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**The State of Agriculture in Devon:
A Report for Devon County Council**

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The State of Agriculture in Devon
A Report for Devon County Council

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The views expressed in this report are those of the authors and are not necessarily shared by other members of the University or by the University as a whole or Devon County Council.

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Executive Summary

Introduction

The state of agriculture has received considerable attention in recent years following the high point of the 1990s, the deep economic downturn affecting the industry and, more recently, the severe impacts resulting from the outbreak of Foot and Mouth Disease (FMD) in 2001. This report, commissioned by Devon County Council, contributes to the ongoing debate within Devon and nationally regarding the current state of agriculture and the implications of CAP (Common Agricultural Policy) reform.

The specific objectives of the report are to:

- provide a sound information base on the county's farming industry in order to inform the Council of its current structural and economic position;
- establish the overall economic impact of the FMD epidemic on the county's agriculture, and its main implications over the longer term;
- estimate the financial and structural impacts of the revised Mid-Term Review of the CAP on the county's agriculture;
- provide a concise, though comprehensive, briefing on the key issues for consideration in the formulation of rural policy in the county and beyond;
- advise the Council on the most pressing areas for policy development, including current and emerging key issues, areas of particular difficulty and evidence of the industry's success in adapting to change.

Farming in Devon

Devon is predominately a county of livestock farming where dairying, lowland cattle and sheep and Less Favoured Area (LFA) cattle and sheep farms account for most farms and the bulk of land. Within the county, however, there is a complex and variable pattern of farm types and land use. West Devon for example, is dominated by lowland and LFA livestock farming, the latter which is absent in the middle and east of the county. East Devon and Torridge both have significant dairy sectors accounting for close to half of all farmed land while Teignbridge is characterised by a very small dairying sector. In terms of farm size, while the county has fewer large farms of over 100 ha compared to England as a whole, there is considerable variation between the districts with 70% of holdings in Teignbridge being less than 20ha compared to 56% in North Devon and 59% in Torridge.

Within the county as nationally, farm labour is in decline. Methodological changes in the June Agricultural Census increase the difficulty of tracing changes over time but the numbers of farm workers are estimated to have reduced from just over ten thousand in 1980 to six thousand in 2000. The total number of farmers on the other hand has remained relatively stable. Although it is not possible to directly measure the impact of FMD on farm labour it is estimated that the total farm labour force in Devon has declined in the region of 4% between 2000 and 2002.

The impact of an outbreak of FMD of the size experienced in 2001 would have been severe at any time. However, in 2001 the industry was already going through a very difficult economic situation, entering its fifth year of recession, and many businesses were

not well placed to withstand the additional problems imposed by the disease. Furthermore, in addition to the direct and indirect economic impacts of FMD, the disease obviously had a considerable personal impact on farmers, their families and those involved in disease control measures.

FMD had a differential economic impact varying by farm type and circumstances (e.g. within Infected Area, subject to Form D movement restrictions, confirmed case). In general terms the effects were almost entirely negative on 'non-culled' farms, because of (a) the direct costs of bio-security and a less than optimum efficiency in the general use of resources; (b) the implications, short and longer term, of the near-standstill in business activities which many farms experienced; (c) the short and medium term effects of the lack of efficient markets for livestock and the longer term price implications of disrupted and suspended trade arrangements.

For culled farms, on the other hand, the short to medium term economic impact was, at worst, neutral, though the social impact was much more variable and, in some cases, of considerable duration. This is so because (a) the compensation levels were, on the whole, generous; (b) many farm families were able to gain some off-farm work, often associated with the FMD clear-up operations (it is estimated that this generated an average of £6,815 on mainly cropping farms and £20,226 on Hill Livestock farms); (c) there was no evidence of rapid re-stocking driving up the prices of breeding stock, for example, unduly; (d) there was considerable anecdotal evidence of a general determination among such farmers not to get into debt again, by re-building their businesses slowly.

Beyond the financial and economic impacts of FMD on Devon's farms, there is evidence that it exacerbated a number of worrying trends among livestock farmers. Research conducted in the Hatherleigh-Holsworthy area in the wake of the outbreak revealed the considerable personal pain caused by the disease and associated control measures:

“You know, we felt it was bad at the time. If only we'd known... You know, I mean, there were people in tears and one thing and another, but I mean, it wasn't no good getting like that. I mean, I knew I didn't have it but you dreamt you had it every night, and every morning when you looked at everything it was a greater period of stress, you know, than if you did have it. Cos once you had it, wasn't it, you knew then. I mean, obviously you still had the business of disposing of it all of it, but again, I mean, we saw that, it was only just up the road.....so it may as well have been ours they were putting up there really.”

Many farmers and their families have only survived through a combined strategy of working longer and harder, 'belt tightening' and risk aversion. For instance, one family had sold and not replaced a car, cancelled satellite television and then stopped paying into their pension scheme as a means of short term survival. Many have also withdrawn from social contacts as a result of a strategy of working longer, harder hours on the farm in order to survive. This is seen in a decline in formal civic participation, reductions in other activities which involve getting off the farm, lack of knowledge of non-farming neighbours and generally increased isolation. This response can be associated with a vicious downward spiral leading to further isolation, lack of awareness of the successful and less personally costly strategies adopted by others and a movement away from the networks of association that are frequently important in successful business strategies. As one local minister reported: “There are a lot of people in these communities who fall by

the wayside, and one of the problems with depression is that people tend to isolate themselves”.

