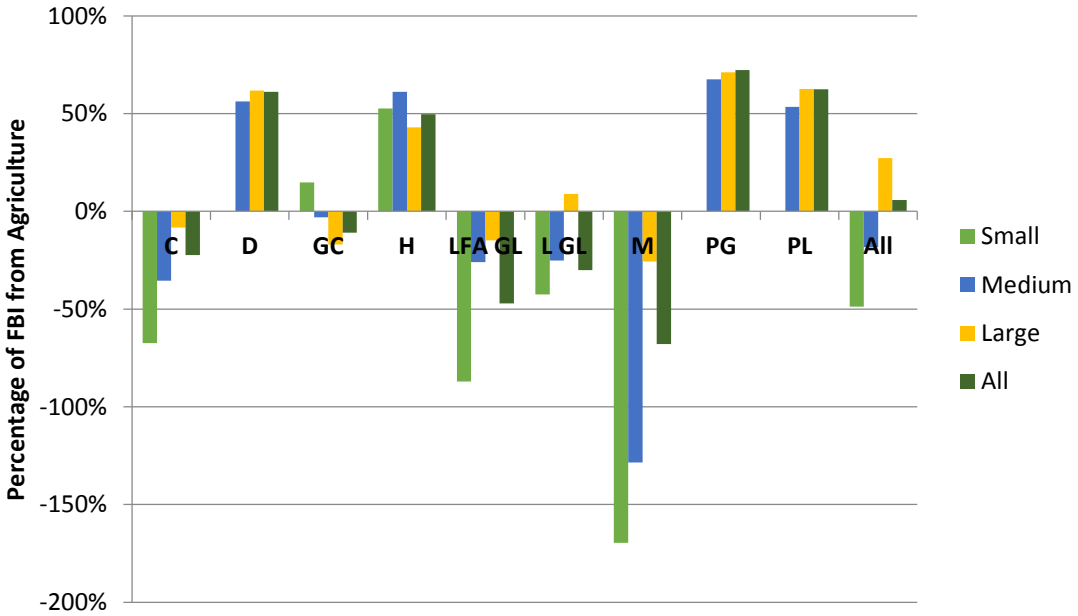
Figure 4.3 Farm Business Income (£/farm) by FBI Performance Group and Farm Size



Observations=2418. Wald Test: F=801.95; p-value<0.001

Source: Wilson, 2016

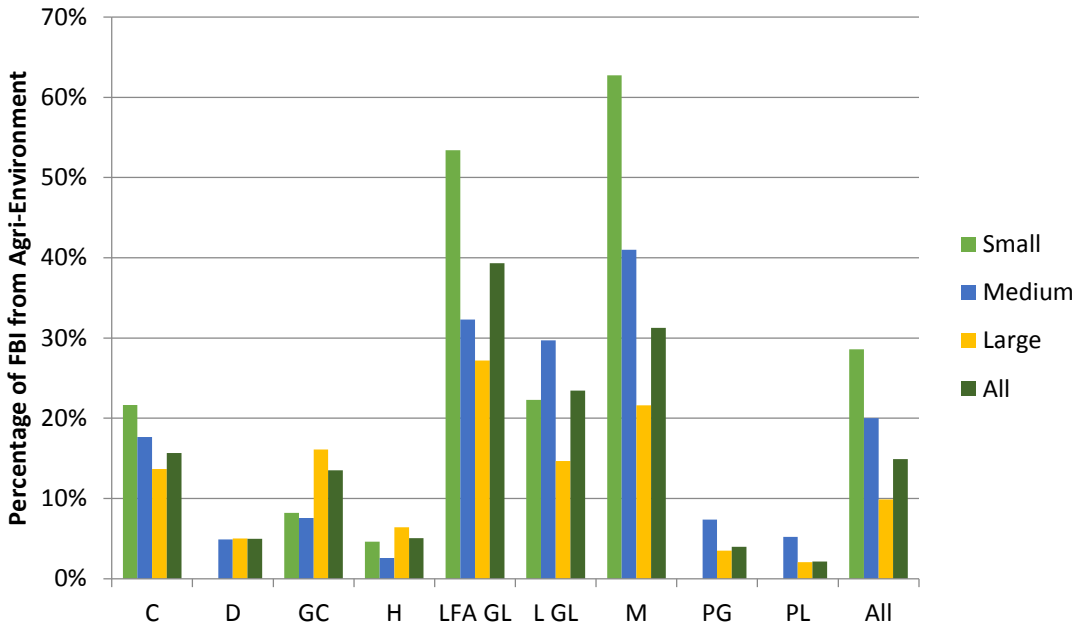
Figure 4.4 Percentage of Farm Business Income derived from Agriculture, by Farm Type and Farm Size.



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; L GL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.

Source: Wilson, 2016

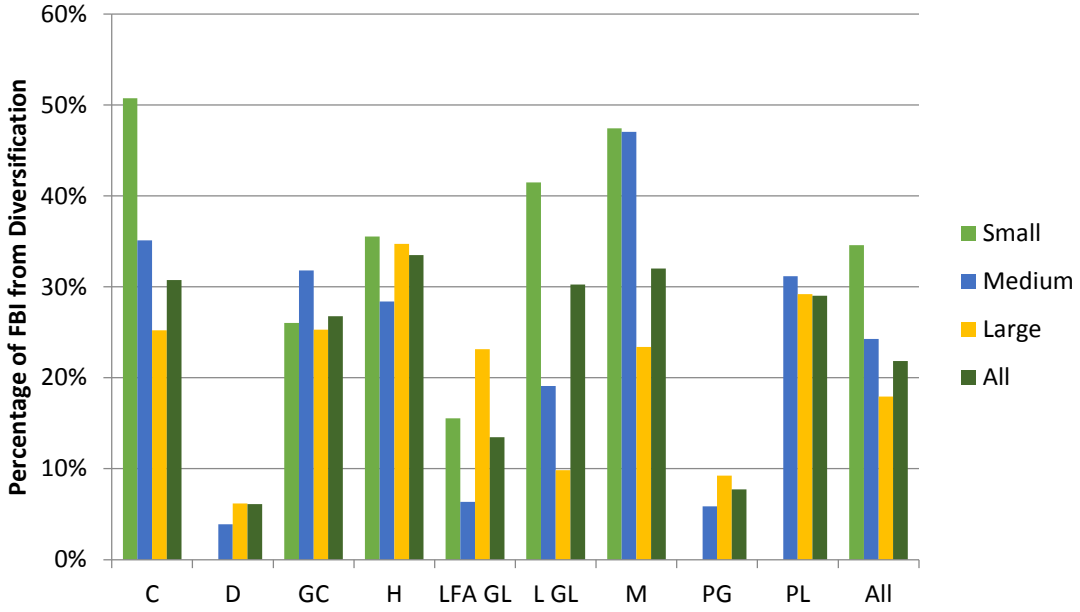
Figure 4.5 Percentage of Farm Business Income derived from Agri-Environment, by Farm Type and Farm Size



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; L GL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.

Source: Wilson, 2016

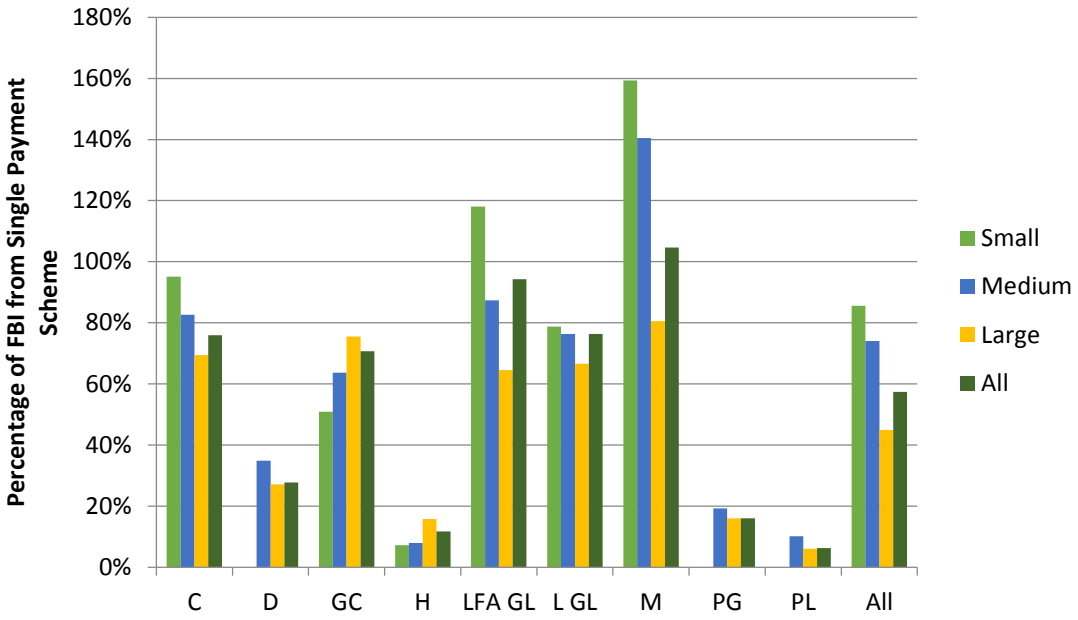
Figure 4.6 Percentage of Farm Business Income derived from Diversification, by Farm Type and Farm Size



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; L GL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.

Source: Wilson, 2016

Figure 4.7 Percentage of Farm Business Income derived from Single Farm Payment, by Farm Type and Farm Size.



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; L GL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.

Source: Wilson, 2016

This analysis has clearly demonstrated that small farms are dependent on income sources other than those derived from the sale of crops and livestock. The significance of the SFP to the FBI of both small and medium farms shows how vulnerable they could be to a significant reduction, or even loss, of the payment. The SW Farm Survey also collected data on different sources of income (although using different categories and methods). Table 4.1 confirms that the smallest farms (< 50 ha) are the least dependant on agriculture as an income source deriving on average 44% of household income from this source compared to 73% for the sample as a whole. On the other hand, these same farms derive an average of 20% of household income from pensions, hinting at the existence of a group of 'retirement holdings' within the small farm category.

Table 4.1 Mean proportion of income from different sources, by farm size (ha)

	Farm size (ha)					
	<50	50<100	100<150	150<200	200<250	250+
Agriculture on this farm	43.7	61.9	71.3	75.5	76.4	73.0
Non-agricultural enterprises on this farm	15.5	11.5	11.8	11.1	9.7	9.5
Income from off-farm work	13.4	8.9	5.4	7.4	6.1	6.3
Pensions, savings, investments	20.0	13.7	7.3	4.6	4.0	8.5
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: SW Farm Survey, 2016

The SW Farm Survey also collected evidence on some of the indicators of structural and agricultural diversification identified in Chapter 2. As can be seen from Table 4.2, the association between farm size and likelihood of a range of types of diversification is one that tends to favour larger farms. For instance, rental income from commercial and residential lets is a more common feature of the largest farms. This is not really unexpected given that larger farms are probably more likely to have spare/redundant buildings available for other uses. The largest farms are also more likely to engage in the provision of other agricultural services (such as contracting) to other farmers. In other cases, such as the provision of tourist accommodation, there is little difference between farms of different sizes.

Table 4.2 The Association between Farm Size (ha) and Diversification

	Size of farm (ha)						All farms
	<50	50<100	100<150	150<200	200<250	>250	
Processing and/or retailing of farm produce	8.2%	4.3%	4.5%	8.0%	11.1%	12.2%	7.1%
Tourist accommodation	15.0%	12.3%	16.6%	14.0%	16.7%	13.6%	14.4%
Rents from commercial letting	9.7%	9.0%	13.1%	13.0%	19.4%	25.2%	12.9%
Rents from long term residential letting	16.9%	19.4%	26.6%	35.0%	33.3%	45.6%	25.5%
Shooting	2.8%	3.4%	10.1%	4.0%	16.7%	16.3%	6.9%
Other recreation, (e.g. fishing, nature trails)	1.9%	1.9%	3.0%	3.0%	4.2%	8.2%	3.1%
Agricultural services (e.g. contracting)	12.9%	11.7%	7.5%	11.0%	15.3%	20.4%	12.6%
Equine services	10.0%	5.9%	7.0%	9.0%	11.1%	11.6%	8.5%
Forestry	4.1%	2.8%	5.0%	5.0%	5.6%	12.9%	5.2%
Other	12.9%	12.0%	12.1%	13.0%	6.9%	10.9%	11.9%

Source: SW Farm Survey, 2016

Ilbery's (1991) typology of structural and agricultural diversification identified the leasing of land as a form of "passive diversification". The label 'passive' is open to debate as some landowners may chose, in a very active sense, to let land to new entrants for instance. Nevertheless, as Table 4.3 indicates, on average, smaller farms let out around half the area that is let by the larger farms in the survey. On the other hand, smaller farmers are letting out a much greater proportion of the total land area that they are responsible for.

Table 4.3 Mean Area Rented Out (ha), by Total Farm Size (ha)

	Farm size (ha)					
	<50	50<100	100<150	150<200	200<250	250+
Mean area rented out (ha)	3.06	3.65	3.45	4.01	7.12	7.37
Mean % of total land area	10.14%	5.22%	2.83%	2.36%	3.19%	1.29%

Source: SW Farm Survey, 2016

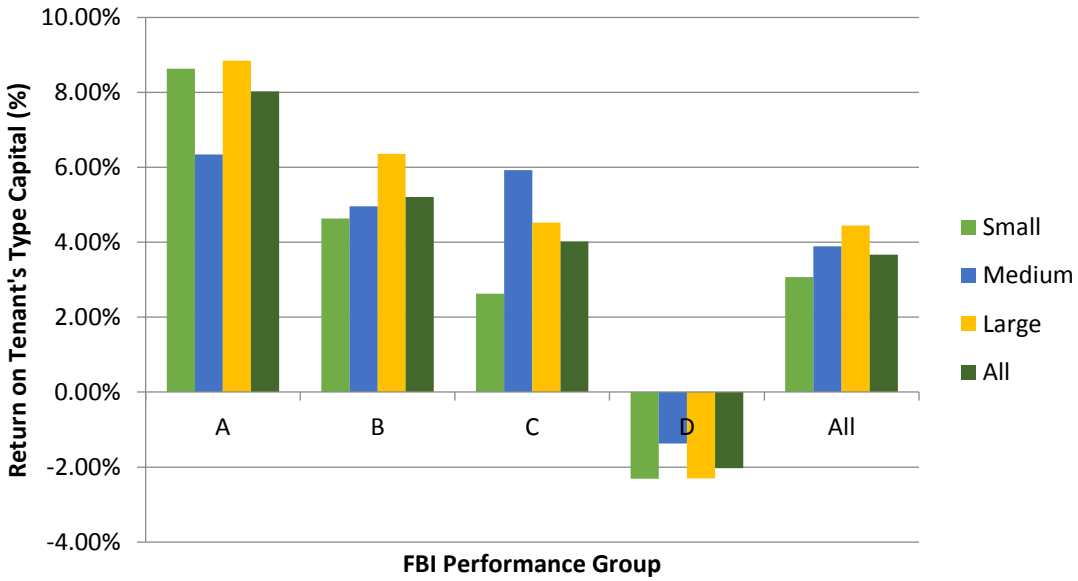
4.1.2 Other measures of financial performance

Wilson (2016) also reports on a number of other measures of financial performance and their association with farm size. For instance, focussing just on the agricultural element Wilson looks at the value of output for every £1 of cost (including an imputed value for unpaid family labour). On average across the FBS sample, for every £1 of cost an agricultural output of £0.77 was achieved (ranging from £0.64 to £0.96 from small to large farm businesses). Figure 4.8 illustrates the financial returns to the business measured by FBI as a proportion of tenant's type capital[11] employed (ROTCE) in the business. Not only do the best small farms gain a better return than medium farms but it is broadly in line with the returns on large farms.

