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REFEREED PAPER

DIVERSIFICATION ACTIVITIES ON DAIRY FARMS IN THE SOUTH WEST OF ENGLAND

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This paper examines the amount and type of diversification activities on 156 dairy farmers. About half had some diversification activity: the most common being 'accommodation and catering', 'agricultural services' and 'trading enterprises'. The types and incidence of activities reported were similar to those recorded in a large-scale study by the Centre for Rural Research at Exeter (CRR 2002) but greater than those reported by MDC (February 2007) and DEFRA (for the 2004/5 quota year). The reasons given for diversifying were, firstly, 'survival', secondly, 'government policy' and thirdly, 'personal circumstances'. This shows the importance of income pressures on business development, that many dairy farmers in the South West are reducing their dependence on the milk cheque and raises issues related to the future production base of UK milk production.

Key words: Diversification, dairy farming, resource use

Introduction

The UK dairy farming sector has been under financial pressure because of reforms to milk marketing arrangements, low milk prices, the BSE crisis, the Foot and Mouth crisis, the ban on the export of beef and changes in the CAP. In their recent study of the economics of milk production in the 2001/02 milk quota year, Colman and Harvey (2003) estimate that 60% of dairy farms - and 40% of milk produced - failed to cover full economic costs. Average dairy farm profitability fell in the following year, and though it improved in 2003/04 and 2004/05, it still remained below the 2001/02 level (DEFRA 2006a). In 2005/06, 29% of dairy farmers recorded a Net Farm Income of less than £10,000 (DEFRA 2006a) and estimates for 2006/07 suggest that all but the top 25% of dairy farms will experience a loss (MDC 2007a). On average, over 1,000 dairy farmers leave the industry each year (Brigstock 2004; Kite Consulting 2006), and in recent years the UK has regularly failed to fulfil its milk quota allocation. MDC survey's of dairy farmers' intensions showed that 11% intended to leave milk production in 2005 rising to 16% in 2007 (MDC 2007b: p. 7).

Colman (2003) identifies five strategies that farmers can follow to help off-set income loss and increase farm-household incomes.

- Expand production,
- Take up off-farm employment,
- Develop niche markets,
- Supplement farming income with investment or pension income,
- Diversify.[1]

This study examines the extent to which dairy farmers in the South West

1. Brigstocke's (2004) analysis of strategies for a dairy farmer's survival adds 'adopting operational excellence-best practice' to this list

have diversified their dairy based farm business. It is a cross-sectional study, that is, it records those activities currently pursued at the time of the survey (which was January 2006) and does not seek to establish the time at which these activities were established: it is assumed some activities will be long-standing, others relatively recent. Most studies suggest farm diversification can occur for a number of reasons (summarised as internal reasons (for example, farm size, type, farmer and farm household characteristics) and external reasons (for example, policy, market opportunities, and location) in the Centre for Rural Research report (CRR)[2], but many studies have found that the single most important driver is "pressure on farm incomes" (Ilbery *et al*. 2006: p. 10). So important has the 'diversified income stream' become, that total income from diversification activities on UK farms reached over £100 million (for the first time) in 2002/03 (DEFRA 2004). By 2004/05 the estimated 46% of farms with some form of diversified activity (DEFRA 2006b: Table 1, p. 4) generated an average total value of output of £18,500, with an average net margin per farm of £10,900 (DEFRA 2006b: Table 3, p. 5).

Given this primary driver, and the financial strains on milk production in recent years, one might expect a sizable proportion of dairy farmers might have diversified their income streams. However, data suggests that on average, fewer livestock farmers have a source of diversified income than arable farmers. DEFRA estimate 40% of dairy farms have diversified activities on their farm (DEFRA 2006b: Table 6, p. 9), less than their estimated 67% of cereal and 54% of general cropping farms. A large postal survey by CRR in 2002 reported that 50.1% of dairy farmers had some form of diversified activity, which was 8.2% less than the average of 58.3% for all holdings. However, another survey of 657 dairy farmers in 2007 reported that only 19% has some form of diversified business (MDC 2007b).