Despite the very real difficulties of recent years there is evidence that farm incomes are beginning to recover, albeit from a very low base. The latest results from the region's Farm Business Survey show that there was a substantial improvement in DEFRA's lead indicator of farm performance, Net Farm Income (NFI), during 2001/02. The NFI of 'all farms' doubled to £14,700 and most farm types showed improvement with the exception of *mixed* systems. Moreover, the projected level of NFI for the year to March 2003 shows a further overall increase, up by about a quarter to an average of £17,600 per farm. The notable exception to this are *dairy* farms, since the last year has seen a further decline in milk price and this is reflected in a projected drop of 25 per cent. The situation for Devon farms (excluding horticulture) is very similar to that for the region as a whole with a project projected NFI for 'all farms' for the year 2002/03 at £17,561. This represents a 45% increase, reflecting the greater incidence of lowland and LFA cattle and sheep systems, both of which are expected to have seen very substantial improvements in their income levels.

CAP reform

A key issue facing the agricultural sector of Devon is the imminent reform of the CAP. The Mid-Term Review, initiated as part of the Agenda 2000 agreement on CAP reform, presents what are arguably the most radical proposals for reform since the 1960s. For a long time now CAP analysts have pointed to the distortions and environmental impacts created by a system that effectively coupled the support a farmer received with production decisions. In many ways the MTR proposals aim to strengthen and deepen the Agenda 2000 reforms by further reducing intervention prices and strengthening the CAP's rural development policies (also known as 'Pillar two' of the CAP). While Agenda 2000 and the earlier MacSharry reforms introduced a degree of partial decoupling via direct support payments, the MTR proposals go further by suggesting that all direct payments to farmers are converted into a decoupled 'single income payment' to be calculated on the basis of average area (of supported regimes) and entitlement to direct payments in an historic reference period (2000-02). Although the payments are to be decoupled from production decisions they are effectively recoupled to a basic land management requirement (cross-compliance) and so will continue to have impact on land management decisions and inevitably, production.

Alongside proposals for a decoupled SIP the MTR proposes the introduction of an EU-wide system of degressivity and modulation. Although sometimes used interchangeably these terms represent two distinct processes. *Degressivity* refers to the progressive reduction in the SIP. The Commission has proposed a 'tax band' approach with the rate of aid reduction being differentiated according to the amount of direct payments received. Farmers receiving less than €5000 would be exempt under the existing proposals, those receiving €5000-50,000 will face a 12.5% reduction by 2012 and farmers receiving in excess of €50000 will face a reduction of 19%. *Modulation* refers to the 'recycling' of funds saved through degressivity into rural development payments. The proportion of modulated funds available for rural development will rise progressively to 6% in 2012 with the remaining funds being made available to finance future market reforms. Although modulated funds only represent a small proportion of total rural development spending, there will still be a lower budget for rural development.

In order to explore the implications of the MTR for farms in Devon an economic modelling exercise was undertaken to identify the impact of each of the main elements of the reform proposals. The results of this exercise indicate that the MTR proposals will have a differential impact on the districts of Devon in the longer term. However, the MTR proposals, particularly the implementation of the SIP, will be beneficial to all districts. Any gains in farming incomes as a result of the MTR proposals will be cumulative over the next decade. If these are considered, *based on the most optimistic assumptions*, Devon could benefit by up to £77.6 million if the predicted dynamic changes resulting from the introduction of the SIP and, importantly, recycled modulated monies and treasury match funding occurs. In terms of districts, Mid Devon is likely to receive the greatest absolute and relative cumulative benefit at £13.6 million closely followed by Torridge at £12.9 million and North Devon at £12.6 million. If recycled modulated funds do not return to Devon farms in the form of rural development payments along with matched Treasury funding the gains would be considerably lower.

In terms of farm type, dairying (assuming positive outcomes from milk regime reforms) and lowland cattle and sheep farms are likely to be the greatest beneficiaries from the MTR proposals with each sector gaining in excess of £22 million. Conversely, LFA farms are least likely to benefit although their farming incomes still increase by nearly £6 million. With the exception of Exeter, Teignbridge is likely to receive the least from the MTR proposals on account of its relative small area. However, since this district is less reliant on dairying, if changes to the dairy regime influence the incomes in this sector more severely, Teignbridge will be least affected.

The gains predicted by the modelling exercise for Devon are largely in line with Defra's own estimate of an average 16% increase in NFI. However, the complexity of modelling the farm level impact of the MTR should be borne in mind. It should also be noted that the beneficial impacts are highly sensitive to the receipt of rural development funds and past research suggests that these are not distributed evenly by farm type. Moreover, the impact at the individual farm level will vary according to a range of agricultural and socio-economic factors not easily modelled. If support payments were to be decoupled in the way suggested in the MTR draft legal texts farmers would only need meet cross-compliance conditions in order to receive their decoupled Single Income Payment. It is relatively easy to envisage that for some older farmers, lacking a successor but unwilling to leave farming, the response will be to continue to occupy the 'farm' while running a very small agricultural enterprise and using the SIP as a retirement fund. We are not able to predict the scale of such a response but if it was widespread it would clearly have negative implications for ancillary services.

Conclusions and recommendations

The original MTR proposals have already been formally modified once and the final reform package expected to be agreed this summer will differ again from the draft legal texts of January 2003. However, if the reform proposals published in January were implemented the results of the modelling exercise undertaken for this report suggests that in the longer term the impact would be largely positive on farm incomes and that Devon could benefit by over £70 million. This projection though is subject to the usual caveats regarding economic modelling exercises and is highly sensitive to assumptions about

receipt of recycled modulated funds in the form of rural development payments and UK Treasury match funding.

It is inevitable that the MTR will speed up agricultural restructuring particularly if incomes decline in the short to medium term. Significant short term restructuring is perhaps unlikely given the relatively fixed nature of capital assets but in the medium to longer term, as farmers face investment decisions, the sector will undergo restructuring. If the MTR radically changes the policy framework within which farmers operate then their actions in the past may no longer be a useful guide to their behaviour in the future. However, well established trends such as the reduction in hired labour and the increased use of contractors seem likely to continue.