Another measure of financial performance and potential business vulnerability is gearing (total liabilities as a percentage of net worth) which, as Figure 4.9 indicates, is lower on small farms across all FBI performance quartiles. Small farms have a lower level of debt relative to their overall business worth than larger businesses, indicating the potential for a greater degree of financial stability (Wilson, 2016; also see Andersons, 2016).

Although quite different to the indicators employed by FBS, the SW Farm Survey asked how respondents' farm income compared with the national average NFI for 2014/15. 77.6% of small farms (<50 ha) felt their FBI was 'considerably lower' than the national average figure while a fifth of farms over 250 ha considered their FBI to be 'considerably greater' than the average figure. Interestingly however, when asked for their perceptions of the economic prospects of the farm business over the next 5 years, taking all income sources into account, there was no evidence of a relationship between total area farmed and perceived economic prospects. So, although we have seen that farm income on small farms in the South West tends to be considerably lower than the national average FBI, we have also seen that such farms often rely on other income sources to buffer the effect of low farm income.

Figure 4.8 Return (FBI) on Tenant's Type Capital by FBI Performance Group and Farm Size

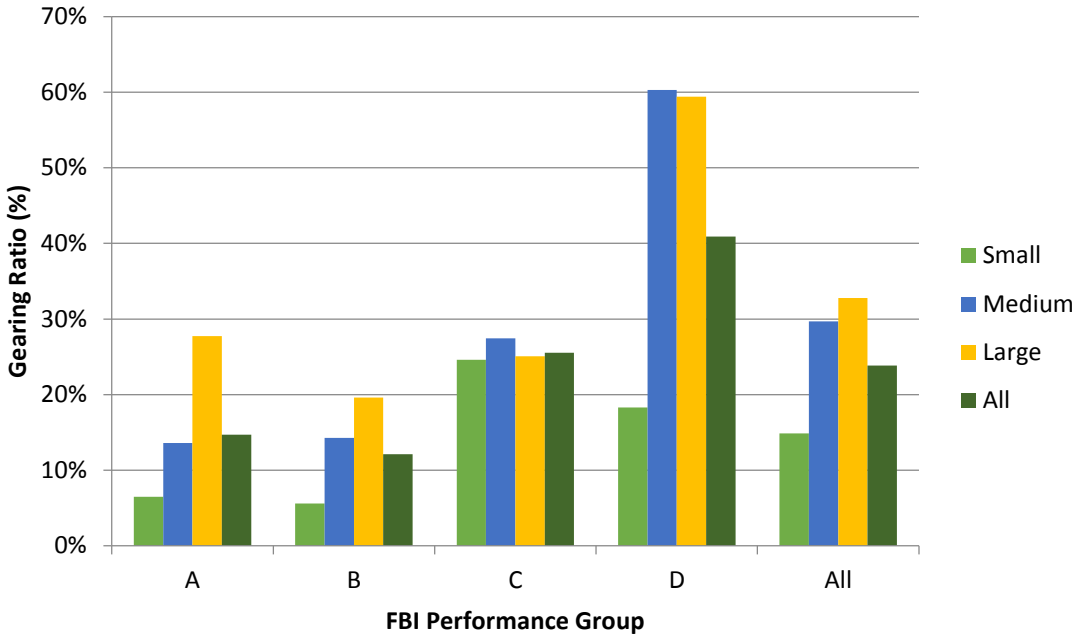


Observations=2418. Wald Test: F=51.04; p-value<0.001.

Source: Wilson, 2016

[11] Closing valuations for: machinery, livestock, glasshouses, permanent crops, crops, forage, cultivations, stores, liquid assets, and Single Payment Scheme entitlements.

Figure 4.9 Gearing Ratio, by FBI Performance Group and Farm Size



Observations=2417 (excludes one extreme outlier). F=10.23; p-value<0.001.

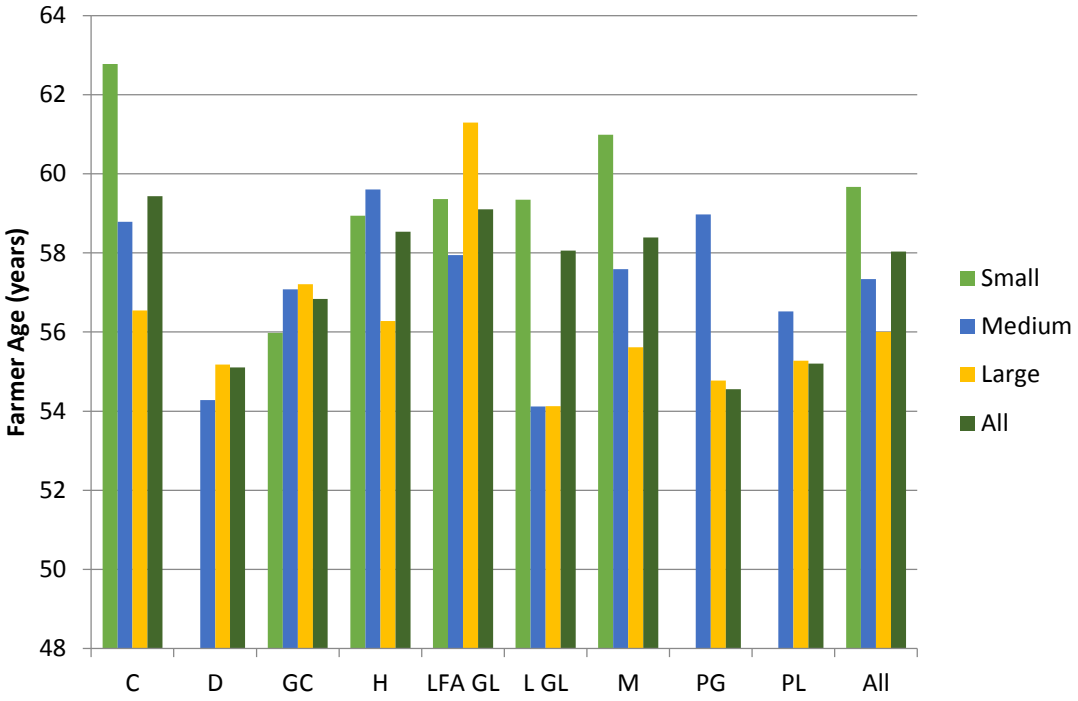
Source: Wilson, 2016

4.2 Beyond Financial Performance

Both FBS and the SW Farm Survey collect a range of other socio-economic data that shed further light on the characteristics and identity of the small farm population. Figures 4.10 and 4.11 present data on the association between farmer age and farm size. Figure 4.10 indicates that the operators of small farms tend to be older, although this does vary by farm type. From Figure 4.11 we can see that across the farm performance quartiles, the operators of small farms are older with those in the lowest quartile (D) being noticeably older. It would seem likely that at least some of the latter are 'retirement' (or maybe 'pre-retirement') holdings, possibly lacking the incentive of a successor to drive the business forward and improve performance.

Figure 4.12 provides some support for this, indicating that with the exception of performance group B, small farms are the least likely to have a nominated successor and that small farmers in group D are amongst the least likely of all farmers to have a successor. The relationship between farm size and succession is complex. For example, did a farm remain small because, lacking a successor, there was no/less incentive to grow, or did a farm decline in size and move towards becoming a small retirement holding when no successor was forthcoming? A further complication arises from the association between the age of the farmer/stage in life cycle and existence of a successor. Overall, just of a third (33.4%) of respondents to the SW Farm Survey reported having identified a successor while 40% had ruled out succession (although of course, the situation can change for both groups). The remainder reported that it was 'too early' to make a decision about succession. Many of these farmers were under 45 and at a stage of life where any children were not yet old enough to make a positive decision to succeed to the business. When the relationship between age of farmer and likelihood of successor is considered (Figure 4.13) it is clear that the older the farmer the more likely a successor has been identified. Those farmers in their mid-60s and older who state that it is still 'too early' to know if they will have a successor or not are often hanging on in the hope that a grandchild will take an interest in running the farm.

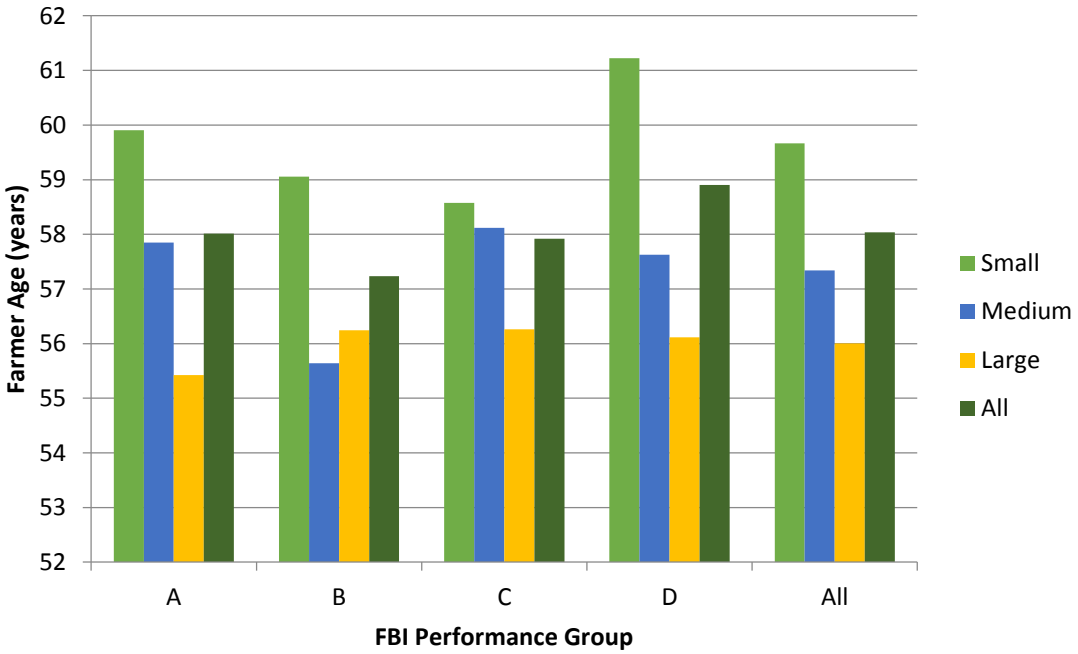
Figure 4.10 Farmer Age (years), by Farm Type and Farm Size



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; L GL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.
Observations=2418. Wald Test: F=3.65; p-value<0.001.

Source: Wilson, 2016

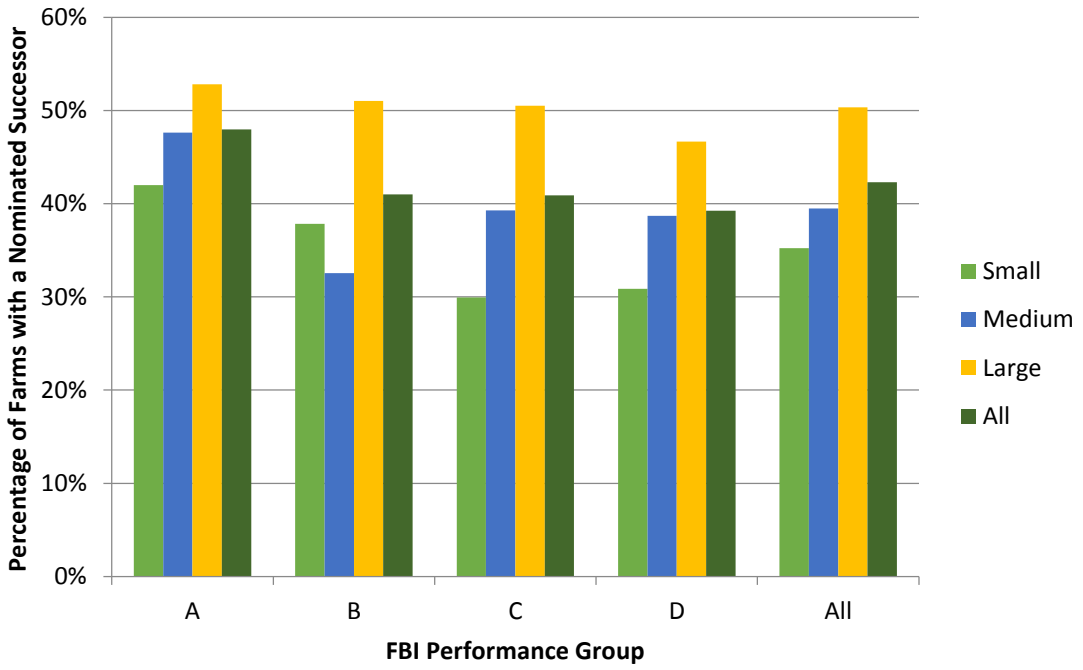
Figure 4.11: Farmer Age (years) by FBI Performance Group and Farm Size



Observations=2418. Wald Test: F=3.94; p-value<0.001.