This study was conducted simply to reveal the extent of diversification on dairy farms in the South West of England. We surveyed 156 dairy farmers to discover the incidence and type of diversification activity, and the reasons for establishing these enterprises. Farm diversification has been described as 'branching out into other activities and business enterprises either related to farming or different from farming but making use of the assets that a farm typically might possess' Biz/ed (2004). However, definitions of farm diversification have changed over time (Ilbery *et al*. 2006),[3] so we chose the definition used by the CRR Study (which excluded organic farming, participation in agri-environment schemes and new woodland planting). This allows us to use that study as it was designed to be used, namely as a benchmark against which to compare future findings.

This study of dairy farmers in the South West found that 48% of dairy farmers surveyed had some form of diversification activity, more than either the DEFRA estimate or the MDC survey but slightly less than the CRR findings. The CRR study was undertaken between February and October 2002 and reported on a postal survey of about 2,550 English holdings; it is, therefore, much more extensive than our survey and this needs to be borne in

2. It should be noted that interactions between internal and external factors are likely to be of particular importance.
3. A useful review of these debates is available in the CRR (2002) study, pages 11 – 20.

mind when comparing changes that may have occurred in the intervening four years. Another reason for differences may be the regional focus of our study, as the incidence of diversification is not uniform across England (CRR 2002). For example, some 56% of farmers in the East Midlands have some diversified activity, whilst only 34% of farmers in the North East and Yorkshire and about 40% of farms in the South West. As intimated above, many factors are likely to affect the incidence of diversification; wider farm and farmer characteristics, such as locality, under-utilised farm resources and off-farm employment opportunities (CRR 2002). Whilst the uneven distribution of diversified activities between region and farm type is an interesting area for research, it is not the particularly focus of this analysis. Rather this paper focuses on two issues: (1) the types of diversification undertaken and (2) the reasons these activities were established.

The following section outlines the research methodology adopted in this study. This is followed by the research findings: firstly, tables showing the types of diversification activities recorded and comparing these findings with the CRR study; secondly, an analysis of the reasons why farmers have diversified using factor analysis. This technique can reveal underlying relationships between the different responses given to the question "why did you diversify?" A discussion and brief conclusion complete the paper.

Research Methodology

Questionnaires were sent to 300 dairy farmers in the South West of England based on a random sample of dairy farmers stratified by county; Cornwall, Devon, Somerset, Dorset, Avon, Gloucester and Wiltshire. The questionnaire is reproduced in Annex 1. The sample was randomly selected from a list of dairy farmers in each county, taken from the Yellow Pages. Stratification was based on the geographical size of the county, i.e. Cornwall had larger sample than Gloucestershire because it is a larger county.

The questionnaire was designed to reveal background information concerning the respondent's farming activities, whether or not the farmer had diversified. The diversification activity undertaken was recorded under the same eight headings as used in the Exeter CRR (2002) study to allow direct comparisons. Each of the eight headings comprises a number of separate diversification activities (which are individually identified in the CRR study and in the presentation of our results). We also asked farmers how important different goals were to the decision to diversify; these responses were measured using a five-point Likert scale with 1 signifying 'not at all important' and 5 'very important' (Bryman 2001a; 2001b). Lastly the questionnaire obtained specific information about the farmer, farm and business. Responses were analysed by Statistical Package for Social Sciences (SPSS 2001) and results subjected to factor analysis, which is a technique that can uncover hidden structures within response variables.

The decision was taken not to ask for financial information in the survey questionnaire. This was because it would expand the questionnaire considerably, and farmers would be much less likely to respond to postal-surveys when asked to provide confidential information. Moreover, time and resources were constrained and a low response rate might have jeopardised the

study. Whilst such financial data would show useful additional information it is not needed for identifying diversification enterprises and for factor analysis of the reasons why farmers diversified, which are the key objectives of this study.

Survey details and descriptive statistics

Of the 300 questionnaires, 170 (57%) were returned, however 6 (2%) were incomplete and so unusable. A further 8 were received after the cut-off date and so could not be included. Therefore, 156 usable responses were received (52% of the posted questionnaires). Of these, 81 (52%) had not diversified and 75 (48%) had. Together, a total of 210 diversified enterprises were recorded (an average of 2.6 per diversified farm). Table 1 shows the location of the survey respondents. Table 2 presents descriptive statistics of the data. These show that owner-occupied farm and larger farms are more likely to have diversified than tenanted farms and smaller farms respectively; and that older and younger farmers are less likely to have than those aged between 40 and 60. Interestingly, having an identified successor slightly decreased the likelihood that the farm will have some diversified activity.

