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The Predicted Impacts of the Proposed Greening Measures of the 2014 CAP Reform on Farming Businesses in North Cornwall

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Abstract

The aim of the study was to investigate the farm level impacts of the Greening Measures as proposed by the EU Commission under the 2014 CAP Reform across the three main farm types in North Cornwall. Semi-structured interviews were conducted with 8 farmers in each category of dairy, mixed and upland farms. These aimed to determine the perceived level and nature of the impact of each of the three proposed measures: permanent pasture preservation, crop diversity and eco-focus land use. The study concluded that dairy farms would be the farm type most heavily impacted by the measures in general and in particular those that grew only one arable crop. Mixed farms were also impacted predominantly just from the permanent pasture and crop diversification elements of Greening. The investigation found that upland farms were likely to remain largely unaffected by proposed Greening Measures.

Keywords Greening, CAP, Reform, Farmer Perception

JEL code **Q180**

Introduction

The proposals for applying Greening Measures to direct payments under Pillar 1 of the Common Agricultural Policy (CAP) were set out by the European Commission (EC) of the European Union (EU) in October 2011 (European Commission, 2011a). The proposed measures involve a requirement to preserve permanent pasture, ensure crop diversity by growing a minimum of three crops on arable land and to put a minimum of 7% of land not in permanent pasture into 'ecological focus' land uses (as defined in EC 2011a Article 32). These measures have been subject to high level impact analysis by the Commission (EC, 2011b). Although this analysis was undertaken using FADN farm level data it was nevertheless based on partial equilibrium modeling using aggregated data. The study in North Cornwall adopts a much more specific emphasis on farm level consequences looking more closely at farmer reaction and potential management consequences than economic evaluation. The aim was to understand the practical issues that will influence farmer decision-making in response to the changes rather than to evaluate the economic impact on a broader scale. In particular the study aimed to differentiate the consequences by farm type within one locality, North Cornwall in England.

North Cornwall is a particularly interesting area within which to examine the potential impact of the application of Greening to CAP direct payments for a number of reasons. Agriculture is important economically and socially and accounts for a relatively high percentage of employment. In addition, North Cornwall has in close proximity coastal arable land and pasture, lowland mixed farming and over 100 square miles of upland moorland. The result is a diverse range of farming types within a small area the main ones being: intensive dairying, lowland mixed farms and upland farms reliant mainly on just sheep and suckler beef.

The 2011 reform proposals are just the latest of a number of CAP reforms. It is therefore not the first time that there has been a need to make an *ex ante* evaluation of proposals. Evaluation of previous reforms is reviewed as well as reaction to the Greening Measures in the media.

The Single Payment Scheme (SPS) and its effects on Farm Businesses

The Single Payment Scheme (SPS) implemented in 2005 was designed to deliver a decoupled payment referenced against historic receipt of subsidies. The amount was either varied on an individual farm basis or was averaged across a region (Tranter *et al* 2007; Schmid and Sinabell, 2007). In England the option was chosen to use a sliding scale of the historic and regional average basis to move from 90% historic and 10% regional average in 2005 to 100% regional average from 2012 onwards. The decoupling of payments was intended to provide greater flexibility to producers to respond to market forces whilst retaining the benefit of subsidy support and thereby increase income returns (Tranter *et al* 2007).

Work by Breen *et al* (2005), showed that there were significant farm level changes as a result of decoupling from 2005. Farmers stated intentions to continue with the same enterprises and with similar levels of animal stocking. *Ex post* this was largely not the case and this shows that farmer's intentions for management alterations in response to CAP reforms cannot always be fully relied upon.

Maye *et al* (2009), argue that alteration to the SPS has had significant effects on restructuring of farm businesses. Work by Lobley and Butler (2010), argues that those farms with less opportunity for diversification and high reliance solely on agricultural income are the most affected by any alterations to the SPS.

Matthews *et al* (2006), show how after the SPS was introduced in 2005/2006, net margins for upland sheep farmers were reduced from £4749 to £2914 or £2.28 in 2004/2005 to £1.40 per lamb sold in 2005/2006. Spring calving suckler herds saw a net reduction of support with direct support reduced by 6.3%. However, losses were offset to an extent by Pillar Two payments increasing by 48.3%, assuming an Agri-Environment Scheme (AES) to Entry Level was entered into, which is supported by Acs *et al* (2010), who argue that upland farmers are more dependent on AES since the introduction of the SPS. In addition, Acs *et al* (2010), show that upland farm incomes are negative up to £16,000 without the SPS.