One of the aims of the MTR is to strengthen and broaden the scope of rural development under the CAP. The share of funding captured by Devon farmers will be an important influence on future farm income levels. Although Devon has a good share of the region's agri-environmental and rural development spending, take-up of the latter has been poor. Anecdotal evidence suggests that application process is daunting but there is also a lack of facilitation compared to the way in which Objective 5b operated for example.

Recommendation: Devon County Council should explore opportunities to develop a facilitation service to improve the uptake of CAP funded rural development initiatives.

The regional delivery plan for the Sustainable Farming and Food Strategy currently being drawn up will, among other things, address issues relating to rural development and agri-environmental schemes. Two important issues flow from this for Devon County Council. First, there is a need to liaise closely with the SFFS regional team regarding delivery plans. Devon Strategic Partnership's proposed Rural Renaissance bid to the RDA needs to be drafted in such a way as to dovetail with the regional strategy.

Recommendation: Devon County Council should deploy staff resources to facilitate synergy between the regional and county delivery mechanisms for the SFFS.

Recommendation: Devon County Council should proof its current programmes for rural support and regeneration against the emerging priorities of the SFFS.

A second issue is with regard to indicators. Of the indicators surrounding the SFFS developed by DEFRA, only approximately a third are readily available at a regional and sub-regional level. There is currently a national DEFRA consultation on data requirements.

Recommendation: Devon County Council should investigate this issue and decide whether any particular indicators could sensibly be developed within the county. Given the likely spatially differentiated impact of CAP reform, the development of sub-county indicators to monitor the impact of CAP reform and related up and down stream impacts should be considered.

It follows from the previous recommendation that there is a need to better understand the wider implications of CAP reform and the agricultural restructuring that is likely to follow. Changes in labour use, input and machinery purchases can all have an impact on rural economies and communities.

Recommendation: Devon County Council should consider the wider, knock-on effects of CAP reform and agricultural change on rural economies and communities.

Introduction

This report has been prepared as a contribution to the continuing debate within Devon and further a field on the current state of agriculture, its future and the appropriate policy interventions that may be required if there is to be a sustainable future for the farming sector.

Devon County Council gave us a wide ranging brief to overview the state of farming in the county. The agricultural sector in Devon, in common with the UK as a whole, currently faces a number of significant challenges including:

- changes in food marketing chains;
- increased consumer awareness and concern for food quality;
- the political imperative for eastwards enlargement of the European Union;
- the need to reform the CAP;
- the integration and impact of continuing technical innovation;
- the integration of domestic support policies with the requirements of world trade under the WTO;
- the requirement for production systems more in harmony with environmental and rural development objectives;
- the changing governance of agriculture; and
- the lasting concerns arising from the FMD epidemic which so severely affected the county during much of 2001.

In this context the main aim of our research has been to provide a comprehensive 'baseline' on which evidence-based policy development and lobbying may be based. This will feed into a number of initiatives within the county, including the current work of the Devon Strategic Partnership Rural Task Group and its likely successor, the Devon Rural Network.

The specific objectives of the report are:

- to provide a sound information base on the county's farming industry in order to inform the Council of its current structural and economic position. This will include identifying the key trends shaping Devon's agriculture over recent years and, where possible, the principal drivers of those trends and the provision of statistics dis-aggregated to district level;
- to establish the overall economic impact of the FMD epidemic on the county's agriculture, and its main implications over the longer term;

- to estimate the financial and structural impacts of the revised Mid-Term Review of the CAP on the county's agriculture;
- to provide a concise, though comprehensive briefing, on the key issues for consideration in the formulation of rural policy in the county and beyond.
- to advise the Council on the most pressing areas for policy development, including current and emerging key issues, areas of particular difficulty and evidence of the industry's success in adapting to change.

Chapter One: Drivers of agricultural and policy change

Introduction

Farming has received an unprecedented amount of attention in recent years, stemming initially from BSE, then the impact of the economic downturn after 1996/97 and later the outbreak of FMD. It is also widely recognised that farming change potentially carries with it a range of implications for rural economies, the environment and rural communities. Farmers and their families are often portrayed as simply reacting to dominant policy forces but as this chapter outlines, there are in fact a wide range of drivers of contemporary agricultural change. While it is not possible in this project to make causal links between specific drivers of change and any particular type of agricultural adaptation, a review of the range of drivers provides a useful context for the remainder of the report. Agricultural drivers operate at a variety of levels and of course combine in different ways at the farm level. This presents analysts with an additional challenge. The exogenous drivers of change often receive most attention but these drivers are mediated at the farm household level, combining with internal household drivers to produce complex patterns of behaviour. Whilst not denying the significance of exogenous drivers, this chapter argues that a full appreciation of past, current and future agricultural change can only be gained through an understanding of farm household processes.

Contemporary forces of change¹

A wide range of factors are driving contemporary farming change. The policy framework, market forces, technology and knowledge transfer are recognised to be driving structural change in agriculture (Entec 2000). In addition, the disruption caused by unexpected events, such as FMD, can drive agricultural change, sometimes accelerating existing trends and sometimes stimulating a change in trajectory. Drivers of agricultural and policy change operate at a number of different scales. Or, more precisely, they originate at different scales and recognition of these differences can be useful from a policy perspective.

There are clearly a range of global drivers subjecting agriculture to the forces of liberalisation and globalisation operating at an international scale. The growing global market for grain and meat products adds to pressures to realise economies of scale and improve efficiency within UK agriculture. In addition, further liberalisation and globalisation of agricultural trade and production is likely to result from the new round of WTO (World Trade Organisation) talks opened on 2001. Most commentators concur that an agreement will finally be reached that will see the further decoupling of agricultural support from production decisions. For Devon farmers the main impact of a new WTO agreement will be to drive further change in EU and domestic support arrangements, reshaping the policy framework within which farm business decisions are made.