Table 1. Respondents by county

Location	**Cornwall**	**Devon**	**Somerset**	**Dorset**	**Avon**	**Gloucester**	**Wiltshire**	**Total**
Responses	34	32	33	22	5	17	13	156
% returns	57%	53%	66%	44%	25%	57%	43%	52%
Number diversified	14	16	15	11	3	10	6	75
Not diversified	20	16	18	11	2	7	7	81

Table 2. Descriptive statistics of sample

	Diversified No.	**Diversified %**	**Not Diversified No.**	**Not Diversified %**	**Total**	**Total %**
All farms	75	*48*	81	*53*	156	*100*
Tenant farmer	11	*41*	16	*59*	27	*17*
Owner occupier	47	*52*	43	*48*	90	*57*
Mixed tenure	17	*44*	22	*56*	39	*25*
Age: 20<40 (18% of respondents)	13	*46*	15	*54*	28	*18*
Age: 40<60 (63% of respondents)	50	*51*	48	*49*	98	*63*
Age (60+) (19% of respondents)	12	*40*	18	*60*	30	*19*
Successor to farm identified	56	*46*	65	*54*	121	*78*
Successor to farm not identified	19	*54*	16	*46*	35	*22*
1 family employed on the farm	18	*40*	27	*60*	45	*29*
2 or 3 family employed on the farm	45	*48*	48	*52*	93	*61*
4 or 5 family employed on the farm	8	*73*	3	*27*	11	*7*
Farm size: 0 – 80 ha (200 acres)	17	*33*	35	*67*	52	*33*
Farm size: 80 – 160 ha (400 acres)	33	*49*	34	*51*	67	*43*
Farm size: 160 – 240 ha (600 acres)	13	*68*	6	*32*	19	*12*
Farm size: > 240 ha	12	*67*	6	*33*	18	*12*

N = 156

Types of enterprises found on dairy farms in the South West

'Accommodation and catering' was the most commonly observed

diversification enterprise, on 45% of dairy farms, followed closely by 'agricultural services' (43%) (Table 3). 'Miscellaneous enterprises' (28%), 'trading enterprises' (25%), 'recreation and leisure enterprises' (23%) and 'equine enterprises' (19%), 'unconventional livestock and livestock processing' on 16% and 'unconventional crops and crop-based processing' on only 9%. Compared to the CRR study, equine and accommodation and catering have increased by 10% and 19% respectively. Other results are largely similar. It is important to bear in mind the relatively small sample size of this study, so that any differences to the CRR study may be, at least in part, explained by sampling issues (for example, regional factors). Table 3 shows that each diversified farm had on average 2.6 diversified activities, rather more than reported by the CRR study (which reported 1.7). Developing the business in this way may offer some initial evidence of a deliberate move away from milk production as diversified activities gradually take over resources once used in milk production

Table 3. Diversification activity by eight major diversification categories.

Diversified Enterprise or Service Category	**Current study (2006)**			**CRR study (2002)**		
	No. of farms	**% of farms**	**No. of diversified activities**	**% Dairy farms (all regions) ***	**% all farm types in SW region†**	**% all farm types all regions†**
Trading enterprises	19	25	34	25	28	32
Agricultural services	32	43	41	42	35	35
Equine enterprises	14	19	17	9	21	23
Recreation and leisure	17	23	21	20	22	23
Accommodation and catering enterprises	34	45	47	26	34	24
Unconventional livestock and livestock processing	12	16	14	13	20	16
Miscellaneous services	21	28	27	21	29	35
Unconventional crops and crop-based processing	7	9	9	13	23	22
Average enterprise/diversified holding / farm (for each sample and sub-sample.)			2.6	1.7	2.1	2.1

*From the CRR (The Exeter baseline survey) (2002: Table 4.20: p 52).
† From the CRR (The Exeter baseline survey) (2002: Table 4.22: p 54; South West and All Regions).
Activities included within each of these categories are listed in the CRR (2002) baseline study (Tables 4.10 to 4.17 (pages 43 to 49). For example, activities classified as 'miscellaneous services' include: land let for sports grounds, buildings let for commercial/industrial use, woodland let for diversified activities, hire of buildings, other land or buildings let for diversified activities, secretarial services, stone extraction/landfill, vehicle storage, non-agricultural contracting, alternative technology, showground, dog/cat/breeding or kennels, caged birds, other miscellaneous services.