A detailed study by Vrolijk *et al* (2010) analyses the effects on different farm types of abolishing the SPS. The results showed that if this were to happen, 50% of crop farms, 70% of dairy farms, 30% of livestock grazing farmers and 20% of mixed farms in South West England would have a positive net farm income (NFI). Vrolijk *et al* (2010), show that farms of all types are reliant on the SPS with livestock grazing and mixed farmers the most affected by SPS reductions. Specifically to the South West, a study by Lobley and Butler (2004), researched the importance of the SPS in Devon, across different farm types. The study shows that upland farms, both Disadvantaged Area and Severely Disadvantaged Area would be severely affected economically by reductions in the SPS, with dairy farms also negatively affected by reductions. However, mixed farms and cereal farms are less reliant on the SPS.

Farmers attitudes towards previous CAP reforms

Walford (2003) argues that past research has shown that farmers have a generally negative outlook with regard to the impacts of CAP reform on their businesses. Research by Maye *et al* (2009) supports this, demonstrating there are high levels of negativity and uncertainty surrounding potential CAP reform impacts and changes to SPS in particular.

Sutherland (2011), also shows a trend in many farms in the South West and in marginal areas, to adopt 'organification' of conventional farming, with lower inputs and less intensive methods to keep costs down. Farmers also reduce the use of chemicals to reduce costs. The literature therefore suggests that Greening type measures are already being implemented by farmers, perhaps leading to a less problematic adoption of the measures than suggested by other authors above.

A more recent study by Prager *et al* (2012), which discusses the 2014 CAP reform before the proposals were outlined, takes a different view. The study argues that financial incentives are key as to whether policy is accepted by farmers. This literature suggests that farmers may choose not to comply with new measures if they are not sufficiently financially beneficial.

Edward-Jones (2006), argues that in order to provide detailed insights into reasons for farmer decision making, it is also necessary to consider personal preferences, values, and individual situations, as no two farms are the same even if they are the same farm type. The literature highlights that there could be variation in the choices of farmers to their businesses in response to the 2014 CAP reforms, within the same farm type in the same area, and these will reflect personal situations as well as profit maximisation.

Sutherland (2010) also argues that farmers will change business plans in response to CAP reform and alterations to the SPS, because the SPS is vital to many farmers and as such they will consider their actions in light of any policy changes. This is further supported by an in depth study of the South West by Morgan-Davies *et al* (2012).

Greening under the 2014 CAP Reform

The Greening Measures as defined for the study are those originally set out by the Commission (EC, 2011a). No account was taken of any proposed amendments that were under discussion at the time of the survey work. The conditions assumed were:

1. It will be compulsory to maintain 95% of permanent pasture (PP), which will include grass leys of five years or older. Any land classed as PP from 2014 must remain so, with an option to reconvert to pasture any PP converted to arable from 2012 onwards.
2. Crop diversification (CD) will be applicable on all arable land over 3ha. This measure will require there to be at least three crops on the farm, each to cover at least 5% and no more than 70% of the total arable area.
3. The requirement for an Ecological Focus Area (EFA) is applicable on at least 7% of the claim area excluding permanent pasture i.e. generally the arable area of a holding.

Greening has been the main area of debate about the 2014 reform proposals in the farming press. Stocks (2011), contends that the primary concerns appear to be the Greening measures affecting receipt of the SPS. It has been a key issue for the National Farmers Union (NFU, 2012a).

Reported farmer reaction to the proposed Greening Measures

SWUF (2012), reported that upland farmers in the South West were concerned that the five year limit before being classified as PP is too short, with many South West upland farms having much longer grass leys cycles. Evidence from Dairy UK (2011), argues that dairy farms will be adversely affected by the PP rule. The literature shows that maintaining PP will prevent farmers from exploiting arable sector commercial opportunities, and will also cause dairy farmers to plough up land more quickly to avoid the PP restriction. This is supported by Williams (2012). Williams (2012), also suggests that the PP rule will mean that farmers are less able to adopt good farming practices of following grass leys over 5 years with an arable break crop.

Musson (2012), states that CD will make it extremely difficult for smaller farmers who mono-crop each year. The increased crop types needed, probably in small areas, will lead to wasted fuel, chemicals, seeds and increased costs through contractor time, affecting the bottom line. The NFU (2012b), provide specific calculated predictions for the affects of Greening, stating that it could lead to up to £48/ha Gross Margin loss for arable farms, through a combination of EFA and CD. In addition, NFU (2012b) argue that approximately 75% of arable cropping farms in UK will be affected by Greening. House of Commons (2012), offer similar predictions, that CD would have a detrimental impact on between 30% and 66.5% of all farms in the UK.