It is the changing EU policy framework that is perhaps the most readily recognisable driver of agricultural change. Key drivers of restructuring stem from the on-going reform agenda and slow, partial shift towards rural development and agri-environment funding but also the promotion of the so-called 'European model of agriculture'. In part this reflects the influence of the WTO agenda and the likely future shift in funding from 'pillar one' to 'pillar two' of the CAP represents a further attempt to develop a 'WTO-proof' CAP. At the same time, internal EU developments, notably eastward enlargement

¹ This section draws on Lobley et al 2002.

are intensifying budgetary pressure and providing an additional incentive to provide direct payments decoupled from production. The Agenda 2000 reforms marked an important step in this direction, establishing a coherent framework for the second pillar, although in reality there was little transfer of funding from pillar one. The Mid-Term Review of the CAP on the other hand, could provide a significant stimulus in this direction. Indeed, the key aspects of the latest proposals (published in January 2003) are the introduction of a single income payment (SIP) which is decoupled from production, an interlinked system of degression and modulation (which would see a progressive but limited reduction in direct payments with some of the funds saved being recycled – modulated – into rural development spending), environmental cross-compliance and a broadening of the scope of the existing rural development regulation (see Chapter 4 for more details).

In addition to the CAP and WTO policy drivers is a strong domestic policy driver that emerged in the aftermath of the Foot and Mouth outbreak. The creation of DEFRA in June 2001 saw the close policy integration of agricultural, rural development and environmental responsibilities of the former MAFF with the environmental and rural development responsibilities. By retaining food within the department with lead responsibility for rural policy, policy integration within the agro-food chain remains an important policy goal and this is highly relevant to the post-FMD agenda for sustainable agriculture. The new DEFRA set up a number of FMD inquiries, one of which - the Commission on the Future of Food and Farming chaired by Sir Don Curry - focussed exclusively on a future strategy for sustainable food and farming. The report and the subsequent Sustainable Farming and Food Strategy (SFFS), launched by Government in December 2002, provide a powerful domestic policy agenda that now sits alongside the CAP driver.

However, if the formation of DEFRA improved the prospects for a more integrated and co-ordinated delivery of rural policy, some other changes arguably made the task more difficult. For example, the new Department of Transport, Local Government and the Regions, whilst retaining responsibility for local government and town and country planning, ceded responsibility for the Regional Development Agencies to the Department of Trade and Industry. No less than four central government departments (DEFRA, DTI, DTLGR and DCMS) have responsibilities of central significance to rural economic development. Thus the formation of DEFRA, whilst clearly a more radical step than the incremental shifts that might have occurred in the absence of FMD, retains a rather narrow focus on agriculture. DEFRA's broader remit, both in terms of its environmental focus and rural development under the terms of EU's Rural Development Regulation, remains largely rooted in the land-based sector. Rural development is equated with diversifying agriculture rather than with any sense of a highly diverse rural economy and society in which farming per se is no longer the economic lynchpin (Winter 2003). However, the extent to which the SW RDA is involved in the regional delivery of the SFFS – both as co-chair of the regional delivery group and as potential financier through Rural Renaissance - suggests that this narrow focus on farming is now changing quite fast.

The fact that the SFFS is being delivered at a regional level with the prospect of sub-regional delivery partners is a major policy development. For the first time in the post-war period there is now a sense that sub-national policy imperatives for agriculture and food can be developed. Thus the SW delivery group is developing ideas for a regional farm advisory service. A proposal has been made, and is being taken forward, for a Regional Research Priorities Board to mirror and shadow the new national Board.

Of course, it would be a mistake to exaggerate the extent of the new-found subsidiarity. The lion's share of public sector funding in rural areas will continue to flow from CAP Pillar one commodity payments (or from de-coupled entitlements) for some time to come. Moreover, the SFFS contains a number of strands some of which are easier for sub-regional initiatives to engage with than others. In particular, a close reading of the Strategy suggests that it is operating with an implicit tripartite model of farmers and farming:

- Farmers as producers of food commodities in a global free market.
- Farmers as multifunctional – producers of public goods for which there is not an existing market.
- Farmers as land-based entrepreneurs within a diversified rural economy.

Consequently many of the Strategy's recommendations flow from this tri-partite model. There is a supra-national policy agenda to do with WTO compliance and CAP reform, in particular a strong articulation of the principles of decoupling and the removal of trade barriers. The multifunctionality model is represented in policies to reward farmers for the provision of public goods through, for example, agri-environment schemes. There is an increasing sense that these policies are best dealt with at a sub-national level. Each region has its own Regional Rural Development Plan within which agri-environment schemes are delivered. However, the design of agri-environmental schemes remains a national responsibility. It is possible, some would say likely, that further regional discretion will be introduced in the future. Thirdly, the facilitation of diverse rural economic development through easing of planning restrictions, the encouragement of regional/local food initiatives, renewable energy, and so forth implies a high degree of both regional and sub-regional initiative.

Finally, the role of farm level drivers should not be underestimated. Farm level drivers are particularly complex because it is here that the effects of other drivers are mediated as well as being a source of internal farm household drivers. Farm income is perhaps the most readily observed driver at the farm level. The latest results from the region's Farm Business Survey show that there was a substantial improvement in DEFRA's lead indicator of farm performance, Net Farm Income (NFI), during 2001/02, albeit from a very low base (Table 1.1). The 'all farms' NFI doubled to £14,700, and most farm types showed improvement with the exception of *mixed* systems. Moreover, the projected level of NFI for the year to March 2003 shows a further overall increase, up by about a quarter to an average of £17,600 per farm. The notable exception to this are *dairy* farms, since the last year has seen a further decline in milk price and this is reflected in the projected drop of 25 per cent.