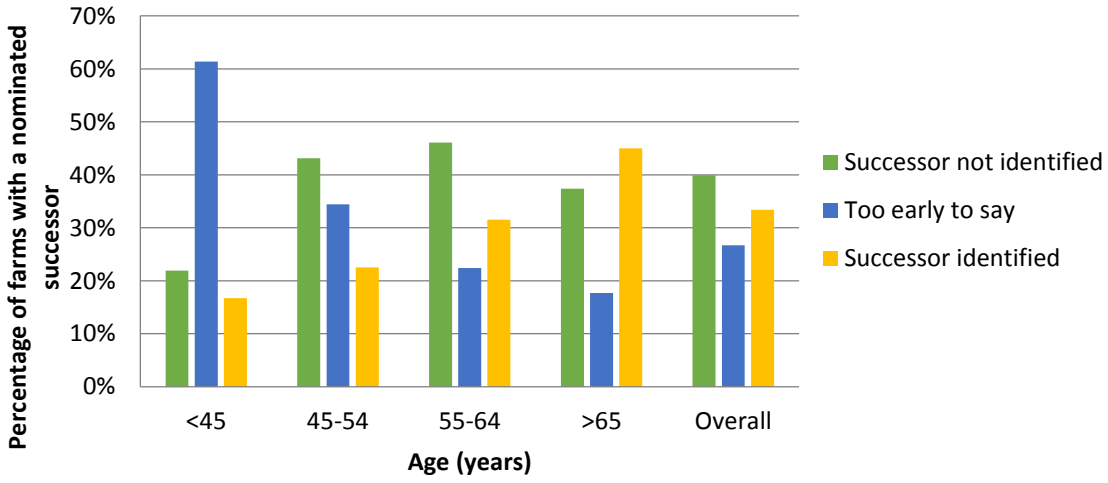
Source: Wilson, 2016

Figure 4.12 Farm Businesses with a Nominated Successor (percentage) by FBI Performance Group and Farm Size



Source: Wilson, 2016

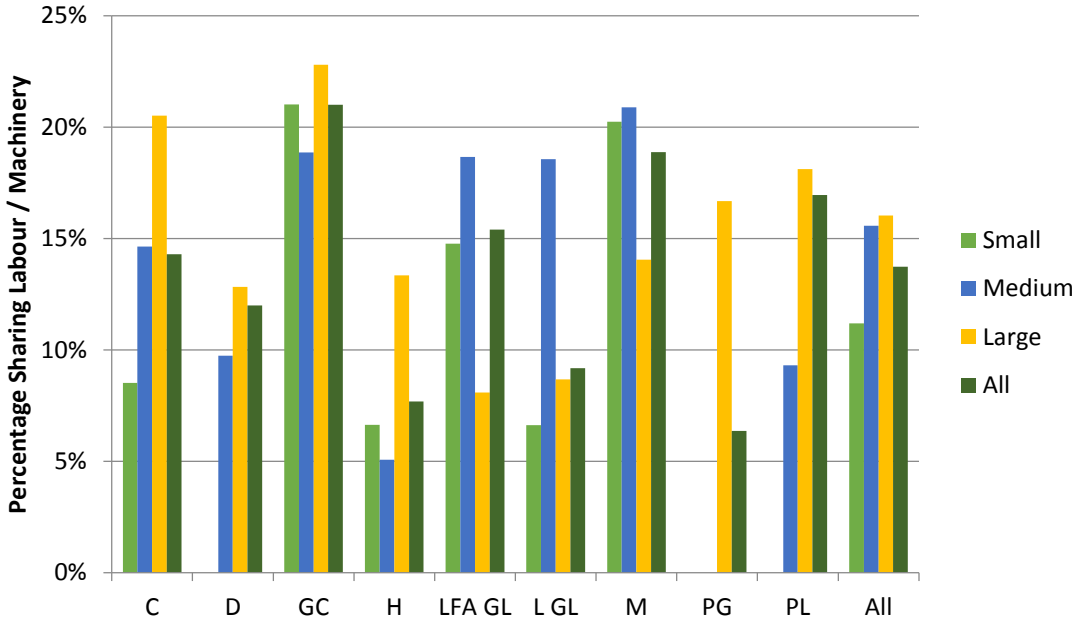
Figure 4.13 Relationship between the Age of the Farmer and the Likelihood of a Successor



Source: SW Farm Survey, 2016

A final insight into the lives of small farmers from the FBS is provided by evidence of the propensity to engage in labour or machinery sharing, which may offer one route to address some of the challenges of farming on a small scale. As Figure 4.14 illustrates, small farmers tend to be less likely to be involved in labour and/or machinery saving, although this does vary by farm type. Figure 4.15 shows the tendency of small farmers to be involved in labour and /or machinery sharing declines with declining farm business performance.

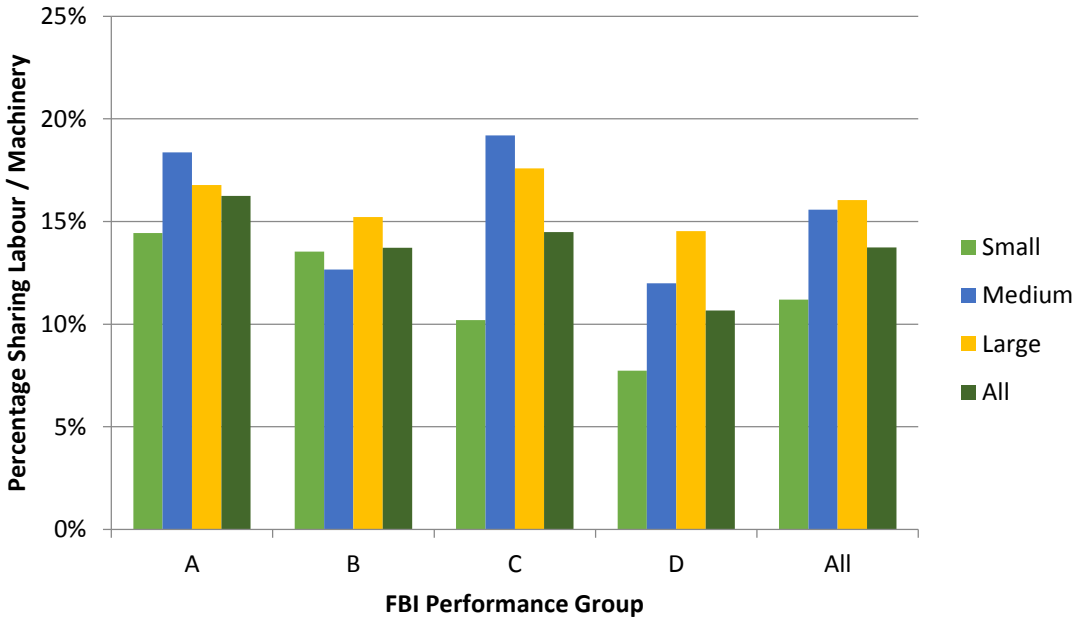
Figure 4.14 Labour and or Machinery Sharing (percentage), by Farm Type and Farm Size



Key to farm types:
C=Cereals; D=Dairy; GC=General Cropping; H=Horticulture; LFA GL=Less Favoured Area Grazing Livestock; LGL=Lowland Grazing Livestock; M=Mixed; PG=Pigs; PL=Poultry.
Observations=2418. Note: data not Normally Distributed (Taylor Series approximation).

Source: Wilson, 2016

Figure 4.15: Labour and or Machinery Sharing (percentage), by FBI Performance Group and Farm Size



Observations=2418. Wald Test: F=1.45; p-value=0.145.

Source: Wilson, 2016

4.3 Discussion

The combination of FBS data and analysis of the SW Farm Survey provides valuable insights into the contemporary economics of small farms and points to the heterogeneity of the small farm sector. Wilson (2016: 46) states that "irrespective of farm size, profitable farm businesses are underpinned by a profitable agriculture cost centre. Moreover, these businesses typically also achieve greater levels of income from agri-environment, diversification and SFP sources. It is however important to note that successful farm businesses rely least, in percentage terms, on the SFP as a source of income." In order words, profitable and successful farm businesses are good at everything they do.

Small farms, in general, are associated with more modest FBI, why would we expect otherwise, but as we have seen this is often supplemented by other income from off the farm (both earned and transfer payments) and small farms are associated with a favourable return on capital. This, combined with an equally favourable debt to asset ratio, suggests that there is a platform from which to maintain a sustainable business or expand. Of course, not all operators of small farms will wish to expand. The heterogeneity apparent throughout the analysis presented here reflects a range of different types of small farm ranging from what may be considered 'main living' small farms through to 'lifestyle' and 'retirement' holdings[12]. Some, with little or no low debt and owning their own land, may be content to 'absorb' adverse changes in the economics of agriculture by adopting an ever more frugal lifestyle or supplementing with income from elsewhere (see Lobley *et al,* 2005 for a discussion of 'absorbers').

Other small farmers need to make changes to their production and/or business practices in order to improve the current generally unfavourable output-input ratio. One way of doing this is to take control of the supply chain by selling direct to the consumer, which is a fairly common strategy on smaller and organic farms. The example of G and S Organics (Box 4.1) shows how even on a very small scale it is possible to make a reasonable net income and create employment. The second example (Box 4.2) is of a conventional (i.e. not organic) fruit producer successfully operating a small farm post succession. The fruit and hops farm is what was retained from a larger family farm when it was passed on to the son, who now sprays and harvests the crops on the 20 ha farm on a contract basis. Again, despite operating on a small scale the farm generates an acceptable net income.

Box 4.1: Micro Scale, Diversified Organic Farm Selling Direct to the Consumer

G and S Organics is a 12 ha livestock farm in Northumberland producing organic meat and eggs. Produce is sold via a box scheme, marketed on a website (http://www.gandsorganics.com/).
Beef (8 animals sold per year)
Lamb (23 animals sold per year)
Pork (23 animals sold per year)
60-100 Christmas Turkeys/year
50 laying hens
20 laying ducks (100 eggs/duck)

The farm employs 3.4 full time equivalent workers, including family who own the business and a part-time employee. Gross annual income £92k. Net income £26k.

As well as selling meat via a box scheme, the farm also offers wild camping weekends, and "Farm Focus Dinners" when guests can visit the farm, maybe see a butchery demonstration and then eat dinner in the barn.

[12] It is useful to note that *within* the USDA's definition of Small Family Farms (gross sales less than $250,000) the following distinct types are recognised: Retirement farms; Residential/lifestyle farms; Farming-occupation farms; Low-sales farms and High-sales farms.

Box 4.2 Cider Apple and Hop Production on a 20 ha Traditional Family Farm (Herefordshire)

The farm has been established for eighty years, and the couple now running it in have had it for 51 years. They decided to specialise in order to increase the viability of their portion of the farm, and are now generating a mean net income of £26,500 per year from growing 6 tonnes of hops and 350 tonnes of cider apples. They are gradually grubbing-up some of the less economic varieties of hops and replanting with better ones, so hop returns are slightly lower, while the cider apples are reaching their potential.

Turnover ranges from £50,000 to £70,000 per year, with costs of around £30,000. The apples and hops are sold via three local co-operatives. Labour is carried out by the family, providing year round work for one full-time equivalent plus seasonal harvesting work for another. Specialising in their two most profitable crops, and investing in them has resulted in a considerable increase in productivity in recent years.

In addition to various strategies for capturing a greater share of the value of a farm's output, the FBS analysis identified the potential gains in small farm competitiveness that could be achieved through building on what are currently low levels of labour and /or machinery sharing.

Finally, as Wilson (2016: 36) states, "characteristics of farm succession arguably represents one of the largest risks for the future viability of family farms", although he goes on to note that the most profitable farms are the most likely to have a successor, regardless of farm size. As discussed above, the relationship between succession and farm size, and indeed business performance, is complex. To an extent the lack of a successor on some small farms should not be seen as a problem. Those that are effectively retirement holdings of one variety or another should not be expected to attract a familial successor. Whether they might ultimately offer an opportunity for a new entrant is another matter. More problematic are the small farms where there is a desire for intergenerational succession within the family but where the business cannot support an additional salary during the transitional stage (which may take years). If they are unable to grow or improve their output-input ratio or alter their business model so that they capture a greater proportion of the end value of their produce or develop new income streams, these are the farms that are intergenerationally vulnerable.

5. Improving the Prospects and Resilience of the Small Farm

But in the past decade or so, my father and I have deliberately made our farming system more traditional and old-fashioned, returning to a system with minimal external inputs and expenditure, because it helps us escape from the spiralling costs that are killing small farms like ours. And because we have slowly learnt that the traditional ways still work. (Rebanks, 2015)

Farmers have lost bargaining power in developed countries as economic weight has concentrated massively both upstream of the farmer and downstream towards the consumer. The most powerful agents have become the seed and chemical and multinationals on the one hand, and the big private dealers and major supermarket chains on the other. (Brookfield and Parsons, 2007)

After working first as a land agent then as an agricultural consultant ... a long rumbling frustration finally got the better of me and in 2003 I purchased 50 sheep with a balance transfer from my credit card. …. By 2010 I had 650 females and the credit card was paid off (albeit temporarily). Yet after 8 years I am still wholly reliant on seasonal lets. I have tried for seven "proper" tenancies and failed each time. Although I seem to make decent profits, cash is still incredibly tight and sometimes (admittedly, rarely) I question whether I should really do something more lucrative. (Blanche, 2011)

Beyond the immediate crisis lies the larger problem of weaving a tapestry of public policies that could nourish family farming, care for natural resources and provide for food security. (Strange, 1988)

A more resilient agriculture will need to be persistent, adaptive, and transformative, each at the appropriate moment in time and at the appropriate place. (Bennett *et al*, 2014)

5.1 Introduction

In this final chapter we explore the prospects for the survival of the small family farm and produce some concluding thoughts. We identify broad areas for action, and make recommendations drawn from the evidence we have received and the reading we have undertaken during the course of this research project. In some cases the development of more detailed and specific recommendations will require the input of specialist working groups in order to take our thinking further, especially in areas that have been beyond the resourcing and timeframe of this research.

The quotations we have selected for the start of this chapter seek to encapsulate the sets of issues that we consider in this concluding chapter. The quote from James Rebanks' acclaimed account of farming in the Lake District points to the question of improving *farm management and performance*. Whilst the answer might not always be the return to tradition suggested by Rebanks in a specifically uplands context there is a truth in this quote that is universal - the need for careful and planned farm management. This is likely to mean close attention to costs, to productivity, and to markets. So our first area for recommendations is farm management.