Multiple enterprises on dairy farms

Table 4 indicates the distribution of main categories of diversification activity on the farms. For example, 63% of trading enterprises occur on farms with only one trading enterprise, 16% on farms with two trading enterprises, 16% on farms with three trading enterprises and 5% of farms with four or more trading enterprises. This format was chosen to allow comparisons with the CRR report (also presented in Table 4) – the percentages are, on the whole, very similar to that of the larger-scale study.

Table 4. The number of multiple activities within the same diversification category.

Main diversification category	%. of farms with one or more enterprise (by category). 1	2	3	4+	No. of enterprises/category
Trading enterprises	63 (72)	16 (18)	16 (7)	5 (0)	**34**
Agricultural services	81 (81)	9 (15)	9 (4)	0 (0)	**41**
Equine enterprises	86 (80)	7 (15)	7 (4)	0 (1)	**17**
Recreation and leisure	75 (74)	19 (17)	6 (4)	0 (3)	**21**
Accommodation and catering	71 (84)	21 (13)	9 (2)	0 (0)	**47**
Unconventional livestock and livestock processing	83 (76)	17 (16)	0 (4)	0 (1)	**14**
Miscellaneous services	76 (62)	19 (23)	5 (10)	0 (3)	**27**
Unconventional crops and crop-based processing	71 (83)	29 (14)	0 (2)	0 (1)	**9**
Total number of enterprises					**210**

Numbers in parenthesis are the findings of the Centre for Rural Research (the Exeter Baseline Survey, Table 4.18, p. 50).

Diversification enterprises and services: survey findings

Tables 5 and 6 (and Tables A2.1 to A2.6 in Annex 2) present details of the diversification activity by each of the eight diversification categories and compares the findings to those reported in the CRR study. For example, Table 5 shows details of the 'trading' diversification activities recorded on the surveyed farms. In total, 19 diversified farms (25%) reported some form of 'trading' diversification; 34 trading activities were observed in the sample. The most common trading enterprise was 'hay and straw sales' (28%), followed by 'egg sales' (18%) and 'farm shop' (15%). Our survey reported broadly similar percentages of activity to the CRR baseline survey, the main difference being the percentage of farms with a farm shop (15% compared to 5%). Farm shops require considerable resources in particular labour, three farms with 'trading' activities employed more than seven workers, and one had six. Farms employing a larger number of family members are more likely to have diversified activity (Table 2), but data are not available on cause and effect: whether the enterprise was established primarily to provide income for family members, or whether the enterprise existed before family were employed on the farm.

Activities in the 'trading' diversification category often require expertise not regularly required for dairy farming, for example running a farm shop. In contrast, the activities listed under agricultural services in Table 6 (which are found on 43% of diversified farms) reflect skills dairy farmers might be expected to have mastered in the course of their own farming activities, for example, agricultural contracting (69%) and haulage (5%): most farmers will have the skills needed for agricultural contracting and many will have surplus capacity that allows them to hire out machinery.

As livestock farmers, it might be thought dairy farmers would be attracted to equine enterprises. However, Table 3 shows more had diversified into "recreation and leisure" (17 farms), "accommodation and catering" (34), and

"miscellaneous services" (21), only 17 were involved in "equine enterprises", slightly more than the other livestock category, "unconventional livestock and livestock processing", and "unconventional crops and crop based processing" (7). These more popular new enterprises are activities with a high income elasticity of demand (i.e. can be expected to grow as the economy grows), and which have expected income flows that are uncorrelated with the farm sector (though it has been argued that the main casualties of the Foot and Mouth crisis were rural tourist enterprises, so perhaps under extreme conditions, there is a higher degree of correlation between some of these activities and farm income than might at first glance be supposed (Franks *et al.* 2003)).