These results are based on the regional sample, of course, and it is known that the frequency of the different farm types within Devon differs in significant ways from the overall regional pattern. The final row in Table 1.1 shows the appropriate 'all farms' NFI on Devon farms excluding horticulture. The data indicate that although the projected NFI for the year 2002/03, at £17,561, is very similar to that for the region as a whole, the recovery has been more marked in Devon with NFI estimated to have risen 45 per cent. This reflects the greater incidence of cattle and sheep systems, both LFA and lowland, both of which are expected to have seen very substantial improvements in their income levels.

Table 1.1 Changes in net farm income in Southwest England and Devon, 2001/02 and 2002/03

Farm type	NFI 2000/01 £ per farm	NFI 2001/02 £ per farm	% change	Proj NFI 2002/03 £ per farm	% change
Dairy	11,700	27,700	136	20,600	-25
LFA cattle and sheep	3,100	5,700	84	14,700	158
Lowland cattle & sheep	-4,400	-900	(a)	7,500	(a)
Cereals	0	1,300	(a)	3,000	132
Mixed	14,000	12,300	-12	34,600	182
All farm types (Southwest)	7,000	14,200	103	17,600	24
All farm types (Devon)(b)	(c)	12,125	(c)	17,561	45

(a) % change omitted because of negative income

(b) Excluding horticulture

(c) Not calculated

While this recovery is extremely welcome, the farming recession appears to have had far-reaching effects in terms of both the retention of the current generation of farmers in the industry and in its influence on the career aspirations of many of the potential next generation. While it may be argued that, over the long term, the industry needs fewer people working in it, there are evident social and economic consequences which an adjustment on a significant scale, still to be worked through, will bring.

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. Errington and Gasson 1993; Potter and Lobley 1993), suggests that family events and processes such as births, marriage, ageing, succession and retirement can trigger change in agricultural businesses.

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 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 can't bring himself to fully let go of the reins (see for example, (Lobley and Potter 1998; Errington and Lobley 2002) Succession can have a powerful influence on the development trajectory of a farm business. The identification of a successor can act as a trigger for business development, and the 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). Indeed, Savills suggest that "the existence of a successor within the family farm business is a key variable in determining the course of future structural change" (Savills 2001).

The process of retirement from farming can also trigger restructuring of 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, extensification and a reduction in farm scale with land being sold but also increasingly let on an FBT (Farm Business Tenancy) or put out to contract.

Summary

As this brief review has illustrated there are a wide range of factors driving farming change. Many operate at different levels and combine together at the farm level although predicting the response at the farm level is far from straightforward given the role of internal farm household drivers. In Devon the main drivers of recent change have been the farming recession and foot and mouth. Economic logic would have predicated that the combination of these would have led to the loss of many farms although as later chapters will show, existing data does not support this, suggesting again, that in order to understand farm household behaviour it is necessary to move beyond a purely economic analysis.

Chapter Two: The nature of agricultural change in Devon: evidence from the June Census and Farm Business Survey

Introduction

This chapter draws largely on June census and Farm Business Survey data to describe the current characteristics of farming in Devon and the pattern of agricultural change over a number of years. Before addressing the nature of farming in Devon it is important to recognise some of the limitations of the use of agricultural census data. The June census of agricultural and horticultural holdings is the main source of trend data on holding size, land use, labour inputs, etc. Although commentators frequently refer to changes in the number of farms of different types and sizes, it should be noted that agricultural census data is collected at the holding level and that a farm and a holding are not necessarily synonymous (i.e. a farm business may consist of several holdings). Although several attempts have been made to correct census data to reflect multiple holding farms, it is widely recognised that agricultural census data fails to capture the true, and increasingly complex, nature of land holding as many businesses hold land under a variety of tenure systems and expansion is increasingly achieved by various contract farming agreements.

In addition, the trends of lotting farmland (with small plots being disposed of with traditional farmhouses) and older farmers occupying 'retirement holdings' have seen a significantly increased number of holdings being classified as 'other'. Finally, changes to the methodology of the survey have led to the inclusion of a large number of very small holdings, the majority of which are also classified as 'other'. Further problems with this data source arise from changes in definitions over time and from changes to both how the data is collected and how it is released². The recent inclusion of 'minor' holdings and holdings on the temporary register will have significantly altered the apparent balance between full-time and part-time farms. Unfortunately these changes have coincided with changes to the labour categories, such that it is no longer possible to follow the number of part-time farmers, and the cessation of the publication of farm business size data. It is therefore hard to distinguish trends in the 'core' set of productive holdings. Despite these reservations, the June census still provides a useful indication of some of the key characteristics of agriculture in Devon.

Land, labour and livestock

As Tables 2.1 and 2.2 illustrate Devon is predominately a county of livestock farming where dairying, lowland cattle and sheep and Less favoured Area (LFA) cattle and sheep farms account for most farms and the bulk of land.

² In 1998 the labour categories for farmers, spouses and managers were changed.

In 2000 data started to be published at County / UA – the old Devon can be produced by adding back Torbay and Plymouth UAs but because of data suppression for confidentiality due to the small holdings some estimation is involved.

From 2000 published data included 'minor' holdings having a small effect on cropping and stocking but significantly effecting the distribution of farm types and the total labour force (mostly part-time farmers).

From 2001 holdings on the 'Temporary Register' were included – the stocking and cropping data were not significantly affected but the total labour force was increased by 5%.

In 2001 only a limited survey was possible due to FMD, with much of the data being imputed.