The second quotation shifts the question away from the immediate farm environment to the *supply chain*. It is widely accepted that many, indeed most, farmers are price takers as opposed to price makers and that this weak market position applies both to the inputs that farmers need in order to farm and the markets for commodities that they sell into. However much James Rebanks, and others like him, seek to cut costs, some external inputs are unavoidable, and all farmers are dependent on commodity markets for their products, markets that are heavily influenced by global

trends, the policies and practices of big food retailers and shifts in consumer demand. Are there changes in the operation of supply chains that might help small family farmers?

These first two areas for exploring possible changes are very much focussed around existing mainstream farmers, although some of the suggested changes, particularly with regard to supply chains, take us into more alternative territory. But this is still about farmers who may have been farming for many years and, as is well known, agriculture is an industry characterised by longevity of occupation with many farmers occupying land that has been in the family for several generations. This is one of the great strengths of agriculture and certainly is one of the factors that contributes to farming's role in communities and landscapes. Continuity, in this highly fluid and mobile age, counts for a great deal and many family farmers are deeply embedded in their local communities. However, most would agree that there is also a need for *new blood* and this brings us to the third quotation. Michael Blanche, in a Nuffield Farming Scholarship report, examines from first-hand experience the trials and tribulations of starting out in farming and the quotation refers to one of the toughest challenges of all – access to land. But as he points out it is not the only challenge facing new entrants. His report is entitled *The Farming Ladder* in homage to George Henderson, himself a new entrant in the inter-war years: "This report will try to doff its cap to George Henderson's holistic approach to the farming ladder. Progression – from little to a lot – in all its forms, which includes land and assistance but also, more importantly, traits the individual has within his or her control." (Blanche: 6). Indeed for Henderson, in the very different economic climate of the 1920s, access to land was easier than many of the other requirements for successful farming such as capital, labour and know-how. So our section on new blood, whilst primarily about land, refers to other issues as well, and there is inevitable cross-over with the first section on management and performance.

Finally we turn to *the question of resilience*. Marty Strange was writing in the United States in the 1980s and yet his words have a familiar ring. His lifelong advocacy of the family farm and its role in natural resource management provides the springboard for the final section. As our final opening quotation indicates, resilient farming requires persistence, adaptation and transformation.

5.2 Farm Management and Performance

A persistent and long-standing characteristic of agriculture is the contrasting level of performance in the industry. It has challenged and troubled generations of farm business economists and agricultural advisors many of whom – especially in the post-war decades, prior to the withdrawal of so much state funding from agricultural advisory and research programmes in the 1980s – devoted life-times of public service to this issue. Of course, there is tension here between personal freedom and the wider public need. It is tempting to see all poor economic performance as a problem, and in many cases as is well known to farming help charities, such as the Farming Community Network, it is just that, especially when there is a sudden downturn in levels of profitability across the industry as a whole, as in the last two years. But in more 'normal' times some farmers may choose not to maximise financial returns for lifestyle or other reasons. That well-known bottom quartile of low performers may contain a wide range of farmers only some of whom are prepared, able or wishing to seek ways of improvement. During periods of national emergency, such as in the 1939-45 war and for several years afterwards, the personal freedom of farmers to farm in whatever way they wished was seriously compromised by the wider public need for greater food production; supervision orders and even evictions could be imposed upon uncooperative farmers (Short, 2014). Few would suggest we return to those kinds of measures, though some might argue that the challenge of feeding the world in the context of climate change and resource depletion and population growth (Conway, 2012) is potentially every bit as severe a test to modern agriculture as the conflicts of seventy years ago. If the stick is to be left in the cupboard we would be well to remember how the war and the

years that followed saw an improvement in agricultural performance built around the confidence that secure and buoyant markets and high public esteem gave to farmers. The carrots for these farmers were high and guaranteed prices, free advice to improve technical and economic efficiency, and a sense of playing their part in a national effort. Whilst little of this can be directly transferred to contemporary circumstances, the core of what happened then is transferable, namely an emphasis on good farming. Those small farmers who perform well, which we identified in Chapter 4, certainly share one characteristic of good farming: high economic performance. And whilst good economic performance is not always and necessarily associated with other aspects of good farming such as environmental outcomes and social responsibility, we would argue that in contemporary agriculture these things very often do go together (Carruthers *et al*, 2013).

So what are the characteristics of contemporary high performing farmers that might prompt us to consider appropriate areas for recommendation? Paul Wilson (2014) conducted in-depth interviews with 24 'high' or 'improved' English farmers (not necessarily small farmers). He found they largely shared a range of characteristics. To summarise, these farmers:

- Typically hold agricultural qualifications.
- Draw upon a range of information sources.
- Recognise and draw upon farm-specific advantages.
- Have low business debt.
- Keep up to date with new industry developments.
- Use a range of marketing channels.
- Seek to maximise profit within the wider context of farm and family objectives.
- Focus upon cost control.
- Pay attention to detail.
- Seek product quality and high yields but within the context of enterprise margins.
- Have succession planning in place.

Many lessons can be learned from this set of characteristics but perhaps the most important is the wide range of *different* life-skills and aptitudes that are required. A successful farmer has to have business acumen in terms of financial management (attention to costs and margins) as well as technical knowledge and know-how (agronomy, husbandry, mechanical skills), market knowledge, and social/emotional/familial intelligence and awareness. The agricultural industry has discussed for some time now the need to stimulate and facilitate the up-skilling of its members (not just limited to farmers), a theme that also emerged in our interviews for this research. One idea subject to much discussion is that of the Chartered Agriculturalist (C.Agric). While not necessarily a 'licence to farm', conferral of C.Agric would be formal recognition of a level of professional competency, skills and knowledge against a set of criteria. Chartered Agriculturalists would also be required to demonstrate continuing improvement in skills, knowledge and education to maintain the title. There is absolutely no reason why this idea should be confined to larger farm businesses. It could help equip existing small farmers with some of the skills and competencies identified by Wilson's 2014 analysis and it could be a qualification that enhances the opportunities for aspiring new entrants, demonstrating that they have the practical farming and business skills necessary for success. Chartered Agriculturalist status does not yet exist. There is widespread industry support, but further financial support is required to complete the development process of this potentially transformative approach. Once up and running, it is anticipated that the initiative would be self-funding.

Box 5.1 shows a set of questions devised and circulated among the dairy sector following a presentation at an Agrihive event in 2015. They form a good basis for starting discussions with dairy farmers on their strategy to survive periods of low milk prices and could be adapted and be relevant for other farming sectors.

Farmer Recommendation. Adopt lifelong learning through regularly accessing advice, support and information to help inform business decisions.

Farmer Recommendation. Develop good management and technical skills to assist with the effective day to day management of a successful farm business.

Farmer Recommendation. Develop and implement a plan for succession and/or retirement from farming.

Box 5.1 Key Questions for Dairy Farmers in Challenging Times

1. Have you the mind-set to take control of your own destiny? Or do you feel bewildered and a hopeless victim of circumstances?
2. Is dairy farming right for you and your family? What are your plans for inheritance? Are you doing the right thing for your non-farming family members?
3. What will you need to invest in your facilities in the next 10 years? How will you fund it and justify it?
4. Do you REALLY know your cost of production?
5. What is the realistic future milk price? Are you looking at the evidence or living on hope?
6. Have you worked out whether you are producing what your milk purchaser really wants? i.e. Are you maximising your return under your milk contract?
7. What are you really paying yourself per hour? What can you afford to pay yourself and remain competitive? Would you be better off paying someone else and trying to add value to other parts of the business? What are your other skills? How much could you earn off farm part-time or full-time?
8. Might there be a day when you will find yourself stranded without a milk purchaser at all?
9. Are you buying all your inputs at best prices, and when did you last check alternatives?
10. Are you ruthlessly and honestly benchmarking your performance and constantly trying to identify ways to incrementally improve performance?
11. Have you got your eyes open for niche opportunities even if they start small?
12. Do you have the right skills for the technologically and market driven global dairy industry of the future?

If all this seems to be a tall order for a hard pressed farming sector, we need to remember that these are the attributes to run only a successful *farm* business. McElwee (2008) has produced a taxonomy of farmers that delineates the ways that farmers can be viewed as entrepreneurial in the context of

the various avenues of non-farming diversification they may also pursue. He distinguishes between four entrepreneurial paths a farmer may follow, highlighting different ways of being 'a farmer' and the possibilities and constraints on entrepreneurship in all cases:

- Farmer as farmer (engaged in traditional land-based economic activity).
- Farmer as entrepreneur (innovative, opportunity-orientated combined with changing, flexible and diverse economic activities).
- Farmer as contractor (owning specific skills/expertise and experience coupled with possible ownership of 'plant').
- Rural entrepreneur (ownership of farm, land or business).

Farmer Recommendation. Collaborate with other farmers and supply chain partners, including developing local networks, peer support relationships and business opportunities.

Farmer Recommendation. If appropriate, and after full market research and business advice, introduce new enterprises to diversify farm business income.

Box 5.2 Successful Diversification: Staffordshire Savoury Eggs

Colin and Deb Hodgkinson took on their 26-acre small holding in 1999 with the aim of growing a business that could support them both so they could leave their current employment. Although they tried a range of ways to achieve this it was not until they hit on the idea of producing and selling scotch eggs at the local farmers' market that their aspirations looked as though they might be fulfilled.

The savoury eggs proved very popular from day one and soon orders were exceeding the number of eggs that the farm's hens could lay so they sourced free range eggs from local farm businesses. Staffordshire Savoury Eggs has continued to grow its range of premium scotch eggs for sale at local farmers' markets and also through a local supermarket chain. The product range has also been expanded into smoked and cured pork meat. As well as now providing enough income to support both Colin and Deb they have employed four members of staff and purchase products from 11 local food and farming businesses.

This new enterprise has also supported a number of on-farm developments that needed costly investments such as repairs to buildings and replacement of fencing.

Box 5.3 Adding Value through Collaboration: Herdwick Project

In a bid to address low farming incomes in Cumbria the Herdwick Sheep Breeders' Association and Cumbia developed a partnership to increase the potential profit from Herdwick sheep by raising its profile, encouraging trade links and highlighting the value of upland farming.
In the past three years the project has carved out a viable and future market for Herdwick meat which will go some way to securing a more promising future for the hill farmers involved. The first undertaking was to achieve Protected Designation of Origin status (PDO) for the 'Lakeland Herdwick' meat, which marks it as exceptional and helps producers obtain a premium price for their authentic products.

The product has been extensively marketed with its own branding and can now be found in restaurants and supermarkets in Cumbria and further afield. Michelin starred chefs such as Simon Rogan, Angela Hartnett and Marcus Wareing are all showcasing Herdwick on their menus. Herdwick is also being sold at London's famous Borough Market. One of the Fund's supporting companies Booths also sells Herdwick lamb and mutton in all of its 30 stores.
In real terms for the farmers involved they receive an extra premium of between £15-20 per lamb above the market price, with the added benefit of not paying auction fees which is an additional £5 per lamb giving their farm the security and the assurance of a premium price for its lambs.

Box 5.4 Peer Support – Exmoor Hill Farming Network

A family moved to Exmoor 13 years ago and bought a farmhouse with 30 acres near Wheddon Cross. In addition to a caravan business they tried a range of ways to improve the viability of their business including pigs and a small flock of 50 sheep but with little success. With advice from local people they have now invested in a small flock of pedigree Exmoor Horn sheep, two horses, assorted poultry, a few milking goats and annually raise 30 beef calves. To improve their business they have sought advice from a range of sources including network events, vets and feed merchants etc.

It was their experiences that led them to encourage the Exmoor Hill Farming Network to set up a micro farmers peer support group. The micro farming group has brought several benefits to the family – the importance of communication with others doing similar things, sharing and learning with a supportive group, subsidised training (e.g. hearing a professional grassland expert) and confidence to approach the 'experts' for advice. As a result of their learning and putting it into practice they are making a profit having doubled the productivity of their 30 acres and improved their pasture management through rotational grazing.

There is a need for more understanding and analysis as to why some farmers are so much more successful than others, as discussed in detail in Chapter 4. The data are largely associational. In other words we know the farmer characteristics that are *associated* with good performance but we know far less about the causal mechanisms or how these various variables interact with each other.

> ***Sector Recommendation. The formation of a task force to carry out further examination of variable performance in agriculture with the aim of providing further evidence on the causes of variable farm business performance and the factors that help improve performance.***

How then might high performance management be encouraged? Paul Wilson in the conclusion to his paper considers the context of 'sustainable intensification' (see Gunton *et al,* 2016) which he sees as "grand policy challenges and ones that are potentially much more complex than observed in agricultural history to date". He also suggests that underlying the attributes he has identified as necessary for successful business outcomes are the drivers that prompt farmers. The challenge he says for policy makers "is how to understand and respond to these multi-objective drivers and communicate with farmers in order to generate multi-output objectives".

For a different example, we turn to the Netherlands, a country that has long managed to combine a tradition of small family faming with progressive and productive agriculture, but there are pressures of concentration that apply there too. Van der Ploeg (2000) examined the Frisian dairy sector and identified a style of what he terms 'farming economically' that emerged as a powerful small farmers' response to "the dominant modernisation project that has overwhelmed their industry" and became one of the building blocks of new rural development processes:

> "Farming economically or economical farming is basically a strategy to contain monetary costs as far as investments and loans and expenditure on external inputs are concerned. Farming economically, therefore, can be equated with 'low-external-input agriculture.' Central to this farming style is also the mobilisation, use, development and reproduction of internal resources.
>
> Today, farming economically seems to have become the dominant style. It provides farming families with a way of countering the increasingly threatening situation of limited quotas, decreasing prices, the high cost of land and quota, and the obligation to farm in a more environmentally sound way. Farming economically, therefore, for farm families is a significant alternative to an accelerated increase in scale." Van der Ploeg (2000)

Van der Ploeg examines this model in some detail, demonstrating how small farmers in the Dutch/Frisian context can out-perform their larger and more modernised competitors. Are there lessons to be learned in a British context? And if so, could such thinking be fed into the advisory services for British farmers?