Table 5. Diversified activities included under 'trading enterprises'

Type of trading enterprise diversification	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D2)
Farm shop	5	15	5
Freezer shop	1	3	3
Market stall	1	3	4
Farmer's market	1	3	5
Egg sales	6	18	13
Milk round	1	3	5
Garden centre	3	9	4
Hay/straw sales	10	28	26
Other marketing or retail	2	6	9
Rural crafts	1	3	6
Timber products	3	9	8
Others	0	0	12
Total number of activities	**34**	**100**	**100**

Table 6. Diversified activities included under 'agricultural services'

Type of agricultural services diversification	No. of diversified enterprises(2006 surey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D1)
Agricultural contracting	28	69	67
Machinery hire	6	15	7
Provision of cold storage facilities	1	2	5
Consultancy and management	3	7	4
Agricultural sundries	1	2	1
Haulage	2	5	5
Others	0	0	11
Total number of activities	**41**	**100**	**100**

Reasons for diversifying (results of the Factor Analysis)

Factor analysis is a useful analytical technique to use to group drivers of diversification. It examines correlation between responses to the question, why did you diversify? If responses are highly correlated they can be represented as a single causal factor. Correlated variables are grouped into factors which are derived sequentially and in order of importance (by a process of "rotation"), the factors together account for some proportion of the total variance of all the

variables. The first factor is the most important as it accounts for the largest amount of variance, each subsequent factor accounts for a smaller portion of the total variance. Both the Bartlett's Test of Sphericity and the Kaiser-Meyer-Olkin (KMO) (a value of 0.690, which is categorised by Kaiser (1974) as 'middling') suggest the variables are correlated.

Goodness of fit is evaluated by comparing the explained to the total variation in the data. Three criteria can help in deciding on the number of factors that adequately represents the data: the Eigen value, the Scree test and the Variance criterion. The generally recommended Eigen value criterion, with values of one or more, was used in this study (Hair *et al.* 1998). In this way, three factors were identified which together explained 64% of the variance in the response variables; a respectable percentage in social sciences (but implying 36% of the data was not explained). The Scree test supported the derivation of three factors as indicated by the location of the elbow shaped kink in the output graph.

Table 7 shows the structure of the rotated variables. Communality (final column in Table 7) is the proportion of variance of a variable explained by the common factor (Hair *et al.* 1998): large communalities indicate that a large amount of the variance in a response variable has been extracted by the factor solution. The highest communality (and hence the most important driver to diversification) is the response 'changes in CAP' with 0.781, 78.1% of the total variation in 'changes in CAP' is explained by the 3 factors taken together. A small communality can also be of analytical interest as this mean that a larger portion of the variance in that variable is unaccounted for by the three factors. The responses with the lowest communality are 'making better use of unused resources' (35.3%) and 'opportunity to try a new hobby' (33.5% explained). Only those responses with a factor loading of 0.7 or above were retained, so these two variables were eliminated from the final factor interpretation, helping to confirm that diversification activities are not leisure activities but serious business ventures. Note also, that resources used in the diversification activity were not previously being under-used which implies a deliberate reallocation of productive resources within the business, presumably away from milk production.

The final factors are displayed and interpreted in Table 8. Factor 1 includes increasing farm income, securing a profitable future and pressure on farming as key reasons for setting up their diversification enterprise(s). These can be interpreted together as "survival", and as Factor 1 accounts for most variation it can be seen as the most important reason for diversifying. The second factor, interpreted as "government policy" includes changes in the CAP, the use of the SFP and the changing structure of farming as principle motivations for diversifying. "Personal circumstances" – family circumstances and investment – are the third main reason for diversifying

Table 7. The rotated factor matrix showing the elative importance of farmer's reasons for diversifying.

Reasons for diversification	**FACTORS**			**Test statistic**
	1	**2**	**3**	**$h^{2(Communalities)}$**
Increased farm income	.861	-.144	.123	.777
Opportunity to try a new	-.266	.462	.225	.335
Make better use of an un-	.592	-.052	.011	.353
Changes in CAP	.215	.848	-.120	.781
Changes in farming infra-	.118	.790	.273	.713
Use of SFP for reinvestment	-.189	.815	-.078	.707
Level of initial investment	.070	.109	.785	.632
Family circumstances	.271	-.059	.790	.698
Securing a profitable future	.811	-.029	.307	.752
Pressures on farming	.706	.373	.122	.652
Eigenvalue	2.493	2.398	1.510	
Variance	24.92	23.98	15.10	
Cumulative variance	24.92	48.91	64.01	

Table 8. The three main reasons for diversification

	Significance factor*	**Interpretation**
Factor 1		
Increased farm income	0.861	
Securing a profitable future	0.811	**Survival**
Pressures on farming	0.706	
Factor 2		
Changes in CAP	0.848	**Government policy**
Use of SFP for re-investment	0.815	
Changes in farming infrastructure	0.790	
Factor 3		
Family circumstances	0.790	**Personal situation**
Level of initial investment	0.785	

* Only significance factors above 0.7 are reported.