Table 2.1: Holding types, England, SW Region and Devon CC, 2002

	England	South West	Devon CC ¹
	% of holdings not classed as Other		
Cereals	18%	9%	6%
General Cropping	8%	2%	1%
Horticulture	8%	8%	7%
Pigs & Poultry	6%	5%	5%
Dairy	12%	19%	19%
Cattle and Sheep (LFA)	10%	7%	15%
Cattle and Sheep (lowland)	29%	40%	38%
Mixed	9%	9%	9%
	% of all holdings		
Other	40%	43%	41%

¹Excludes Plymouth and Torbay UAs

Compared to the South West region as a whole LFA farming is of greater significance in Devon (table 2.1), while comparisons with England reveal the greater significance of all forms of livestock farming in Devon and the relative insignificance of arable farming. The latter accounts for just 7% of all holdings in Devon compared to 26% for England as a whole. Variation in farm type within the county is shown in table 2.2. The complex farm type structure of the districts reflects the diversity of farming situation within Devon with West Devon being dominated by lowland and LFA livestock for instance, the latter of which is absent in the middle and east of the county, and Teignbridge being characterised by a very small dairying sector. As later sections will show, an appreciation of the current farm type structure of the districts is important as this has implications for the spatial impact of the MTR in Devon.

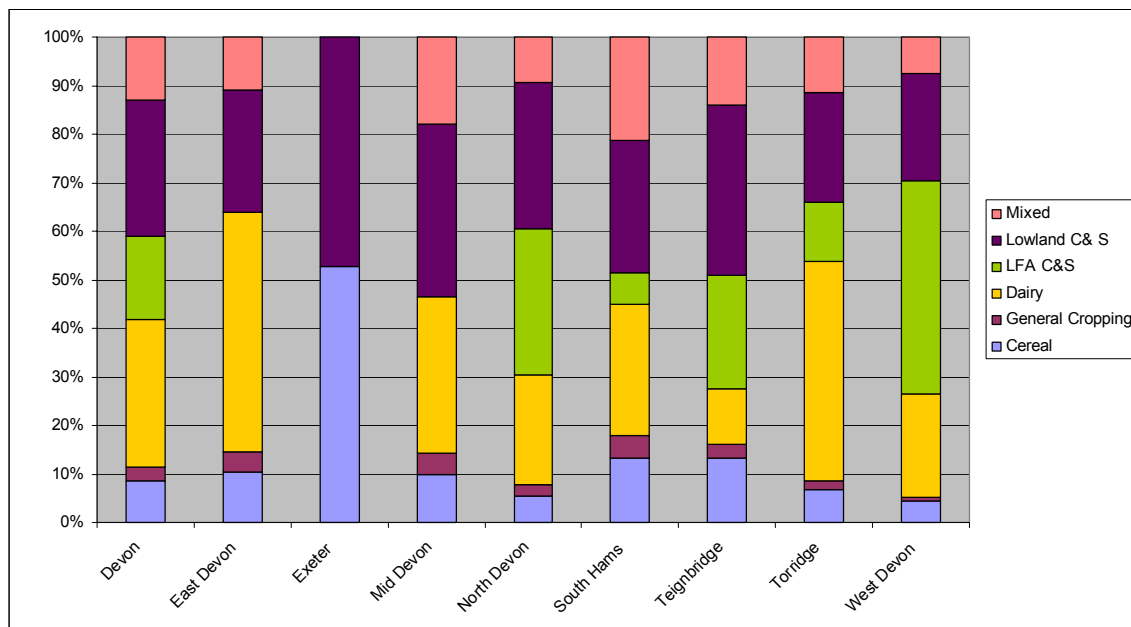
Table 2.2: Farm Types, Devon districts¹, 2002

	East Devon	Mid Devon	North Devon	South Hams	Teign-bridge	Tor-ridge	West Devon
	% of holdings not classed as Other						
Cereals	6%	7%	5%	8%	7%	6%	4%
General Cropping	2%	2%	1%	2%	2%	1%	0%
Horticulture	8%	6%	6%	8%	10%	4%	6%
Pigs & Poultry	7%	7%	5%	4%	6%	5%	4%
Dairy	28%	20%	15%	16%	8%	26%	14%
Cattle & Sheep, LFA	0%	0%	20%	6%	22%	17%	38%
Cattle & Sheep, lowland	41%	47%	40%	43%	36%	33%	26%
Mixed	8%	10%	8%	13%	10%	8%	7%
	% of all holdings						
Other	42%	38%	39%	41%	47%	38%	46%

¹ Due to the small number of holdings in Exeter district farm type data is not published. Because of the suppression of most of the farm type data for Exeter district a number of other districts have had data suppressed so that the Exeter data cannot be deduced from the county and other districts. The figures presented in table 2.2 are therefore based on a certain amount of informed estimation.