Farmers Guardian (2011), provide an example of an 880ha farm in Lincolnshire, block cropping winter wheat and OSR, showing that this type of farm would be significantly

affected by Greening, with a third crop having to be introduced for 40ha due to CD, resulting in contractors operations being complicated. In addition, only 2% of the land is likely to be currently out of production as hedges etc., so another 5%, or 40ha, will need to be taken out of production for EFA, as existing buffer strips for ELS cannot be extended further. However impact from the permanent pasture preservation requirements would be slight. Farmers Guardian (2011), also provide an example of 100ha Welsh beef hill farm, not in the LFA. Current cropping is grass leys and winter barley, so a third crop will need to be introduced of at least 2ha to meet the CD rule. Furthermore, 2.8ha will be needed to be EFA, but the farm has hedgerows, watercourses and field corners that will amount to 3ha, so the farming business will not be affected by EFA. In this case the permanent pasture rule would also not be onerous because the PP area was largely unsuitable to be cropped.

SWUF (2012), state that upland farmers in the South West could be adversely affected both economically and structurally by EFA and CD, specifically where they grow fodder crops such as stubble turnips in long rotations. Matthew, (2012) demonstrates that the detrimental economic and structural effects of EFAs on production for farmers with arable crops will be dependent on specific landscape features, land use and which management practices are employed.

Dairy UK (2011) argues that dairy farm businesses would be adversely affected by CD, as farmers that only plant small quantities of arable crops, and for which planting three separate crop types would be impractical, may resort to growing only grass. The source also shows that CD will remove the ability to specialize in which crops are grown, which best suit specific farms and areas. A detailed study of the 2014 proposals by Matthew (2012), supports this, arguing that CD will economically affect 8% of holdings substantially, and will incur high costs for farm business which crop small arable areas.

The literature thus shows that mixed farms and arable farms likely to be affected by Greening. The literature also suggests that dairy farms are perhaps the most likely to be significantly affected economically and structurally by Greening, whilst upland grazing farms would be minimally affected.

Methodology

Data Collection

In total 24 semi-structured interviews took place, eight in each farm type category of dairy, upland livestock grazing, and lowland mixed farmers. The samples attempted to offer a range of farm size and tenure. It was necessary to make some assumptions on precise definitions where the proposals (EC 2011a) were vague. Thus, for example, it was decided that improved grass would not be counted as a crop for the purposes of CD, which appears to be the case when examining other literature below.

Semi-structured interviews were chosen as the research method for this study as they are excellent for exploring relationships between participants and their environments, as demonstrated by their use in studies, such as those by Buzinde *et al*, (2010) and Hallo and Manning, (2009). They allow for open responses with adequate opportunity for participants to expand on a subject, and are flexible to allow for a change in conversation direction. Additionally, and one of the key strengths of the method, they allow for personal opinions to be voiced and used as qualitative data, (Barbour, 2008). The rationale of this study is well established in academic investigations, as this study looks at empirical evidence of farm adjustment strategies, similar to Munton (1990), and Evans, (2009). Morgan-Davies *et al* (2012) have used interviews in a similar study to this, of farmer's responses to policy changes.

Postal questionnaires were considered as a research technique, and although this could have provided quantitative data, which is often easier to analyse, (Hoggart *et al* 2002) semi-structured interviews were still considered more suitable, not least because a superior response rate was anticipated as a result of direct participant contact. Structured interviews were also considered, again due to easier analysis, (Hoggart *et al* 2002), but it was felt this method would be too rigid, and not allow for sufficient expansion on personal opinions.

There are difficulties associated with semi-structured interviews that were taken into consideration. For example, there can be large amounts of qualitative data that can be time consuming and difficult to analyse, especially if unstructured (Mason, 2000). Also, when using interviews as a research technique, a range of ethical considerations, and the interviewer's positionality must be considered. This is to avoid offending or putting participants at risk, and as a risk to bias in fieldwork, as positionality can have a direct affect on research (Robson, 2001; England, 1994). Before the interviews participant consent was gained, they were informed of the right to withdraw, and afterwards there was a debrief. To ensure participant's anonymity and protected confidentiality in this study, none are referred to directly.

Study Area

Figure 1 below shows the approximate locations and types of all participant farms in this study.