Since the demise in the 1980s of a national advisory service (ADAS) free to farmers at the point of delivery, there have been numerous bespoke initiatives to provide advice to farmers. The so-called Agricultural Knowledge and Information System Network or AKIS (Prager and Thomson, 2014) is different in and within each of the four countries of the UK and, taken as a whole, is characterised by its ad hoc and diffuse nature. There are separate initiatives for conservation advice and for pollution advice, usually publicly funded; agronomy and technology advice usually comes from the private sector. There have been publicly funded initiatives around farm business management advice and numerous consultants offer similar services. Reports and papers lamenting the lack of co-ordination and inconsistences abound and have done for many years (Curry *et al,* 2012; Winter *et al*, 1995; Winter *et al,* 2000) although Garforth *et al* (2003) defend the creativity inherent in its diversity. Recently Defra (2013), reviewing environmental advice provision in England, report "a lack of

coherence between activities, as well as the absence of a shared view of 'the customer' both at national and local levels all account for the observed inefficiencies and duplication that consequently impacts on its effectiveness". And in Scotland, a report by the Rural Advisory Service Working Group (2012) detailed the strengths and weaknesses of the advisory services provided in Scotland concluding as follows:

> "There is too little advice and it is too fragmented. There are not enough trained advisors and specialist/technical advisors. Silo advice tended to be given on such things as nutrition and renewables. 20% of farmers are perceived to be in greatest need of advice but they are the group who do not access advice. The demise of the Farming Wildlife Advisory Group is perceived as a loss. There are not enough skills providers. There is no real 'advisory service' in forestry as this sort of service tends to be covered by a combination of engagement with FCS and forestry companies/ woodland NGOs. There is a risk of one dominant player establishing a monopolistic competitive advantage and a resultant potential loss of trust. Public and private sector advice should be more joined up, with better cohesion and integration." Rural Advisory Service Working Group (2012)

What is clear from this quick overview is that the kind of integrated and wide-ranging advice and business support that is needed to address performance issues is not readily available. Coordination and targeting is vital. Succession planning may be more important than agronomy or vice versa depending on circumstances. The ability to determine this and act accordingly requires advisors and other knowledge brokers to abandon their professional silos. Whilst in the current financial climate there is little prospect of fresh public sector funding to address this problem and certainly not to re-create a national advisory service there is more that could be done to address the need for co-ordination. A starting point would be for the various professional bodies (e.g. Royal Institution of Chartered Surveyors, British Institute of Agricultural Consultants, Chartered Institute of Ecology and Environmental Management, Institute of Agricultural Management, Central Association of Agricultural Valuers) to work more closely together to seek to secure common standards and cross-referencing of clientele. This almost certainly needs government encouragement.

> ***Sector Recommendation. Develop a concordat between the various professional bodies who give advice to famers with a view to developing a common protocol for cross-referral and communication strategy about the range of advice and support available.***

Inman (2011) recommended an affiliation of providers citing an earlier recommendation by one of the authors of this report:

> "It is recommended the Affiliated Regional Advisory Training Service model (Winter, 1996) originally proposed in the 1990s is reviewed by Defra as a possible framework for delivery of integrated advice and training of advisors."

Whilst this model is unlikely to be a realistic proposition in the current funding climate we feel that the need for some form of co-ordination through a 'guidance' service remains strong. Farmers need to know where to turn for an initial conversation about where to seek the most appropriate advice. Rather than the static notion of a 'signpost' we suggest the more interactive idea of 'the catalyst', individuals capable of catalysing change towards more resilient farming which may indeed include signposting to sources of information but will also involve two-way social interaction. We believe catalysts already exist in many farming areas through people who provide advice with a high degree of sensitivity and insight. Many are volunteers with the farming help charities but there may be others located in agricultural colleges, public or private sector advisory providers and in churches.

Sector Recommendation. The Farming Help Charities in conjunction with The Prince's Countryside Fund and other helping agencies should identify and equip individuals within farming areas to act as 'catalysts', guiding farmers to the information and support they need and assisting them in this process.

But the concerns of this section should not be addressed solely by focusing on the providers of advice and information as though somehow the solution is solely external to the farm. Farmers themselves are also very much part of this picture and have their own role to play in progressing performance. As became clear in an interview with a representative of one of the farming help charities, issues of loneliness and isolation are a problem in some farming areas and these problems can be exacerbated when financial circumstances are particularly bad. In strong communities farmer to farmer emotional support may well happen automatically in these circumstances and will be a precursor to business change, but this is not always the case.

Sector Recommendation. Catalysts should be encouraged to establish a 'good farming neighbours' system to allow farmer to farmer peer group support, learning from other mentoring schemes.

5.3 The Supply Chain

This study has not focused on supply chain issues but it is clear from the evidence we have received and in the wider literature that the farmers' relative weakness in the supply chain is a fundamental and continuing problem. Small farmers are by definition in the weakest position of all. Small quantities of inputs cost more per unit than when bought in bulk. Buyers may be less interested in small quantities. In milk, for example, the demise of the Milk Marketing Board inevitably led to a reversal in the market strength of farmers, moving in twenty years from guaranteed prices across the board to the variation in prices and contracts that confronts producers today with small producers often the hardest hit. There is no one set of answers applicable to all small farmers.

Shortening the food chain through direct retail, including participation in alternative food networks clearly offers a pathway for some farmers. Organic, local, high quality, premium specialty foods – all differentiated from the offerings of mainstream food manufacturers and retailers – have generated huge academic interest (e.g. a good summary of this interest is provided in Goodman *et al*, 2014) but have touched a relatively small proportion of farmers. There is scope for more development in this area including moves to consider options beyond the norms of farmers' markets and direct retail.

Another way in which small farmers can strengthen their position is through collaboration and cooperation, for both buying and selling. This can help achieve some of the benefits of scale and enable farmers to retain a greater proportion of the end price for their produce. Recent evidence from the Defra-funded Sustainable Intensification Platform indicates that cooperation among farmers in a variety of forms is higher than is often thought, challenging "the stereotype often perpetuated by farmers themselves … that British farmers are staunchly independent actors who are disinterested in collaborating" (Morris *et al,* 2016). Small farmers however, were found be to less likely to be involved in cooperating with other farmers. Anecdotal evidence suggests that such farms are often 'too busy' operating their farm to have the time to take part in cooperatives. However, Wilson's (2016) analysis of FBS data suggest that small farmers work fewer hours than their large counterparts. Further investigation is required to explore how to better facilitate collaboration in the small farm sector.

The benefits of shortened supply chains have by-passed many small family farmers. There are two reasons for this. First, the necessary investment of capital and time investment have often been beyond the means of the smaller farmer. Secondly, the policy focus in developing these has often been on *consumers* and on wider *environmental* issues focussing on issues such as health, food miles, and organic or ecological agriculture. There is a need to give greater emphasis to farmers within local food movements with a particular focus on traditional family farmers. Rural development leaders need to consider how best to engage and empower small farmers within local food initiatives.

> ***Policy Recommendation. Promoters of Short Supply Chains and added value (such as social enterprises, local authorities and rural development schemes) should make engagement with small family farmers a strategic priority.***

5.4 New Blood

In this section we turn our attention to the next generation of farmers. With land prices high and relatively limited amounts of land appearing on the market for sale or rent each year, the tendency for existing larger farms or even large non-farming interests to buy or rent land when it comes available, means there are few opportunities for new entrants. This is not an issue confined to the UK. At a plenary session in January 2015 the European Economic and Social Committee examined "land grabbing, including land concentration, in Europe and around the world" and identified it as a threat to family farms (ESC, 2015). To a country as steeped in free-market principles as the UK some of their conclusions are both striking and challenging:

> "Land is no ordinary commodity which can simply be manufactured in larger quantities. Given that the supply of land is finite, the usual market rules should not apply. Ownership of land and land use must be subject to greater regulation. In view of the distortions that have been observed, the EESC considers it necessary to develop a clear model for agricultural structures at both Member State and EU level, which will have implications for land use and land rights."

Some countries, such as Denmark, France, Switzerland and Sweden, have long-standing regulations on who can occupy agricultural land which are designed to maintain family farming and the social fabric of rural communities. Land transactions are monitored by regional land authorities (Sociétés d'Aménagement Foncier et d'Etablissement Rural, (SAFER)), charged with supporting farmers, especially young farmers and of ensuring transparent agricultural land markets. The UK has no such regulations in force (although the land reforms proposed by the Scottish government might be considered by some as a step away from an unfettered free market in land). In that context and with no expectation of land market regulation, we need to look at private initiatives to encourage responsible land transactions and reforms to the tax regime.

> ***Sector Recommendation. Rural estates should encourage the creation of opportunities for new farm businesses by investing in the provision of new housing for existing tenants to facilitate new entrants.***

> ***Sector Recommendation. Rural estates should be encouraged to take a lead in assisting new entrants through either FBTs or share farming arrangements.***

> ***Sector Recommendation. Rural estates should be encouraged to raise the minimum term for Farm Business Tenancies to 10 years to help strengthen farm businesses and encourage longer-term planning and investment with a view to policy change.***

Concerns have long been expressed regarding the interconnected issues of an ageing farm population, succession planning (or more often the lack of it) and access to land for new entrants. The long term trend of an ageing farm population is common amongst many OECD countries and is caused by a low rate of exit and equally low rate of entry. We have already seen how a combination of a deep personal commitment to agriculture and the operation of the tax system can conspire to make retirement an unattractive option for many farmers. Nevertheless, a thriving agricultural sector equipped to face the challenges outlined by Wilson (2014) requires renewal of the family farm system via familial intergenerational successor where an appropriate family successor (or successors) is available. This is an issue much talked about in agricultural circles and although recent years have seen an increase in awareness, research by Farmers' Weekly indicated that 60% of family farms do not have a succession plan[13]. Succession planning is a 'slow burn' and it is important that high levels of awareness are maintained and that farming families are encouraged to progress from being aware of the issues to being facilitated to develop a succession road map and then engage with professional services providers (e.g. accountants and solicitors) in order to develop an appropriate plan.

Where a familial successor is not available, or simply where a landowner wishes to offer an opportunity to a 'new entrant', then a matchmaking service such as that recently launched by the Fresh Start Land Enterprise Centre has much to offer. Such initiatives have long existed in the United States and there are other successful examples closer to home (such as the land mobility scheme in Ireland). The Fresh Start 'Land Partnerships Service' can help facilitate a variety of arrangements, including contract farming, licenses and profit of pasturage, share farming, partnerships, conventional tenancies and long-term lets. Ingram *et al*'s (2011) analysis of a previous matchmaking initiative in Cornwall points to "a deep rooted reluctance amongst participants in the initiative to enter formal long term joint ventures due to differing motivations, expectations, and concerns about their respective responsibilities in the working relationship and about the validity of the legal framework." The new initiative builds on this experience (and that from elsewhere) and has industry backing, although it must be recognised that matchmaking (and the all-important mentoring service also offered by Fresh Start) and succession planning require personal interaction over an extended period of time and need to be backed by long term funding in recognition of the time required to build relationships and gain the trust that will be so necessary for successful outcomes. It is likely that incoming would-be land-based entrepreneurs would be in a stronger position if they were also able to undertake the sort of professional certification process discussed above.

Farming families should be encouraged to see succession planning as an investment in the future of their business and family but like any investment, they will value some contribution towards the cost. In addition to such incentives, consideration could be given to making business loans conditional on succession planning (where appropriate). Initiatives such as the NFU Mutual's recently launched succession planning service are to be encouraged. However, it is vital that anyone engaged in offering succession planning advice understands that successful succession involves much more than the transfer of tangible assets. The transfer of intangible assets and delegation of managerial control are essential for successful succession, as is retirement planning. Succession is not simply a tax accounting and legal issue. It can involve complex psychology; changing roles within the business, family and community, and can test interpersonal relationships. As such, it requires advisors and facilitators who are aware of these issues and who can help families steer a clear course through the succession process.

In instances where farming families do not have a familial successor but there is a desire for the farm to continue to be owned by the family, share farming agreements can offer an entry route for undercapitalised new entrants. The CLA argue that "the adoption of share farming as a farm

[13] https://www.fwi.co.uk/succession-planning-research-results-2015/

business structure is eminently suited to many of the challenges the industry currently faces" (CLA, 2014). The CLA have clearly set out the benefits of such arrangements to landowners and operators and, in addition to providing a practical guide, have been one of a number of organisations informing the Fresh Start 'Land Partnerships Service'. Share farming is not suitable for everyone but we agree with the CLA that it can play an important role in bringing new blood into agriculture and endorse the recommendation of the Future of Farming Review (Fursdon, 2013) that "joint equity and flexible business sharing schemes should be encouraged to enable a gradual handover of businesses, particularly where there is no natural successor". In addition, there is a need to look carefully at the obstacles to change which may include the difficulty of securing a retirement property.

Policy Recommendation. Consideration should be given in planning policy to allow farmers of retirement age to build a retirement house when they agree to facilitate new entrants through FBTs, share farming or land purchase.

Policy Recommendation. Greater investment through rural development funding into farming entrance schemes such as Fresh Start Academies and the Fresh Start Land Enterprise matching service.

Another route for new entrants (which almost by definition tend to be smaller scale) is provided by FBTs although an evaluation by the University of Plymouth (Whitehead *et al,* 2002) suggested that new entrants felt unable to compete with established businesses in bidding for FBTs. The apparent short term nature of many FBTs has also been criticised and the Tenant Farmers' Association (TFA) is actively campaigning for the length of FBTs to be at least 10 years, suggesting a number of ways in which this might be facilitated such as including tax incentives and disincentives. Longer term FBTs would certainly provide additional security and more of an incentive to develop a business and offer routes to progression.

Policy Recommendation. Utilise a more flexible approach to encourage new entrants into farming through share farming arrangements and Farm Business Tenancies.

Policy Recommendation. Discussions should be held to establish what opportunities can be addressed through adjustments to tax reliefs currently available with the specific need to attract new entrants into farming.

Of course, successful new entrants require more than just land: capital is also important and policy makers should take capital needs into account in policy making and facilitate alternative legal business structures for family farms in which, for example, capital can be provided by non-family members. This can stimulate family farms to grow further in order to stay competitive and viable. It will help family farms to use the comparative advantage of their transaction costs, within a structure that limits the financial risks. (Calus and van Huylenbroeck, 2010).

Generally, we strongly endorse the recommendation from the Future of Farming Review (Fursdon, 2013) that "low numbers of retiring farmers can restrict opportunities and this is exacerbated by the CAP and the inheritance tax framework. We need coordinated action to help support farmers to plan for retirement and succession on both their own and on rented farms at an earlier age and modify the detailed application of Agricultural Property Relief which encourages them to farm until death". We would also stress the importance of facilitating a dignified withdrawal for elderly farmers and one which recognises the value of their contribution, knowledge and skills.