Discussion

This survey found that 48% of dairy farmers in the South West had some type of diversified activity. This is slightly more that the 40% recorded in DEFRA's national statistics for dairy farmers (in 2004/05), but similar to that recorded by DEFRA for all farm types (46%) and by the CRR (2002) study (51.1%). The types of diversified activities found are similar to that reported in the CRR 2002 baseline survey. This suggests dairy farmers in the South West have similar diversification opportunities as farmers elsewhere. Many of the observed diversification activities conform to the kind of exploitation of market opportunities that all resource owners in every sector of an enterprise-based economy are expected to do (McInerney and Turner 1989).

That there has not been an increase in the percentage of farms with diversified activities is perhaps surprising given the CRR finding that 46% of currently diversified farms planned to introduce a new diversified activity in the "foreseeable future" (p 144) – which was taken to mean the next 5 years.[4] 43% of the planned new activities were in "miscellaneous activities" and 27% in "accommodation and catering", our survey finding showed these were the areas where there had been most expansion (a 7% and 19% increase in "miscellaneous services" and "accommodation and catering enterprises" respectively). Also, the number of diversified activities per diversified farm appears to have increased in the four years since the CRR study.

Apart for the different sample size and regional focus, comparisons with the CRR study need to bear in mind the structural changes in the dairy sector since 2002. There is evidence from previous studies that diversification can be a first step out of milk production (Toon 2003; Kimhi 1994; MDC 2007b). If this is so, one can expect many of those farmers in the CRR 2002 study who stated their intention to 'develop their diversified activities' to no longer be classified as dairy farmers. Indeed, a quite remarkable finding from the CRR study was that "on nearly one in five diversified holdings there is no conventional agricultural production. Considered in the context of England's agricultural sector, therefore, it is estimated that about ten per cent of all "farm" holdings are engaged only in diversified activities" (p. 30-31).

Nearly 50% of dairy farmers have some form of diversified activity, and the number of diversified activities per diversified farm appears to be increasing. Moreover, decoupling of support from production (under the Single Farm Payment Scheme) are expected to continue the reduction in dairy farmers and the continuation in the westward movement of milk production (Brigstocke 2004; MDC 2007b). If these trends are correct, and if establishing a diversified activity represents a first move away from milk production - as the diversified business activities increasingly win the battle for funds and attention - then not only is it likely that the existing rate of exit from dairy farming will continue, but also a serious question mark must exist over whether a sufficiently large population of dairy farmers will remain in the South West to absorb the milk quota being released from the East and from other dairy farmers in the South West quitting milk production.

4. The CRR study did not report these data by farm type.

Drivers for Diversifying

Drivers to diversification are 'survival', 'government policy' and 'personal circumstances'. Given the evidence from previous studies of on-farm diversification and the weak trading circumstances of most dairy farms in recent years (MDC 2005a), it might be expected that "survival" would be an important factor: this study suggests it is the most important reason. Government might be encouraged to note that changes to the CAP have resulted in a more entrepreneurial approach. This perhaps indicates that the SFP is increasingly being used to reinvest in the farm business - but not the dairy enterprise. Such investments will help boost the rural economy and are among the change DEFRA might have wished for when it supported and introduced the Fischler reforms.

Therefore, the relatively large proportion of the surveyed dairy farmers with some form of diversified activity has been caused in large part by the increasingly difficult time dairy farmers have had since the demise of the UK's Milk Marketing Boards (Franks 2001; MDC 2007a). Their new milk purchasers have proved difficult customers. Restructuring of the ownership of processing capacity, frequent changes to the value of the constituents of milk, policy changes at European and National levels, and (often) an additional deduction from the milk cheque to underpin the financial structures of their milk purchaser have all made it increasingly difficult for farmers to understand their milk-buying customers and to derive value from that understanding (as argued in two recent MDC reports; MDC 2005b and MDC 2007a). This survey suggests that many farmers have turned their attention towards supplying customers who they can understand with products and services that are clearly valued. This transparency at least gives them the chance of creating a business that, through products and services, provides them some opportunity of deriving value from their business activities.