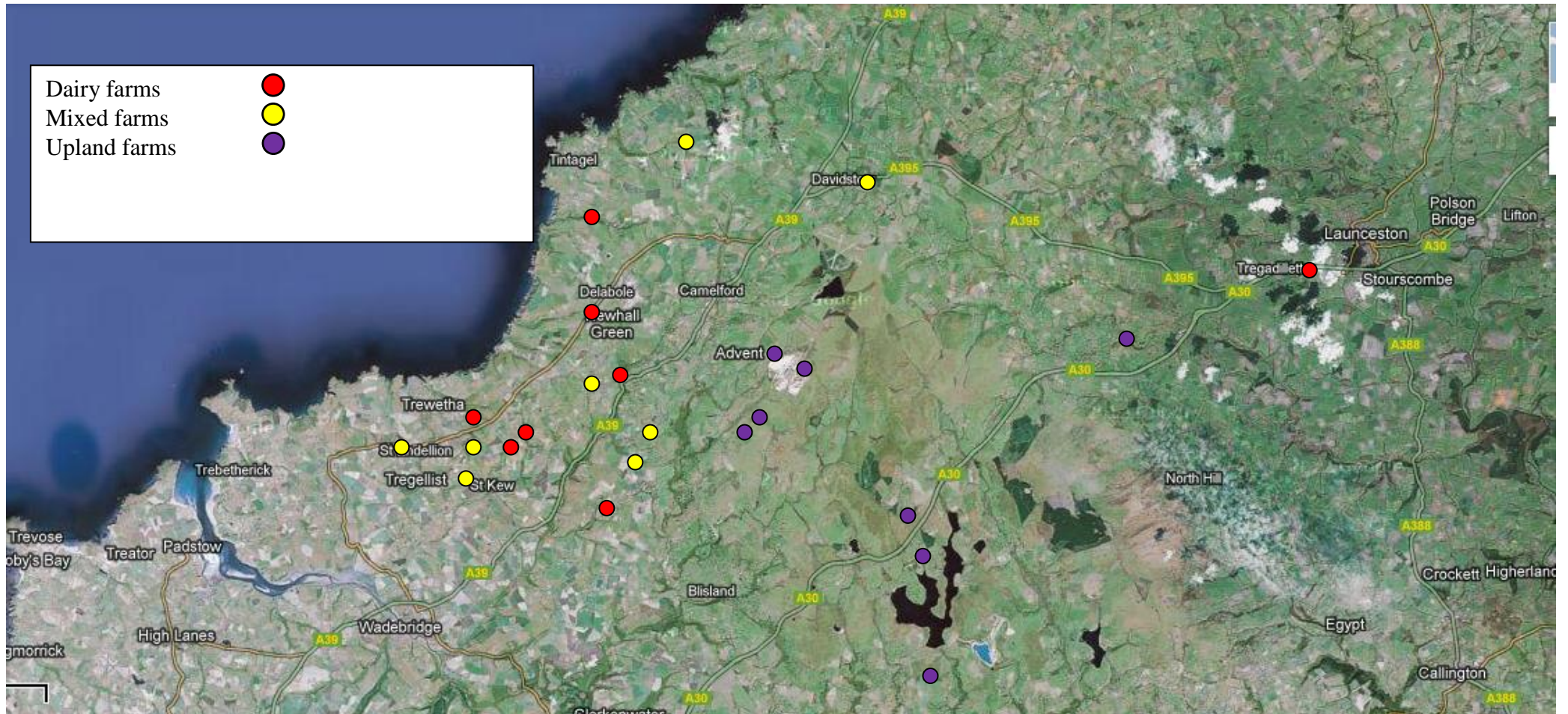


Figure 1. Approximate locations of farm businesses in this study

Cornwall has an approximate population of 535,300 and is one of the most rural counties in England, with a total area of 354,628 hectares of which around 80% is agricultural land (Cornwall Council, 2012; Cornwall Council, 2010). Agriculture is extremely important to the county, accounting for almost 30 percent of all jobs, which is double the national average (Cooper, 2012). The total amount of farmland, occupied by all participants included in this study came to a total of approximately 5,124ha, approximately 4.5% of the total amount of agricultural land in North Cornwall (113,960ha according to the University of Portsmouth (2009)).

As shown below in figure 2 the county is split into six districts, the largest, North Cornwall which covers 1,380km² and has a population of approximately 87,700 (Cornwall Council, 2012; South West Observatory, 2011).