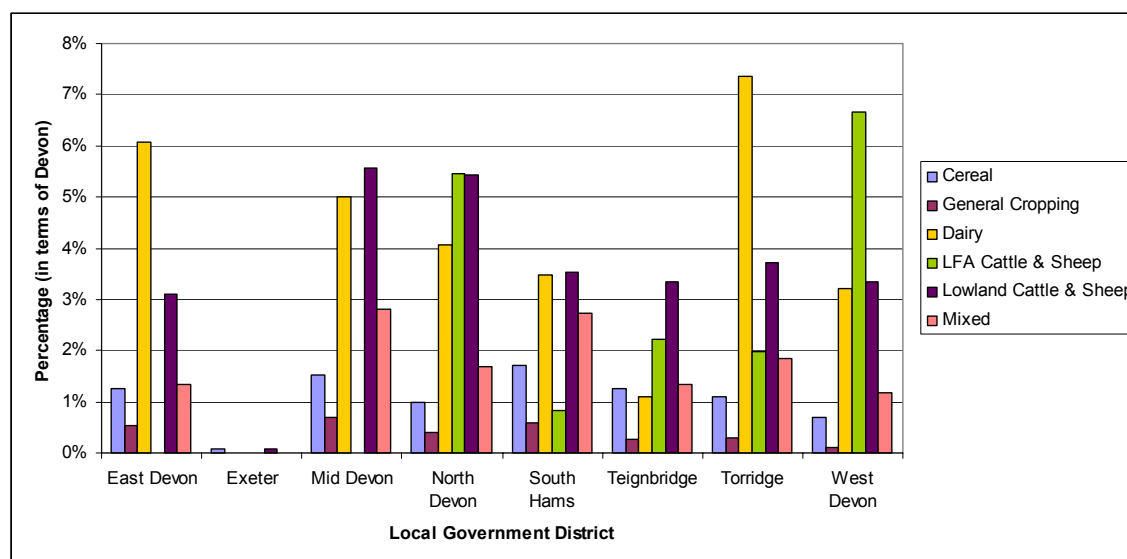
Examining the proportion of agricultural land held by farms of different types in each district provides further evidence of the differentiation of farming within the county (see Figure 2.1). For example, 49% of farmed land in East Devon and 45% in Torrridge is classified as dairying, whereas this is as low as 11% of Teignbridge. Alternatively, LFA cattle and sheep farming is a major part of West Devon's and to a lesser extent North Devon's agricultural land use since these districts incorporate much of Dartmoor and Exmoor respectively.

Figure 2.1: Land holding by farm type at county and district levels



By considering the proportion of the total area farmed by each farm type in each district, in terms of total agricultural land use in Devon (see Figure 2.2), it is clear that East Devon and Torrridge are the two most important districts for dairying. In terms of cereal farming, the South Hams and Mid Devon have the largest areas with 1.7% and 1.5% respectively. Furthermore, these two districts exhibit very similar farming patterns with more cereal, mixed farming and general cropping than any other local government area. Of the other farming types, West Devon and North Devon are important areas for LFA cattle and sheep farming because of their upland regions, while lowland cattle and sheep farms are of similar importance to all districts of Devon with Mid Devon marginally exhibiting the greatest area.

Figure 2.2: Area of land for farm types as a percentage of Devon's total.



Turning to land use, table 2.3 confirms the popular image of Devon as a grassland county. It is also clear that the dominance of grassland has increased over time as the area of arable land has reduced from 41.8% to 31.4% since 1950, an important factor here being the process of mechanisation which was largely complete by the end of the 1950s. As horses were replaced by tractors, so land which previously was required to produce fodder became available for food production. Another driver of this change was changing dietary patterns. Following the ending of food rationing in the early 1950s, there was an increasing demand for a more varied diet with a higher proportion of meat and dairy products than formerly.

These changes in land use must be seen in the context of changes in farming methods, particularly use of temporary grassland in arable rotations and of feed crops for livestock. Over the period one of the most dramatic changes has been the increasing specialisation of many farming systems, as the traditional pattern of mixed farming gave way during the 1950s and 60s to systems based on only one or two enterprises, such as dairying. Other notable trends have been a decline in the area of cereals and other cash crops since 1980, halving of the area under horticulture since 1970 (admittedly only ever a minority occupation in Devon), and a shift from temporary to permanent pastures over the last thirty years. The rate of 'improvement' of rough grazings slowed during the 1980s, although a steady decline in area continues to date. With respect to horticulture, while its decline can be mainly attributed to the demise of orchards (from 8,062ha to 784ha) the area of vegetables has also fallen by nearly 50% from 1,761ha to 910ha. Finally, since it started to be recorded in 1970, the area of woodland on farms has grown significantly from 7,300ha to 19,297ha.

Tables 2.4 and 2.5 present data on the holding size structure of the county and its districts. For Devon as a whole, the holding size pattern is not dissimilar to that for England but as table 2.5 illustrates this varies considerably by district with just under 70% of holdings in Teignbridge being less than 20ha.

Table 2.3: Agricultural land use in Devon, 1950 to 2000

	1950	1960	1970	1980	1990	2000
<i>Arable</i>						
Cereals	16.6	11.9	13.4	13.9	12.3	12.0
Potatoes	1.7	0.7	0.4	0.4	0.3	0.3
Horticultural	2.0	1.5	0.8	0.4	0.4	0.4
Other crops and fallow	5.4	5.3	3.1	2.1	2.4	4.7
Total crops and fallow	25.7	19.4	17.6	16.9	15.4	17.4
Temporary grass	16.1	22.7	23.0	16.0	13.5	12.1
Set-Aside					0.3	1.8
	41.8	42.1	40.6	32.9	29.2	31.4
<i>Permanent grass and rough grazing</i>						
Permanent grass	45.3	46.1	47.3	56.0	59.3	57.3
Rough grazing ¹	12.9	11.8	10.1	7.3	6.8	5.6
	58.2	57.9	57.3	63.3	66.1	62.9
<i>Other land</i>						
Woodland	*	*	1.4	2.6	3.3	3.9
All other land	*	*	0.6	1.2	1.4	1.8

* No data collected

¹ Sole rights**Table 2.4: Holding size, England, South West region and Devon CC (% of holdings)**

	England	South West	Devon CC ¹
Less than 5ha	41%	42%	40%
5ha to less than 20ha	20%	20%	20%
20ha to less than 50ha	15%	16%	17%
50ha to less than 100ha	12%	12%	14%
100ha and over	12%	10%	8%