5.5 Conclusion: Towards Resilient Small Family Farms

Despite many decades of support, it cannot be assumed that the current model of direct income payments for farmers will continue indefinitely in its current form, especially now that the UK has voted to leave the EU. Some level of financial support to farmers is likely to be ongoing but it is not known if this would be a similar level of support to a similar number of recipients as currently.

However, what is known is that whatever the future directions for agricultural policy, commercial objectives and pressures are likely to remain at the forefront of farming as an occupation. The ability of farmers to respond to the changing market and policy incentives while achieving income objectives will remain paramount. Marty Strange (1988) writing about the family farm nearly thirty years ago in the context of the USA penned words that are remarkably relevant to today's policy context:

> "For those public values embedded in family farming to prevail, a consistent webbing of political reinforcement is needed in all areas of policy-making. In simplest terms, the policy objectives must be:
>
> - to encourage entry into farming
> - to protect competition by limiting its excesses
> - to redress inequities among farmers by favouring the have-nots
> - to guide technology and land-use decisions to protect the future common good."
>
> (Strange, 1988)

In a recent paper, Calus and van Huylenbroeck (2010) remind us that the key to the success of the *family* farm is the use of labour, largely the labour provided by the farmer and members of the farm family. This is a type of agricultural production adapted to the availability of labour, and when it is readily available, and of the right quality and ability, agricultural production will increase and businesses will prosper as long as the wider conditions of markets and policies permit. It is a system of agriculture that has flourished over many decades and in many places. It has done so because of that combination of family and enterprise that characterises all family businesses. The incentives to succeed are high and the levels of commitment shown can be inspiring. Calus and van Huylenbroeck (2010) remind us that labour as the fulcrum of the business means that most policies and interventions to support family farming must take this fully into account. Thus much of what has been discussed in this chapter ultimately revolves around this and finding new directions for family farmers to survive:

> "One direction might be the increase of off-farm labour in combination with a family farm system that maintains a high quantitative level of production with a limited amount of farm labour. Another direction is the enlargement of the on-farm activities in which the available labour is used to produce (non-)commodity products that are asked by the consumer (e.g. tourism, landscape). In a third direction, farming might be seen as a sustainable way of production: all available on-farm labour is used to produce high-quality products, including organic production. A combination of different ways might be appropriate in some cases." Calus and van Huylenbroeck (2010)

These are issues to do with economic and social resilience. But the wider issue of environmental resilience is equally important. As Bennett *et al* (2014) remind us "changes with the potential to undermine agricultural development are already underway. Climate change, an increasingly connected social and trade system, declines in pollinators, and increases in pests and diseases all create instabilities that can disrupt the ecosystem services provided by the agricultural landscape, including food production." In the UK, the impact of extreme weather events, in particular, has had

dramatic consequences for farmers in recent years. Building a resilient agriculture requires attention to economic, social and environmental drivers.

Finally, it is important to recognise that there is not necessarily a future for all small family farms. As we have seen, powerful economic forces are driving changes in farm size structures and there is a limit to which they can be resisted in the absence of fundamental change in global economic systems. This should not be seen as a problem. The term 'small family farm' is really just a shorthand way of describing a spectrum of potentially very different farming, business and family situations, ranging from retirement holdings, lifestyle farms, part time farms, main living farms and so on. This heterogeneity in the small farm sector is likely to be reflected in a range of different futures for different farms. It also means that some small farms may be more in need of assistance than others and that different approaches might be needed for different sub-sections of the small farm population.

5.6 Recommendations to secure a viable future for small family farms

Recommendations for farmers and farm businesses to become more resilient

1. Adopt lifelong learning through regularly accessing advice, support and information to help inform business decisions.

2. Develop good management and technical skills to assist with the effective day to day management of a successful farm business.

3. Develop and implement a plan for succession and/or retirement from farming.

4. Collaborate with other farmers and supply chain partners, including developing local networks, peer support relationships and business opportunities.

5. If appropriate, and after full market research and business advice, introduce new enterprises to diversify farm business income.

Recommendations for the agricultural sector to support small family farms

6. The formation of a task force to carry out further examination of variable performance in agriculture with the aim of providing further evidence on the causes of variable farm business performance and the factors that help improve performance.

7. Develop a concordat between the various professional bodies who give advice to famers with a view to developing a common protocol for cross-referral and communication strategy about the range of advice and support available.

8. The Farming Help Charities in conjunction with The Prince's Countryside Fund and other helping agencies should identify and equip individuals within farming areas to act as 'catalysts', guiding farmers to the information and support they need and assisting them in this process.

9. Catalysts should be encouraged to establish a 'good farming neighbours' system to allow farmer to farmer peer group support, learning from other mentoring schemes.

10. Rural estates should encourage the creation of opportunities for new farm businesses by investing in the provision of new housing for existing tenants to facilitate new entrants.

11. Rural estates should be encouraged to take a lead in assisting new entrants through either FBTs or share farming arrangements.

12. Rural estates should be encouraged to raise the minimum term for Farm Business Tenancies to 10 years to help strengthen farm businesses and encourage longer-term planning and investment with a view to policy change.

Recommendations for policy makers

13. Utilise a more flexible approach to encourage new entrants into farming through share farming arrangements and Farm Business Tenancies.

14. Consideration should be given in planning policy to allow farmers of retirement age to build a retirement house when they agree to facilitate new entrants through FBTs, share farming or land purchase.

15. Greater investment through rural development funding into farming entrance schemes such as Fresh Start Academies and the Fresh Start Land Enterprise matching service.

16. Discussions should be held to establish what opportunities can be addressed through adjustments to tax reliefs currently available with the specific need to attract new entrants into farming.

17. Promoters of Short Supply Chains and added value (such as social enterprises, local authorities and rural development schemes) should make engagement with small family farmers a strategic priority.

References

Akram-Lodhi, A. H. and Kay, C. (2010) *Peasants and Globalization,* London: Routledge.

Allanson, P. (1990) *The evolution of the size distribution of agricultural holdings*, Countryside Change Working Paper No. 11, Department of Agricultural Economics and Food Marketing, University of Newcastle upon Tyne.

Allanson, P. (1992) Farm size structure in England and Wales 1939-1989, *Journal of Agricultural Economics*, 43 (2), 137-48.

Andersons (2016) *The Cash Flow Crisis in Farming and its Implications for the Wider Rural Economy*, London: The Prince's Countryside Fund.

Appleby, M. (2004) *Norfolk Arable Land Management Initiative (NALMI),* Final Project Report, Countryside Agency.

Barnes, A. P. Willock, J. Toma, l. and Hall, C. (2011) Utilising a farmer typology to understand farmer behaviour towards water quality management: Nitrate Vulnerable Zones in Scotland, *Journal of Environmental Planning and Management,* 54**,** 477-494.

Barr, C. Bunce, R. Clarke, R. Fuller, R. Furse, M, Gillespie, M. Groom, G. Hallman, C. Hornung, M. Howard, D. and Ness, M. (1993) *Countryside Survey 1990, Main Report. CS 1990 Volume 2*, London; Department of the Environment.

Bennett, E. Carpenter, S. Gordon, L. Ramankutty, N. Balvanera, P. Campbell, B. Cramer, W. Foley, J. Folke, C. Karlberg, L. Liu, J. Lotze-Campen, H. Mueller, N. Peterson, G. Polasky, S. Rockström, J. Scholes, R. Spierenburg, M. (2014) Toward a more resilient agriculture, *Solutions*, 5, 65-75 www.thesolutionsjournal.com.node.237002

Berry, W. (1987) In defence of the family farm, in: Comstock, G. (ed.), *Is there a Moral Obligation to Save the Family Farm?* Ames: Iowa State Press.

Berry, W. (2002) *The Art of the Common Place*, Berkeley: Counterpoint.

Blanche, M. (2011) *The Farming Ladder*, Nuffield Farming Scholarship Report.

Bonanno, A. (1987) *Small Farms: Persistence with Legitimation,* Boulder, Colorado: Westview Press.

Bonnen, J. and Browne, W. (1989) Why is agricultural policy so difficult to reform? In: Kramer, C. (ed.) *The Political Economy of US Agriculture: Challenges for the 1990s.* Resources for the Future, Washington, 7-33.

Bowler, I. Clark, G. Crockett, A. Ilbery, B. and Shaw, A. (1996) The development of alternative farm enterprises: a study of family labour farms in the Northern Pennines of England, *Journal of Rural Studies,* 12**,** 285-295.

Britton, D. (1990) Recent changes and current trends, In Britton, D. (ed.) *Agriculture in Britain: Changing Pressures and Policies*, Wallingford: CAB International.

Britton, D. and Hill, B. (1975) *Size and Efficiency in Farming*, Farnborough: Saxon House.

Brookfield, H. and Parsons, H. (2007) *Family Farms: Survival and Prospects - a Worldwide Analysis,* Abingdon and New York, Routledge.

Brookfield, H. and Parsons, H. (2007) *Family Farms: Survival and Prospect*. London: Routledge.

Brown, J. (2000) Agricultural policy and the National Farmers' Union, In Wordie, J. R. (ed.) *Agriculture and Politics in England, 1815-1939,* Basingstoke: Macmillan.

Browne, W. Skees, J. Swanson, L. Thompson, P. and Unnevehr, L. (1992) *Sacred Cows and Hot Potatoes: Agrarian Myths in Agricultural Policy*, Boulder Colorado: Westview Press.

Bryden, J. Hawkins, E. Gilliatt, J. MacKinnon, N. Bell, C. (1992) *Farm Household Adjustment in Western Europe 1987-1991*, Final Report on structural change, pluriactivity and the use made of structures policies by farm households in the European Community. Nethy Bridge, Invernesshire: Arkleton Trust (Research) Ltd:

Bunce, R. and Howard, D. (1992) *Aggregation of ITE Land Classes for Great Britain into Broad Groups*, Merlewood: ITE.

Burton, R. J. F. and Walford, N. (2005) Multiple succession and land division on family farms in the South East of England: A counterbalance to agricultural concentration? *Journal of Rural Studies,* 21, 335-347.

Burton, R. Mansfield, L. Schwarz, G. Brown, K. and Convery, L. (2005) *Social Capital in Hill Farming,* Report for the Upland Centre, Macaulay Institute, Aberdeen.

Calus, M. and van Huylenbroeck, G. (2010) The persistence of family farming: a review of explanatory socio-economic and historical factors, *Journal of Comparative Family Studies,* 41**,** 639-660.

Carlin, T. and Crecink, J. (1979) Small farm definition and public policy, *American Journal of Agricultural Economics*, 61, 933-939.

Carruthers, P. Winter, M. and Evans, N. (2013) *Farming's Value to Society: Realising the Opportunity*, Report to Oxford Farming Conference.

Chiswell, H. M. (2014) The value of the 1941–1943 National Farm Survey as a method for engagement with farmers in contemporary research, *Area*, 46 (4), 426-434.

CLA (2014) an option for enterprising farmers: CLA's assessment of share farming. CLA: London.

Cleary, M. (2007) *Peasants, Politicians and Producers: The Organisation of Agriculture in France since 1918,* Cambridge: CUP.

Cloke, P. Goodwin, M. and Milbourne, P. (1998) Inside looking out: outside looking in: different experiences of cultural competence in rural lifestyles, in: Boyle, P. and Halfacree, K. (eds.) *Migration into Rural Areas.* Chichester: John Wiley and Sons.

Cochrane, W. W. (1958) *Farm Prices: Myth and Reality*: University of Minnesota Press.

Cochrane, W.W. (1979) *The Development of American Agriculture: A Historical Analysis*, University of Minnesota Press.

Conway, G. R. (2012) *One Billion Hungry: Can we Feed the World?* New York: Cornell University Press.

Cox, G. Lowe, P. and Winter, M. (1994) The origins and early development of the National Farmers' Union, *Agricultural History Review,* 39**,** 30-47.

Cragoe, M. and Readman, P. (2010) *The Land Question in Britain, 1750-1950,* Basingstoke: Palgrave.

Curry, N. Ingram, J. Kirwan, J. and Maye, D. (2012) Knowledge networks for sustainable agriculture in England, *Outlook on Agriculture*, 41, 243-248.

DEFRA (2011) Cereal farms: economic performance and links with environmental performance. *Agricultural change and environment observatory research report no. 25* [Online]. Available: http://webarchive.nationalarchives.gov.uk/20130315143000/http:/www.defra.gov.uk/statistics/files/defra-stats-foodfarm-environ-obs-research-arable-cereals-110505.pdf.

DEFRA (2013) *Review of Environmental Advice, Incentives and Partnership Approaches for the Farming Sector in England*. Evaluation of selected advice and incentives schemes, London: Defra.

DEFRA (2014) *Farm Classification in the United Kingdom*, Available: https://www.gov.uk/.../fbs-uk-farmclassification-2014-21oct14.pdf

DEFRA (2015) *Structure of the agricultural industry in England and the UK at* June (county/unitary authority dataset) [Online]. Available: https://www.gov.uk/government/statistical-data-sets/structure-of-the-agricultural-industry-in-england-and-the-uk-at-june

Denman, D. (1981) The smallfarmer as the bastion of independence and social liberty, in: Tranter, R (ed.) *Smallfarming and the Nation*, Centre for Agricultural Strategy Paper 9, CAS, Reading pp9-16.

Dewey, C. J. (1974) The rehabilitation of the peasant proprietor in Nineteenth-Century economic thought, *History of Political Economy,* 6**,** 17-47.

Ernle, Lord. (1912) *English Farming Past and Present*, London: Heinemann.

European Economic and Social Committee (2015) *Land grabbing – a warning for Europe and a threat to family farming (own-initiative opinion),* NAT/632, Brussels.

ESC (2015) *Land Grabbing – A Warning for Europe and a Threat to Family Farming*, Opinion of the European Economic and Social Committee.

Eurostat (2015) http://ec.europa.eu/eurostat/web/agriculture/data/database?p_p_id=NavTreeportletprod_WAR_NavTreeportletprod_INSTANCE_ff6jlD0oti4U&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-2&p_p_col_pos=1&p_p_col_count=2

Fennell, R. (1987) *The Common Agricultural Policy of the European Community: The Institutions and Administrative Organisation*. Oxford: BSP.