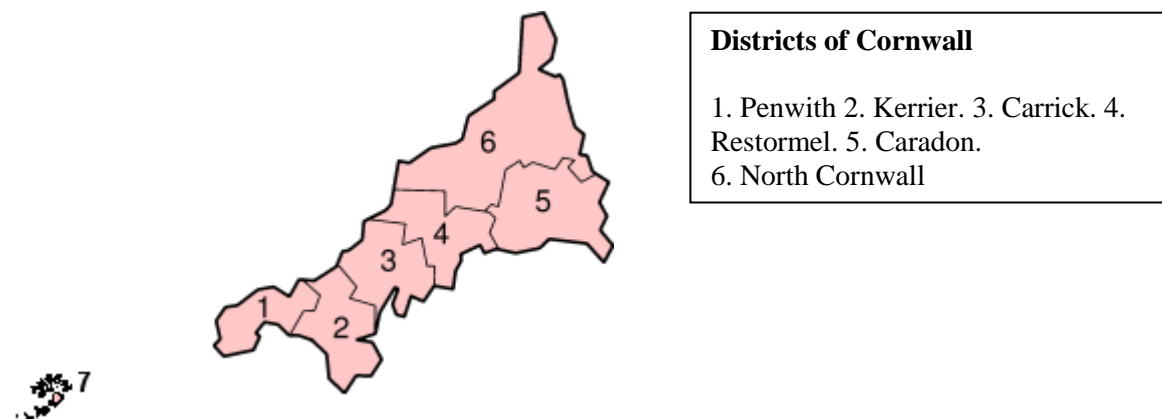


Figure 2. Districts of Cornwall.

Source: Hometown England (2012) Adapted by author

North Cornwall is generally hilly, with lowland pastures and land suitable for cereals and some early potatoes. The area also contains the northern half of Bodmin Moor, covering 208 square kilometres, which is dominated by granite tors and clutter slopes. The moorland provides upland and rough grazing for sheep, beef cattle and ponies (Natural England, 2012).

Much of North Cornwall is classed as Less Favoured Area (LFA), with Bodmin Moor and some pockets south of the Camel Estuary classed as Severely Disadvantaged Area (SDA), and Disadvantaged Area (DA) surrounding and to the north of Bodmin Moor, as well as south of the Camel Estuary (see Figure 3).

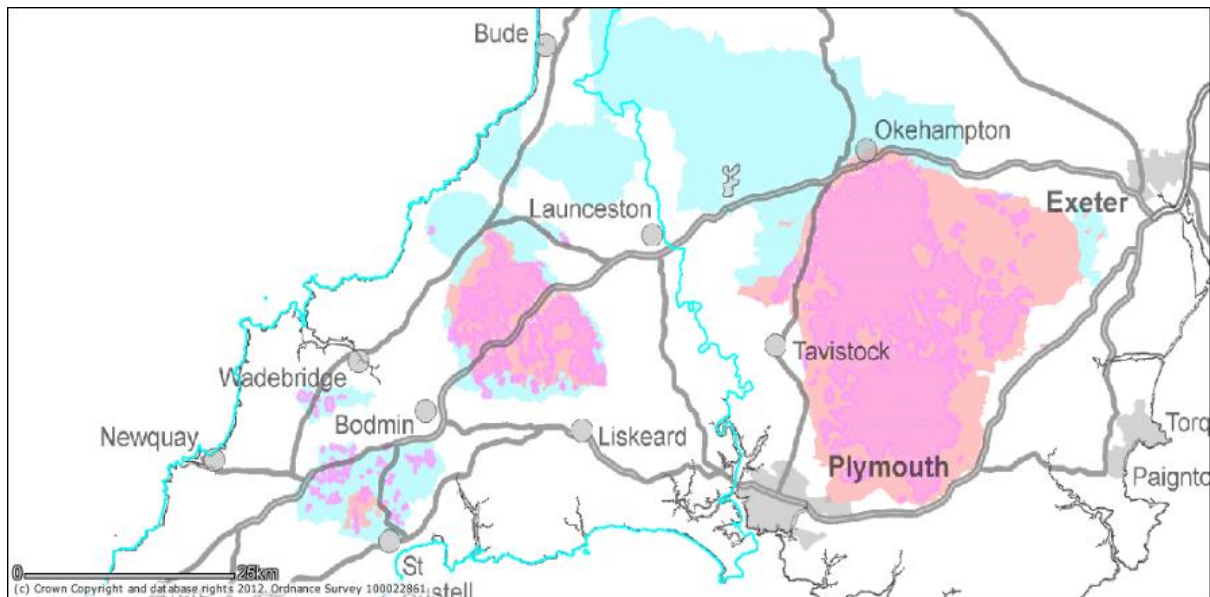


Figure 3. SDA and DA in North Cornwall. Source: MAGIC (2012) DEFRA.