This survey found that barriers to diversification were tenure (owner occupiers are more likely to have diversified, supporting the findings of Ilbery *et al.* 2006),[5] age of farmer (with older farmers in particular less likely to diversify) and size of the farm (larger farms are more likely to have diversified). Having a recognised successor appears to make little difference; presumably the other factors are more influential. It appears that the desire to pass the farm business onto the next generation is not the primary motivation for investing in a diversified activity: for many, the new activity generates income necessary to support the well-being of the current farming generation. The findings suggest that being in milk production does not represent a particular barrier to diversifying dairy farm incomes.

Conclusions

The results of this survey, which was conducted in January 2006, show that the proportion of diversified dairy farms in the South West is greater than DEFRA's estimated for the national average in 2004/05 for dairy farms in England and Wales. It reports a similar percentage of dairy farms have diversified activities as the CRR baseline survey, which was conducted in

5. 'Tenant farmers, of different types, have often had less freedom of choice in their decision-making when compared with owner-occupiers, especially in relation to their farming and diversification activities" (Ilbery *et al.* 2006: p. 1).

2002. That there is no increase over the CRR study may hide the real dynamic impact of diversification on milk production, as dairy farmers in the CRR study may now no longer be dairy farmers but more appropriately classified as rural entrepreneurs. It is also significant that a similar proportion of dairy farmers are engaged in diversification. The South West is one of the best areas in Europe for growing grass and as such is an area where dairy farmers might have been expected to capitalise on the opportunity of turning grass into milk by concentrating on improving their core business rather than diversifying out of it.

Whether these diversifying farmers are taking their first step out of farming or not (an interesting area for further study), these results should put pressure on milk buyers to develop more transparent and stable marketing arrangements and more generous farm-gate prices. If a sizable proportion of dairy farmers in the South West are strategically positioning themselves to generate a livelihood without the milk cheque then the South West region will be less able to absorb the flow of milk quota from the East and UK milk production will continue to fall, with the consequent under-utilisation and closure of milk processing capacity. This study shows that the motivations for diversifying are 'survival', 'government policy' and 'personal circumstances'. There is no reason to suppose that the forces creating these motivations will change as the implications of the Fischler reforms to the dairy regime become fully understood among dairy farmers.

About the authors

Charlie Dupont is the son of a former dairy farmer. He graduated with a first class degree in Agri-business Management from Newcastle University in 2006 and this paper is drawn from research submitted in partial fulfilment of that degree. Charlie then worked for Pineapple Developments, specialising in farm and rural diversification, but intends to return to agriculture at some time in the future should the opportunity arise.

Jeremy Franks is a Senior Lecturer in Farm Business Management at Newcastle University. He has wide-ranging research interest, including whole farm financial appraisal and analysis, and enterprise performance. He has recently completed research into farmer's and advisor's attitudes towards the UK's Environmental Stewardship Scheme, and is currently researching issues related to the impact of global heating on climate change and farming's foot- and hoof-print. J.R.Franks@ncl.ac.uk

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ANNEX 1: QUESTIONNAIRE USED IN THE SURVEY

Section A (Please tick as appropriate)

Question 1

Are you a tenant farmer, owner occupied or mixed?

Tenant	Owner occupied	Mixed

Question 2

How many years have you been dairy farming?

0-10	11-20	21-30	31-40	41+

Question 3a

Have you always dairy farmed?

Yes	No

Question 3b

If No, what did you do before?

Arable	Beef	Sheep	Horticulture	Worked on other farm	No previous farming experience	If other, please state

Question 4

Where is your farm situated?

Cornwall	Devon	Somerset	Dorset	Avon	Gloucester-	Wiltshire

Question 5

Please indicate the size of the farm (in acres)?

0-100	101-200	201-300	301-400	401-500	501-600	601+

Section B

Question 6

Do you **currently** have any diversification project on your dairy farm?

Yes	No

If **Yes,** please proceed to Section C and indicate in Table 1.