Flynn, A. Lowe, P. and Winter, M. (1996) The political power of farmers: an English perspective, *Rural History,* 7**,** 15-32.

Fursdon, D. (2013) Foreword to *Future of Farming Review*, London: Defra.

Garforth, C. Angell, B. Archer, J. Green, K. (2003) Fragmentation or creative diversity? Options in the provision of land management advisory services, *Land Use Policy*, 20, 323-333.

Gasson, R. (1988) *The Economics of Part-time Farming,* Essex: Longman Scientific and Technical.

Gasson, R. Crow, G. Errington, A. Hutson, J. Marsden, T. and Winter, D. M. (1988). The farm as a family business: a review, *Journal of Agricultural Economics,* 39, 1-41.

Gasson, R. and Errington, A. (1993) *The Farm Family Business,* Oxford: CAB International.

Goodman, D. Dupuis, E. M. and Goodman, M. K. (2014) *Alternative Food Networks*, London: Routledge.

Gosling, P. (2015) *On the Eve of Destruction: The Case for Stormont Intervention to Save Northern Ireland's Farming Industry,* Report commissioned by Farmers For Action NI and the Northern Ireland Agricultural Producers Association.

Grigg, D. (1989) *English Agriculture: An Historical Perspective,* Oxford: Basil Blackwell.

Gunton, R. Firbank, L. Inman, A. and Winter, M. (2016) How scalable is sustainable intensification?, *Nature Plants*, 2 (May).

Hayes-Conroy, A. (2007) *Reconnecting Lives to the Land,* Madison, New Jersey: Fairleigh Dickinson University Press.

Heffernan, W. and Green, G. (1986) Farm size and soil loss: prospects for a sustainable agriculture, *Rural Sociology,* 51**,** 31-42.

Henderson, G. (1944) *The Farming Ladder*, London: Faber & Faber.

Hetherington, P. (2015) Britain's farmland has become a tax haven. Who dares reform it? http://www.theguardian.com/society/2015/sep/02/britain-farmland-tax-haven-reform

Hine, R. C. and Houston, A. M. (1973) *Government and Structural Change in Agriculture*, Joint Report by Universities of Nottingham and Exeter.

Hoggart, K. Buller, H. and Black, R. (1995) *Rural Europe: Identity and Change,* London: Arnold.

Holden, P. (2015) If our small farms are allowed to wither, the whole nation will suffer. Available: http://www.theguardian.com/commentisfree/2015/aug/09/lose-small-farms-britains-heritage-gone

Ilbery, B. W. (1991) Farm diversification as an adjustment strategy on the urban fringe of the West Midlands, *Journal of Rural Studies,* 7**,** 207-218.

Inman, A. (2011) *A Review of Current Policy Tools and Funding Mechanisms Available to Address Water Pollution from Agriculture in England*, Report to Defra.

Ingram, J. (2008) Are farmers in England equipped to meet the knowledge challenge of sustainable soil management? An analysis of farmer and advisor views, *Journal of Environmental Management,* 86**,** 214-228.

Ingram, J. and Kirwan, J. (2011) Matching new entrants and retiring farmers through farm joint ventures: insights from the Fresh Start Initiative in Cornwall, UK, *Land Use Policy,* 28, 917-927.

Keith, W. (1975) *The Rural Tradition: Non-fiction Prose Writers of the English countryside*, Sussex: Harvester.

Kopsidis, M. (2012) Peasant Agriculture and Economic Growth: The Case of Southeast Europe c. 1870-1940 reinterpreted, *Working Paper No 28.* European Historical Society.

Lobley, M. (1997) Small scale family farming and the environment: the contribution of small farms to the management of 'conservation capital' in the British countryside, London. Unpublished PhD thesis.

Lobley, M. (2000) Small-scale family farming and the stock of conservation capital in the British countryside, *Farm Management*, 10 (10), 589-605.

Lobley, M. (2014) *Leaving Farming*, Centre for Rural Policy Research, University of Exeter, Unpublished report for the Faming Help Charities.

Lobley, M. Baker, J. R. and Whithead, I. Eds. (2012) *Keeping it in the Family: International Perspectives on Succession and Retirement on Family Farms*, Farnham: Ashgate.

Lobley, M. and Butler, A. (2010) The impact of CAP reform on farmers' plans for the future: some evidence from South West England, *Food Policy,* 35**,** 341-348.

Lobley, M. Errington, A. McGeorge, A. Millard, N. and Potter, C. (2002) *Implications of Changes in the Structure of Agricultural Businesses*, Final Report to DEFRA, University of Plymouth.

Lobley, M. and Potter, C. (2004) Agricultural change and restructuring: recent evidence from a survey of agricultural households in England, *Journal of Rural Studies,* 20**,** 499-510.

Lobley, M. Potter, C. Butler, A. with Whitehead, I. and Millard, M. (2005) *The Wider Social Impacts of Changes in the Structure of Agricultural Businesses*, Final report to Defra, University of Exeter.

Lowe, P. Cox, G. MacEwan, M. O'Riordan, T. and Winter, M. (1986) *Countryside Conflicts: The Politics of Farming Forestry and Conservation,* Aldershot: Gower and Maurice Temple Smith.

MacFarlane, A. (1978) *The Origins of English Individualism: The Family, Property and Social Transition,* Oxford: Blackwell.

McElwee, G. (2008) A taxonomy of entrepreneurial farmers, *International Journal of Entrepreneurship and Small Business,* 6**,** 465-478.

Meert, H. van Huylenbroeck, G. Vernimmen, T. Bourgeois, M. and van Hecke, E. (2005) Farm household survival strategies and diversification on marginal farms, *Journal of Rural Studies,* 21**,** 81-97.

Midmore, P. and Dirks, J. (2003) The development and use of 'rapid assessment methods' in ex-ante and ex-post evaluations of policy initiatives in the rural economy, Paper presented at the Agricultural Economics Society Annual Conference, Seale Hayne Campus, Plymouth University.

Milbourne, P. Mitra, B. and Winter, M. (2001) *Agriculture and Rural Society: Complementarities and Conflicts between Farming and Incomers to the Countryside in England and Wales*, Cheltenham, Countryside and Community Research Unit Report to MAFF.

Morris, C. Jarratt, S., Lobley, M. and Wheeler. R (2016) Sustainable Intensification Research Platform Baseline Farm Survey Report. To be published by Defra here: http://sciencesearch.defra.gov.uk/Default.aspx?Menu=Menu&Module=More&Location=None&ProjectID=18803&FromSearch=Y&Publisher=1&SearchText=sustainable%20intensification&SortString=ProjectCode&SortOrder=Asc&Paging=10%23Description.

Murdoch, J. (1995) Governmentality and the politics of resistance in UK agriculture: the case of the Farmers' Union of Wales, *Sociologia Ruralis,* 35**,** 187-205.

National Assembly for Wales (2001) *Farming for the Future*, Government of the National Assembly for Wales, Cardiff.

NCC (1977) *Nature Conservation and Agriculture*, NCC, Peterborough.

Neville-Rolfe, E. (1984) *The Politics of Agriculture in the European Community*, London: Policy Studies Institute.

Newby, H. Bell, C. Rose, D. and Saunders, P. (1978) *Property, Paternalism and Power: Class and Control in Rural England,* London: Hutchinson.

Newby, H. Rose, D. Saunders, P. and Bell, C. (1981) Farming for survival: the small farmer in the contemporary rural class structure. *In* Bechoffer, F. and Elliot, B. (eds.) *The Petit Bourgeoisie: Comparative Studies of the Uneasy Stratum.* London: Macmillan.

Northfield Committee (1979) *Report of the Committee of Inquiry into the Acquisition and Occupancy of Agricultural Land*. London: HMSO.

Paarlberg, D. (1980) *Farm and Food Policy: Issues of the 1980s*, USA: University of Nebraska Press.

Perry, P. J. (1973) *British Agriculture 1875-1914,* London: Methuen.

Parry, J. Barnes, H. Lindsey, R. Taylor, R. (2005) *Farmers, Farm Workers and Work-related Stress*, London: Health and Safety Executive.

Potter, C. and Lobley, M. (1992) *Small Farming and the Environment*, Report prepared for the Royal Society for the Protection of Birds.

Potter, C. and Lobley, M. (1993) Helping small farms and keeping Europe beautiful: a critical review of the environmental case for supporting the small family farm, *Land Use Policy,* 10, 267-279.

Potter, C. and Lobley, M. (1996a) Unbroken threads? Succession and its effects on family farms in Britain, *Sociologia Ruralis,* 36**,** 286-306.

Potter, C. and Lobley, M. (1996b) The farm family life cycle, succession paths and environmental change in Britain's countryside, *Journal of Agricultural Economics,* 47**,** 172-190.

Prager, K. and Thomson, K. (2014) *AKIS and advisory services in the United Kingdom*, Report for the AKIS inventory (WP3) of the PRO AKIS project. Online resource: www.proakis.eu/publicationsandevents/pubs

Pretty, J. (2002) *Agri-Culture: Reconnecting People, Land and Nature*, London: Earthscan.

Pritchard, B., Burch, D. and Lawrence, G. (2007) Neither 'family' nor 'corporate' farming: Australian tomato growers as farm family entrepreneurs, *Journal of Rural Studies,* 23**,** 75-87.

Rackham, O. (1986) *The History of the Countryside*, London: Dent.

Redman, G. (ed.) (2015) *The John Nix 2016 Farm Management Pocketbook*, Melton Mowbray: Argo Business Consultants Ltd.

Reed, M. (1984) The peasantry of nineteenth-century England: a neglected class? *History Workshop Journal,* 18**,** 53-76.

Reed, M. (1986) Nineteenth-century rural England: a case for 'peasant studies'? *The Journal of Peasant Studies,* 14**,** 78-99.

Reed, M. Lobley, M. Winter, M. and Chandler, J. (2002) *Family Farmers on the Edge: Adaptability and Change in Farm Households*, University of Plymouth: Department of Land Use and Rural Management.

Rebanks, J (2015) T*he Shepherd's Life: A Tale of the Lake District*, London: Penguin.

Rural Advisory Services Working Group (2012) *Report of the Advisory Services Working Group* (Scotland).

Short, B. (2014) *The Battle of the Fields: Rural Community and Authority in Britain during the Second World War,* Suffolk: Boydell Press.

Shucksmith, M. (1993) Farm household behaviour and the transition to post-productivism, *Journal of Agricultural Economics,* 44, 466-478.

Shucksmith Report (2008) *Final Report of the Committee of Inquiry on Crofting*, Available: http://www.webarchive.org.uk/wayback/archive/20150211030117/http://www.croftinginquiry.org/Documents/final-report.html

Smaje, C. (2013) Kings and commoners: agroecology meets consumer culture, *Journal of Consumer Culture***,** 14, 1-19.

Smaje, C. (2015) The dearth of grass, *The Land,* 18**,** 7-10.

Spaak, Paul-Henri (1956) *Intergovernmental Committee on European Integration. The Brussels Report on the General Common Market (abridged, English translation of document commonly called the Spaak Report) [June 1956].*

Strange, M. (1988) *Family Farming: A New Economic Vision*, Lincoln 7 London: University of Nebraska Press.

Symes, D. G. (1972) Farm household and farm performance: a study of twentieth century changes in Ballyferriter, Southwest Ireland, *Ethnology,* 11**,** 25-38.

Tadesse, G. Algieri, B. Kalkuhl, M. and von Braun, J. (2014) Drivers and triggers of international food price spikes and volatility, *Food Policy, 47*, 117-128.

Tudge, C. (2007) *Feeding People is Easy,* Italy: Pari Publishing.

Turner, M. Winter, M. Barr, D. Errington, A. Fogerty, M. Lobley, M. and Reed, M. (2003) *Farm Diversification Activities: Benchmarking Study 2002,* Report to Defra, Centre for Rural Policy Research, University of Exeter.

Sutherland, L. (2012) Return of the gentleman farmer? Conceptualising gentrification in UK agriculture, *Journal of Rural Studies,* 28**,** 568-576.

Van der Ploeg, J. (2000) Revitalizing agriculture: farming economically as starting ground for rural development. *Sociologia Ruralis, 40*, 497-511.

Van der Ploeg, J. D. (2003) *The Virtual Farmer: Past, Present and Future of the Dutch Peasantry,* Assen: Royal Van Gorcum.

Westbury, D. B. Park, J. R. Mauchline, A. L. Crane, R.T. and Mortimer, S. R. (2011) Assessing the environmental performance of English arable and livestock holdings using data from the Farm Accountancy Data Network (FADN), *Journal of Environmental Management,* 92**,** 902-909.

Whitehead, I., Errington, A., Millard, N. and Felton, T., (2002) *An Economic Evaluation of the Agricultural Tenancies Act 1995, Final Report for DEFRA*, London: Defra.

Wilson, M. (1996) Farmers and the market, in: Carruthers, S. and Miller, F. (eds.) *Crisis on the family farm: ethics or economics?* Centre for Agricultural Strategy Paper 28, CAS, Reading, 236-240.

Wilson, P. (2009) *Analysis of Labour Usage Data from the Farm Business Survey from 2004/05 to 2007/08*, Rural Business Research Unit, Nottingham.

Wilson, P. (2014) Farmer characteristics associated with improved and high farm business performance, *International Journal of Agricultural Management, 3*, 191-199.

Wilson, P. (2016) *The Viability of the UK Small Farm: Analysis of Farm Business Survey 2014-15 Data for England and Wales,* Specially Commissioned Report for Prince's Countryside Fund Small Farm Research, available at www.exeter.ac.uk/leep.

Winter, M. (1986) *The Survival and Re-emergence of Family Farming a Study of the Holsworthy area of West Devon,* Unpublished PhD thesis, Open University.

Winter, M. (1995) *Networks of Knowledge*, Godalming: WWF.

Winter, M. (1996) *The Working of an Affiliated Regional Advisory and Training Service (ARATS) for Environmental Land Management in England*, Consultancy Report to FWAG and WWF.

Winter, M. with Mills, J. Lobley, M. and Winter, H. (2000) *Knowledge for Sustainable Agriculture*, Godalming: WWF.

Winter, M. and Butler, A. (2008) *Agricultural Land Tenure in England and Wales, 2007*, University of Exeter CRPR Research Report No 24.

Zayed, Y. (2016) *Agriculture Historical Statistics*, Briefing Paper No. 03339, House of Commons Library.