The climate and soil type of the area have led to three types of farming dominating in North Cornwall. Intensive dairy units are common on lowland, predominantly grass farms due to the high rainfall, especially near the coast. There are a number of mixed farms producing mainly cereals, sheep and/or beef sucklers and finishers in the areas between the coast and Bodmin Moor. In addition, Bodmin Moor and the surrounding area is predominantly farmed for upland sheep and beef suckler herds (South West Observatory, 2004).

Results and Analysis

All participating farm businesses have been coded into Mixed (M), Upland (U) and Dairy (D) farming businesses. Farms have been allocated a number from 1 to 8, reflecting the area of the land farmed, as shown by tables 1a, 1b and 1c below. All participating farm business owned at least 45% of the land they farmed, with many owning 100%. Two farms, U3 and M5 were organic, with all other participating farms being conventional.

Table 1a.
Coded Dairy Farms

Dairy	Ha of holding
M1	405
M2	324
M3	324
M4	263
M5	173
M6	130
M7	97
M8	57
Total	1773

Table 1b.
Coded Mixed Farms

Mixed	Ha of holding
D1	486
D2	263
D3	142
D4	138
D5	102
D6	102
D7	69
D8	57
Total	1359

Table 1c.
Coded Upland Farms

Upland	Ha of holding
U1	668
U2	465
U3	263
U4	227
U5	142
U6	130
U7	57
U8	40
Total	1992

Tables 2a, 2b and 2c below give a summary of the impacts of the proposed changes to conditionality of receiving the SPS, which will be analysed in detail in the remainder of the results and analysis below.

Table 2a Summary table showing effects of Greening on Dairy Farms in North Cornwall

	D1	D2	D3	D4	D5	D6	D7	D8
<u>Ownership</u>								
Where	Pendogget	Trewalder	Delabole	St Tudy	Pendogget	Launceston	Tintagel	Trelil
Size of Holding (ha)	405	324	324	263	173	130	97	57
Organic/Conventional	C	C	C	C	C	C	C	C
Type of Farm	Dairy	Dairy	Dairy	Dairy	Dairy	Dairy	Dairy	Dairy
Percentage owned	60%	45%	45%	100%	60%	85%	90%	100%
<u>Greening</u>								
Affected by PP	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Affected by CD	Yes	Yes	No	Yes	Yes	Yes	No	No
Affected by EFA	No	No	No	No	Yes	Yes	No	Yes

Table 2b. Summary table showing effects of Greening on Mixed Farms in North Cornwall

	M1	M2	M3	M4	M5	M6	M7	M8
<u>Ownership</u>								
Where	Michaelstow	Otterham	Treveighan	St Endellion	Boscastle	Pendogget	Trelil	St Teath
Size of Holding (ha)	486	263	142	138	102	102	69	57
Organic/Conventional	C	C	C	C	O	C	C	C
Type of Farm	Cereal, soft fruit, potatoes, few beef finishers	Suckler beef, sheep, dairy, cereal	Suckler beef, sheep, cereal	Beef finisher, sheep, cereal	Beef and sheep	Finish beef, sheep and arable	Beef, sheep, considering arable	Sheep and cereal
Percentage owned	60%	100%	80%	80%	100%	75%	100%	100%
<u>Greening</u>								
Affected by PP	No	Yes	Yes	No	NA	Yes	Yes In future	Yes
Affected by CD	No	Yes	Yes	No	NA	Yes	yes	Yes
Affected by EFA	No	No	No	No	NA	Maybe	No	No

Table 2c. Summary table showing effects of Greening on Upland Farms in North Cornwall

	U1	U2	U3	U4	U5	U6	U7	U8
<u>Ownership</u>								
Where	Hawkstor	Altarnun	St Breward	Colliford	Camelford	Roughtor	St Breward	Temple
Size of Holding (ha)	668	465	263	227	142	130	57	40
Organic/Conventional	C	C	O	C	C	C	C	C
Type of Farm	Suckler beef	Suckler beef and sheep	Suckler beef and sheep	Suckler beef and sheep	Suckler beef and sheep	Suckler beef and sheep	Suckler beef and sheep	Sheep
Percentage owned	100%	100%	100%	80%	100%	60%	100%	100%
<u>Greening</u>								
Affected by PP	No	No	No	No	No	Yes	No	No
Affected by CD	No	No	No	No	No	No	No	No
Affected by EFA	No	No	No	No	No	No	No	No

Predicted Impacts of Permanent Pasture

All dairy farms in this study predict their farming businesses would be adversely affected by the PP element of Greening. The results show that all dairy farms rely on cutting large areas of silage, and aim to reseed grass leys between 5 and 10 years, as shown below.