Question 7

What is the likelihood of you diversifying in the next 5 years?

Not likely	Quite likely	Very

Question 8

If 'Quite likely' or 'Very likely', please state what?

……

Question 9

Why would you diversify?

……..

Section C

Question 10

Rank the importance of each factor in the decision making process to diversify?
(1 not at all important, 5 very important).

Factor	**1**	**2**	**3**	**4**	**5**
Increased farm income					

Factor	**1**	**2**	**3**	**4**	**5**
Opportunity to try a new hobby/interest					

Factor	**1**	**2**	**3**	**4**	**5**
To make better use of an unused resource.					

Factor	**1**	**2**	**3**	**4**	**5**
Changes in the CAP policy (such as the increase in					

Factor	**1**	**2**	**3**	**4**	**5**
The change in farming infrastructure					

Factor	**1**	**2**	**3**	**4**	**5**
The use of the single farm payment to invest in unused					

Factor	**1**	**2**	**3**	**4**	**5**
Level of initial investment available					

Factor	**1**	**2**	**3**	**4**	**5**
Family Circumstances i.e. family support and involve-					

Factor	**1**	**2**	**3**	**4**	**5**
Securing a profitable future					

Resources were already in place **Had to learn a new technique**

Factor	**1**	**2**	**3**	**4**	**5**
Pressures on farming					

1	**2**	**3**	**4**	**5**	**6**	**7+**

1	**2**	**3**	**4**	**5**	**6**	**7+**

1	**2**	**3**	**4**	**5**	**6**	**7+**

Yes	**No**

Yes	**No**

Yes	**No**

ANNEX 2. ADDITIONAL TABLES

Table A2.1. Diversified activities included under 'equine enterprises'

Type of equine enterprise diversification	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D4)
Horse riding/trekking	2	12	5
Livery	13	76	70
Horse racing and stud	1	6	3
Horse trials	1	6	8
Other	0	0	15
Total number of activities	**17**	**100**	**100**

Table A.2.2..Diversified activities included under 'recreation and leisure'

Type of recreation and leisure diversification	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D5)
Shooting	11	51	49
Motorsport	2	9	0
Picnic site	1	5	2
Wildlife/trail/museum	1	5	2
Fishing	2	10	20
War games	1	5	2
Educational facilities	1	5	4
Other leisure (in. golf)	2	10	8
Other	0	0	15
Total number of activities	**21**	**100**	**100**

Table A.2.3. Diversified activities included under 'accommodation and catering'

Type of accommodation and catering diversification	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D3)
Caravan/camping site	4	9	13
Holiday cottages	11	23	17
Rented accommodation (all year)	15	31	43
Bed and breakfast	13	28	24
On-farm catering	4	9	2
Others	0	0	2
Total number of activities	**47**	**100**	**100**

Table A.2.4. Diversification activities included under 'unconventional livestock and livestock processing'

Type of unconventional livestock and livestock processing diversification	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D7)
Rare breeds	1	7	19
Bees/honey	2	14	6
Deer	1	7	0
Minority poultry and game	3	21	14
Milk products-cows	4	30	6
Milk bottling	1	7	8
Other unconventional livestock	2	14	6
Other	0	0	41
Total	**14**	**100**	**100**

Table A.2.5. Diversified activities included under 'miscellaneous services'

Type of miscellaneous services Diversification	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D8)
Land let for sports ground	2	7	5
Building let for commercial/ industrial use	11	41	36
Hire of buildings	2	7	19
Secretarial services	1	4	1
Vehicle storage	3	11	15
Non-agricultural contracting	1	4	10
Showground	1	4	0
Other miscellaneous services	6	22	14
Total number of services	**27**	**100**	**100**

Table A.2.6. Diversification activities included under 'Unconventional crops and crop bases processing'

Type of unconventional crops and crop-based processing	No. of diversified enterprises (2006 survey)	% of activities (2006 survey)	% of activities CRR survey (2002: Table D6)
Special flowers	1	11	12
Animal feeds	1	11	3
Fuel wood	3	34	27
Cider/fruit juice	2	22	0
Wine making	1	11	0
Other unconventional crops	1	11	58*
Total number of activities	**9**	**100**	**100**

* Includes Christmas trees (12%), washing/grading etc (12%), energy crops (9%)