Zuckerman Committee (1961) *Scale of Enterprise in Farming, A Report by the Natural Resources (Technical) Committee*, London: HMSO.

Web Resources

Wilson, P. (2016) *The Viability of the UK Small Farm: Analysis of Farm Business Survey 2014-15 Data for England and Wales,* Specially Commissioned Report for Prince's Countryside Fund Small Farm Research, available at www.exeter.ac.uk/leep.

Responses to Call for Evidence available at www.exeter.ac.uk/leep.

Appendix 1

Categories and Variables used in the FBS Analysis

Note: not all of these variables have been reported on in this report but all are included in Wilson, P. (2016) *The Viability of the UK Small Farm: Analysis of Farm Business Survey 2014-15 Data for England and Wales*

FBS Categories	
Farm Type	Cereals; Dairy; General Cropping; Horticulture; LFA [Less Favoured Area] Grazing Livestock; Lowland Grazing Livestock; Miked; Pigs; Poultry.
Farm Size (group)	Small (very small and small), Medium, Large. Based upon Standard Labour Requirements (SLR). Small=<2 SLR; Medium=2-<3SLR; Large=3SLR or greater
Farm Business Income £/farm (FBI) performance quartile	Within farm size performance quartiles defined as: A (upper quartile; 75-100%), B (middle upper quartile; 50-<75)), C (middle lower quartile; 25-<50%), D (lower quartile; <25%).
FBS Variables	
Farm Business Income £/farm (FBI)	Farm business turnover, less farm business costs, plus profits from sale of farm business assets
Farm Business Income £/farm (FBI) from the Agriculture cost centre	FBI from the Agricultural component of the Farm Business, including FBI from Agricultural Contracting.
Farm Business Income £/farm (FBI) from the Agri-Environment cost centre	FBI from Agri-Environment activities
Farm Business Income £/farm (FBI) from the Diversification cost centre	FBI from Diversified activities
Farm Business Income £/farm (FBI) from the Single Farm Payment cost centre	FBI from the Single Farm Payment
Net Farm Income £/farm (NFI)	The return to the farmer and spouse for their manual and managerial labour and on tenant type capital in livestock, crops, machinery, etc., but excluding land and buildings. It is calculated before deduction of interest payments on any farming loans and also excludes interest earned on any financial assets owned
Farm Family Income £/farm (NFI)	The return to all unpaid labour (farmers and spouses, non-principal partners and directors and their spouses and family workers). It also includes breeding livestock stock appreciation although it cannot be realised without reducing the productive capacity of the farm.
Agriculture Output-Input Ratio	Agricultural Output value divided by Agricultural Input cost (including the value of unpaid labour)
Return on Tenant's Type Capital (ROTCE) (%) based on FBI returns	FBI divided by Tenant's Type Capital employed in the business
Gearing Ratio (%)	Total liabilities as a percentage of net worth
Revenue from Agricultural Contracting (£/farm)	Gross revenue to the farm business from Agricultural Contracting activities
Revenue from Agri-Environment and Diversification combined (£/farm)	Gross revenue to the farm business from Agri-Environment plus Diversification activities
Other Household Income (£/farm)	Income to the main farm family from sources not connected to the farm business
Farmer Labour Hours (hours/year)	The manual labour input from the farmer to the farm business, in hours per year

FBS Variables (continued)	
Value of Farmer Labour (£/farm)	The value of manual labour input from the farmer to the farm business
Spouse Labour Hours (hours/year)	The manual labour input from the spouse to the farm business, in hours per year
Value of Spouse Labour (£/farm)	The value of manual labour input from the spouse to the farm business
Paid Labour Hours (hours/year)	The manual paid labour input to the farm business, in hours per year
Cost of Paid Labour (£/farm)	The cost of paid labour input to the farm business
Labour and / or Machinery Sharing (%)	Farm businesses undertaking labour and / or machinery sharing with other farm businesses
Farms with one or more Organic Enterprise	Farm business with one or more organic enterprise on the farm
Utilised Agricultural Area that is Owner Occupied (%)	The percentage of total Utilised Agricultural Area (UAA) that is Owner Occupied, including land owned and mortgaged
Farmer Age (years)	The age of the main farm decision maker in years
Farmer with Further or Higher Education	Farmers with Further (e.g. National Diploma) or Higher (e.g. Degree, including post-graduate degree) in any subject
Presence of a Nominated Successor	Farm businesses where the farmer has recorded that there is a nominated successor to the business, either from within or outside of the farm family.

Appendix 2

The South West Farm Survey

The South West (SW) Farm Survey covered a broad range of topics. A number of questions, replicated from both the 2006 and 2010 survey, sought to ascertain basic information about the farmer (age, status in the business) and the farm (size, type, income, type of diversified enterprises, if any). The survey also contained questions on labour, the division of work on the farm, farmer wellbeing, plans for the future and succession. In addition, the survey included a number of short questions about the 'Brexit', ahead of the EU referendum in June 2016.

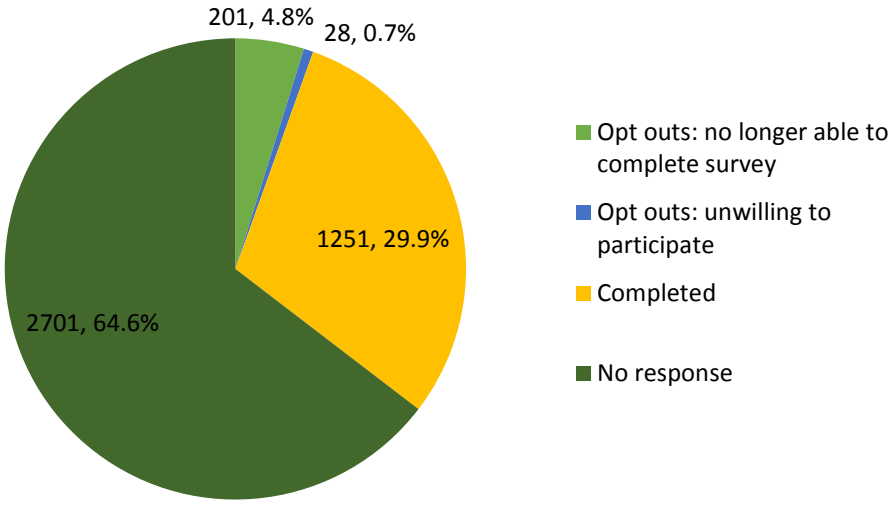
The SW Farm Survey, alongside an information sheet containing details about the survey and a freepost return envelope, were initially distributed to 4182 farms on the 7th March 2016. In addition to the paper survey, participants were given the option of completing the survey online, via Bristol Online Surveys. As explained in the information sheet, by way of a thank you, participants would have an opportunity to win a £50 voucher for a store of their choice, in the prize draw run on the 25th April 2016.

Returned surveys and opt outs were recorded and the remaining farms (i.e. those who had not returned the surveys or opted out) were sent a reminder card on the 23rd March 2016. As well as reminding farmers about the deadline (11th April 2016), the card included farmers' ID numbers and the online survey address.

Returned surveys and opt outs continued to be recorded and on the 1st April 2016, remaining farmers were sent a second survey pack, including the paper survey, the information sheet and a freepost return envelope.

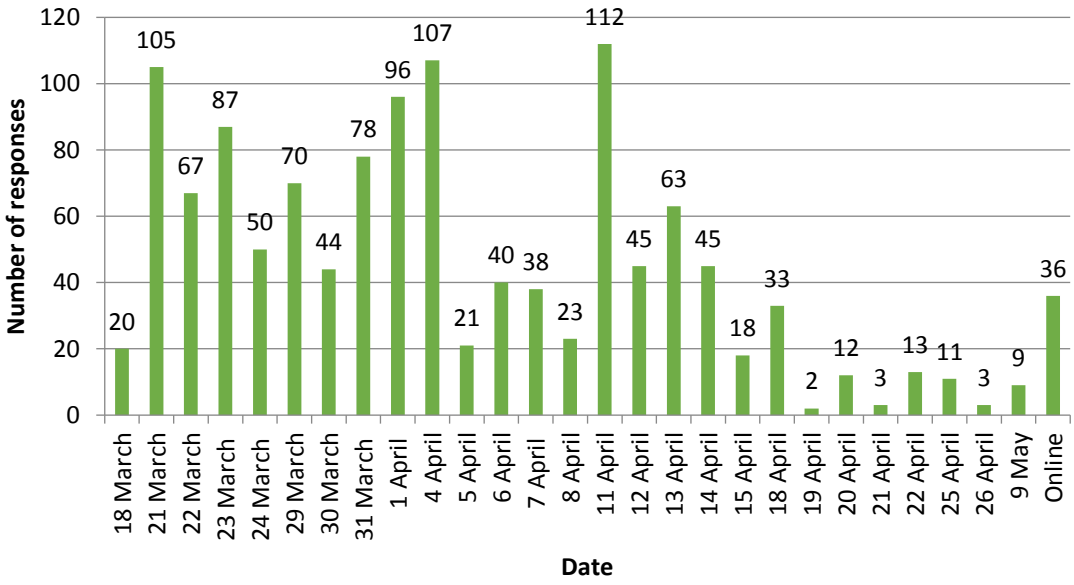
A total of 1486 responded to the survey (Figure 1). This included 229 opt outs and 1251 completed surveys. Of the 229 opt outs, 201 were no longer able to complete the survey (because they had either retired, deceased or sold/moved off the farm), and the remaining 28 were unwilling to participate. A total of 36 respondents completed the survey online. Including those no longer able to complete the survey, this is an overall response rate of 29.9%. Excluding those no longer able to complete the survey, this is a response rate of 31.4%.

Figure 1 Response Types



Despite the advertised closure of the survey as the 11th April 2016, surveys continued to be returned after this point. Responses continued to be included up until the beginning of the data analysis (9th May 2016). Response rates varied over the period (Figure 2).

Figure 2 Returns by Date



Appendix 3

Call for Evidence

A call for evidence was circulated in March 2016 to a range of existing contacts. It was also tweeted, receiving numerous re-tweets, and was publicised by the Prince's Countryside Fund.

People were asked to respond to the following questions:

1. What do small farms contribute to the agricultural sector, the rural economy and communities, and the countryside which is distinctive and important in comparison to larger farms?
2. How might a viable and vibrant small farm sector be encouraged and supported? This might include: the use of CAP measures, the operation of supply chains, taxation rules, tenure legislation, access to finance, and practices around succession and new entrants.
3. How might small farmers improve performance and viability through, for example, increased efficiency, added value, diversification, and co-operation?
4. We would also be grateful to receive any evidence detailing examples of 'good practice' where small farm businesses have thrived and where lessons might be learned for the sector as whole.

They could do this by emailing an inbox set up solely for this purpose, or by sending their evidence in writing to Michael Winter at the University of Exeter. The closing date for receipt of evidence was 20th April 2016 at 12 noon.

Respondents were asked to state their preference regarding the confidentiality of their submission by selecting one of the following statements:

1. I do not wish my name/organisation name to be included in any published results.
2. I am happy to have my name/organisation name included in published list of organisations/individuals submitting evidence but do not consent to quotes being attributed to myself/my organisation.
3. I am happy to have my name/organisation name included in published list of organisations/individuals submitting evidence and to having quotes attributed to myself/my organisation.

In total, we received 21 written responses to the call for evidence, all by email. Of those, the following agreed to be identified according to statement 2 or statement 3:

Andrew Cowen, Cowen Garden Design
Kevin Dowle
Robert Fraser, FEA Network
Malcolm Gough, Chater Valley Farm
Rachel Harries, Soil Association
Bob and Anne Harvey
Chris Jones, Woodland Valley Farm
Huw Jones, Glyn Coch Farm
Rob Walrond, Diocese of Bath and Wells
Helen Lintell
Rebecca Laughton, Landworkers' Alliance
Andrea Meanwell, The Syke Farm
Chris Smaje, Small Farm Future
Viv Tanna, Orchard Lodge Farm
William Taylor, NI Farm Groups, FFA and FFE
Maria Tolley, Honeycombe Farm
Mervyn Wilson, Family Farmers' Association
Joel Woolf, Foot Anstey

Is there a future for the small family farm in the UK?

A report to The Prince's Countryside Fund

June 2016

About The Prince's Countryside Fund

Established by HRH The Prince of Wales in 2010, The Prince's Countryside Fund aims to enhance the prospects of family farm businesses and the quality of rural life. We believe that the British countryside is our most valuable natural asset and its contribution to our everyday life cannot be underestimated.

To help support and secure the future of the countryside we:

- Provide more than £1.5m each year in grant funding to projects across the UK thanks to support from our partners, events and donations
- Celebrate and promote the value of the countryside
- Lead projects to strengthen farm businesses, such as The Prince's Dairy Initiative
- Commission research into issues affecting farming families and rural communities
- Bring together individuals and businesses to help tackle current challenges
- Help communities in crisis through our Emergency Fund

To find out more and download the full report please visit
www.princescountrysidefund.org.uk/research

About The Land, Environment Economics and Policy Institute

The Land, Environment, Economics and Policy Institute (LEEP) at the University of Exeter aims to develop knowledge and understanding to inform governments, businesses and communities about how land and the environment are managed and used; the policies that affect this; the impact upon people, and how policy should be better designed, appraised and evaluated. The breadth and depth of our perspectives on the relationship between land, society, the economy and environment, gives LEEP a unique perspective, combining insights about how these interact at a macro-level with in-depth understanding of how policies affect individual businesses, farms and households.

leep@exeter.ac.uk
www.exeter.ac.uk/LEEP

Michael Winter, Land, Environment, Economics and Policy Institute (LEEP), University of Exeter
Matt Lobley, LEEP, University of Exeter
Hannah Chiswell, LEEP, University of Exeter
Keith Howe, LEEP, University of Exeter
Tim Wilkinson, LEEP, University of Exeter
Paul Wilson, Rural Business Research Unit, University of Nottingham

The Prince's Countryside Fund is grateful to the following companies for their donations to support the publication of this report: Landmarc Support Services Ltd, Marks and Spencer Plc, Virgin Money Plc and Waitrose Ltd

The Prince's Countryside Fund Charity No. 1136077 Company Limited by Guarantee No. 07240359
Registered office: 137 Shepherdess Walk, London, N1 7RQ Design: Johnny Burke Print: Partridges UK

THE PRINCE'S COUNTRYSIDE FUND