(D1): *“Putting the wholecrop in and then rotating it with silage leys works well for us, but the grass is left longer than 5 years, more like 6 or 7, maybe 8.”*

Every dairy farm indicated that the PP rule would force them to bring the ploughing of leys forward to 5 years, requiring increased time through cultivation, and alter rotation planning unnecessarily, as leys were perfectly functional up to 10 years old.

(D5): *“I suppose we’d have to bring the rotation forward, but that would be pointless because the grass is perfectly good really, it would just be a waste of time and money,”*

The results therefore support Dairy UK (2011) and Williams (2012), who state that dairy farms will be adversely affected by the PP rule, and the PP will cause dairy farmers to plough up land more quickly to avoid the PP restriction.

Five out of the seven conventional mixed farms in this study predict that they would be adversely affected by the PP proposal. M5 as organic was not affected. As shown below, PP would interrupt proven effective rotation plans, disrupting established methods of maintaining the condition of the ground. In addition it would involve ploughing grass leys earlier than planned.

(M2): *“Well I put that down to frustrating because well basically I would plan to reseed about every 10 years, and do cereals for a couple of years to clean up and get rid of any of the weeds and that,”*

The only mixed conventional farms not to be affected by PP were M1 and M4, which both had PP and arable ground, but did not have any improved grass leys for more than two years. As such, they predicted that PP would not have any effect on their farm business:

(M4): *“We do reseed grass, but it’s always on fields that are in rotation as arable, We have got the whole valley of PP, but we wouldn’t plough that anyway”*

The majority of mixed farms who would find their management adversely impacted by PP, and as such this study comes to opposing conclusions to those of the Farmers Guardian (2011).

The results of this study indicate that PP will have very little impact on the management of upland grazing farms, with only U6 affected by this element of Greening.

(U6): *“We’d either have to plough early or rent ground for silage maybe. But the majority of our land, I can’t see it would have much of an effect on us really,”*

The evidence of the survey supports the conclusions of SWUF (2012), that where upland farmers in the South West do plough grassland, the five year limit of PP is too short a time period.

Every other upland farm stated that PP would not affect or have very minimal affects on their farm business as they did not grow any crops and wished to retain all their PP. It was stated that running sheep on the ground over winter provided enough improvement to grass without cultivation. In some cases it was shown that fields were ploughed in very long rotations, 10-25 years, but if these fields needed improvement in future this could be achieved through other methods:

(U3): *“we have ploughed them, 20 years ago, but I renewed all the cutting fields on a rotation,.....I’d probably just stitch seed them or something, I’ve got a hinebok harrow, but I reckon I’d surface scratch them, cos that wouldn’t make any difference would it.”*

The lack of predicted impacts by upland farmers means that the results disagree with the in-depth study of upland farmers in the South West, by Morgan-Davies *et al* (2012), as they state that of all hill farmers in the region, 53% predicted to make major management changes from 2008-2013 because of policy reform. In this way the results do support findings of a study specific to the South West by Lobley *et al*, (2012) which has indicated that structural and management changes will be minimal for upland farmers in the South West due to policy change.

Predicted Impacts of Crop Diversification

Five out of the eight Dairy farmers in this study believe that CD will negatively affect their farming businesses. Three farms will not be affected. D8 already grows more than three crops as it has an arable enterprise accompanying its main business of dairying. D3 and D7 will not be affected, as they only grow grass. But the other five Dairy farms affected were concerned and felt it would result in unnecessary complications:

(D5): *“that would still mean we’d have to grow something else. I suppose we could put in a wholecrop, it would be more work that we don’t need really.”*

(D4): *“we grow what we need to, so having to put in two other crop types would just be totally useless for us..... we couldn’t do all the operations in one go, it would be more diesel and time,”*

The farmers in this study show they will adapt to CD by planting additional types of crops, whereas House of Commons EFRA Committee (2012) predicted that CD will result in just grass being grown.

All conventional mixed farms in this study except M1 believe CD will affect them. However the extent of this varied. M3 believed that the management effects would be minimal for them.

(M3): *"I think it would just make us rearrange things a bit time wise, and some years we would be growing a crop we didn't want but I don't think any of it would be wasted."*

Conversely, for M2 and M8 as well as the other mixed farms, the impact would be significantly more, involving the work spread over a longer time period, unwanted crop types planted and more cultivation involved.

(M2): *"its nice to have it all similar so that it all gets dealt with, ploughed at the same time, sprayed at the same time, harvest it all together, just for ease of management, which that (CD) would disrupt"*

The significant impacts of CD on dairy and mixed farms, as shown above might mean that the Greening has more impact than changes connected with earlier reforms that Tranter *et al* (2007), found had little impact on farm business management. However not all authorities agree and Vrolijk *et al* (2010), observed that farmers did change their cropping patterns after previous CAP reforms. In a similar vein, the evidence from the survey shows that farmers will make significant management changes to keep receiving the SPS, which fully concurs with work by Offermann *et al* (2009), which argues that farmers are reliant on the SPS and responsive to it.

None of the upland farmers in this study predict any effects from CD or EFA on their farming businesses. As shown below, this was because none of the upland participants grew any crops. In the past some had grown stubble turnips, but had moved away from this practice now.

(U4): *"most of the moorland chaps if they've got a bit of lowland grass it's in grass, whether it's for cutting for a bit of early grub, or improving the stocking at weaning time and that"*

This contradicts the conclusions of SWUF (2012), who state that EFA and CD could adversely affect upland farmers in the South West structurally.

Predicted Impacts of Ecological Focus Area

Dairy farms D5, D6 and D8 would be affected by EFA, by having to take land out of production, meaning a loss of output from that land which would have to be replaced, or the remaining ground would be worked harder with higher input costs.

(D5): *"we'd lose useful ground that I'd have to replace by buying in"*

(D6) *"people will just push harder on the ground they've got left....to make up for that 7%."*

D1, D2, and D4 would not be affected by EFA as they are confident that hedges and other eligible areas on the farm would already equate to at least 7% of the arable area. D3 and D7 would not be affected by EFA as they do not grow any arable crops.

None of the mixed farms in the study would be affected by EFA:

(M6): *“Well we’ve got several hedges and they’re fairly wide hedges, so if they were to take anything like that, it wouldn’t be as bad.”*

The differing results highlighted in this study, which are dependent on existing landscape features and geography, supports Matthew, (2012) who demonstrates that the detrimental economic and structural effects of EFA’s on production for farmers with arable crops will be dependent on specific landscape features, land use and which management practices are employed.

The evidence from the survey shows that of the 15 farms in this study which crop arable areas, only 3 will be affected by EFA. This largely opposes work from NFU (2012b), who argue that approximately 75% of arable cropping farms in the UK will be affected by EFA.

A case study by Farmers Guardian (2011) predicted that only 2% of the land is already out of production as hedges etc., so 5% of land in arable production would be needed as EFA. The results from this study disagree with this evidence, indicating that many farmers will not be affected, as there are large hedges or other eligible areas. However, it is noted that this is likely to be influenced by the style of Cornish hedges, which are wide, and the geography of the area, which contains steep sided valleys.

None of the upland farmers in this study predict any effects from CD or EFA on their farm businesses, due to the nature of their enterprises involving no cropping and few improved grass leys.

(U4): *“all of our ground is in grass anyway, some of its moorland, high moorland then, and some that is below the moorland line so I don’t think that will affect us at all”*

This evidence opposes the conclusions of SWUF (2012), who state that EFA and CD could adversely affect upland farmers in the South West economically.

Conclusions

Dairy farms appear likely to be most affected by the proposed Greening measures of the 2014 CAP reform. Both the PP and CD elements of Greening are likely to have a significant impact on their management, along with lesser effects from EFA. Dairy farms with improved grass leys and which grow one arable crop are predicted to be the most affected, and as such are the most effected farm enterprise type overall.

This study shows that mixed farms are the next most affected type of farm business with several adversely affected by PP, and CD. This study shows that specifically, mixed farms that have longer term improved grass leys in their rotations and which

only currently grow one or two crop types are the second most affected farm and enterprise type overall.

Work by Edward-Jones (2006), demonstrating that that farmers will change their farming business as necessary in order to receive maximum benefit, economically or in other forms, supports the conclusions of this study. Broadly evidence from this study supports the overall conclusions of the House of Commons EFRA Committee (2012), who argue that Greening proposals will make it more difficult for farmers to manage their farms flexibly and profitably. However, this study does not support this conclusion with respect to upland farmers, who are predicted to be the least affected of the three farm types with minimal effects from Greening in general, largely because they do not plan to plough any of their permanent grassland.

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