Table 2.5: Holding size, Devon districts

	East Devon	Mid Devon	North Devon	South Hams	Teign-bridge	Tor-ridge	West Devon
% of holdings not classed as Other							
Less than 5ha	42%	38%	37%	43%	46%	38%	41%
5ha to less than 20ha	20%	21%	19%	19%	23%	21%	20%
20ha to less than 50ha	17%	17%	18%	16%	17%	18%	17%
50ha to less than 100ha	13%	15%	16%	13%	10%	14%	14%
100ha and over	8%	8%	10%	10%	5%	9%	8%

Labour on farms

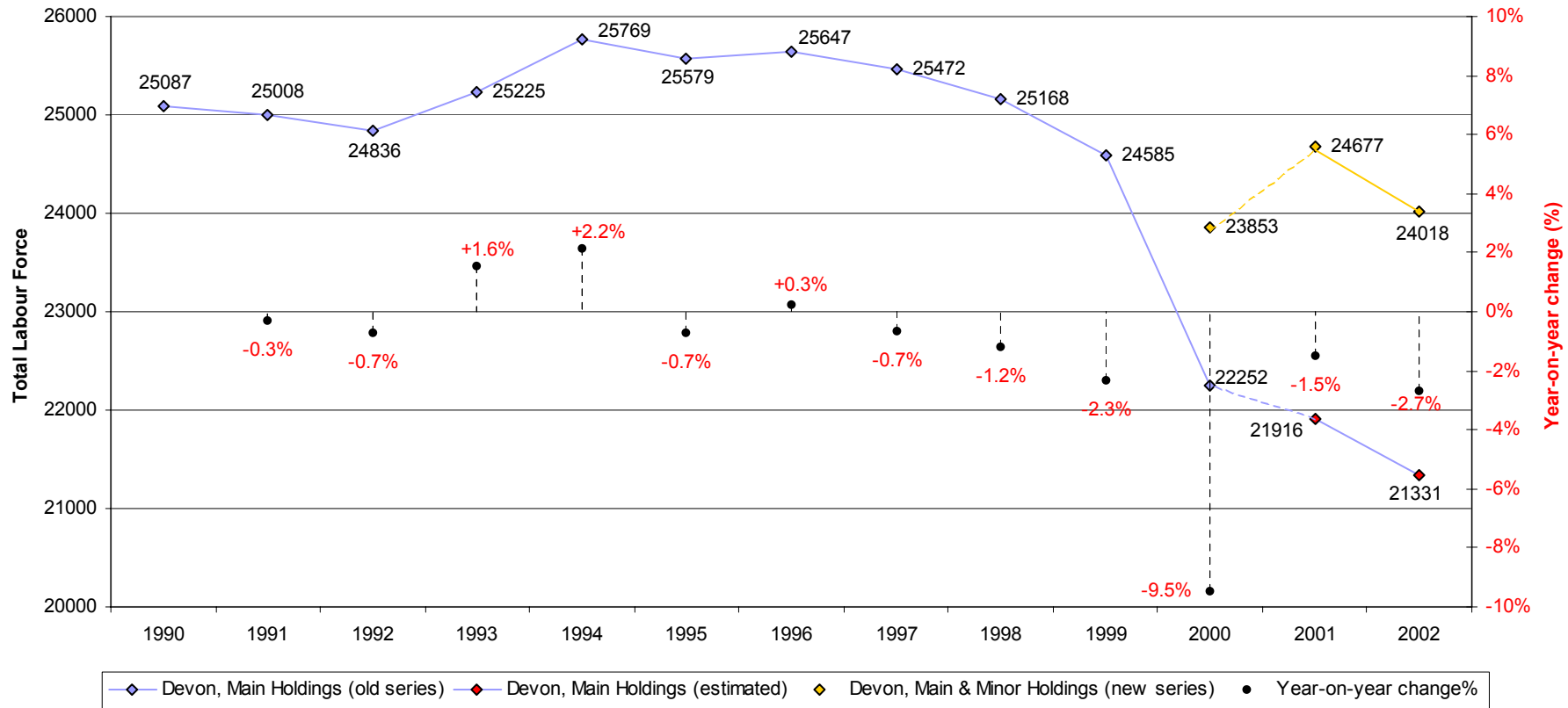
Table 2.6 presents data for ‘main’ holdings in the former county of Devon. Numbers of farmers were not actually collected until the 1970s and spouses working on the farm were added later. The total labour force, as it is understood today, can only be taken back to 1980. Even so it is very clear that the well-established pattern of decline in the number of workers has accounted for most of the more recent shrinkage of the total labour force. Indeed, the total number of farmers has remained relatively stable over two decades of considerable change in the farming economy and policy framework.

Table 2.6: Labour 1950 to 2000, Devon County

	1950	1960	1970	1980	1990	2000
Full time hired & family workers		14,050	7,292	4,990	3,764	2,336
Part time hired & family workers		2,848	2,464	1,984	2,238	1,683
	19,168	16,898	9,756	6,974	6,002	4,019
Casual and seasonal workers	5,124	2,111	2,124	3,230	2,904	1,983
Total workers	24,292	19,009	11,880	10,204	8,906	6,002
Farmers ¹ full time			9,146	9,990	8,880	8,634
Farmers ¹ part time			2,034	2,752	3,376	7,616
Spouses ²				3,708	3,920	
				16,450	16,176	16,250
Total labour force				26,654	25,082	22,252

Developments since 2000 are very difficult to assess in detail because of methodological changes in the census to include minor holdings and holdings on the temporary register. These changes will have significantly added to the numbers part-time farmers. However, an estimate of the underlying change in the total labour force can be made by adjusting for these (see Figure 2.3). This shows a decline in the region of 4% between 2000 and 2002. The total farm labour force had actually remained fairly constant throughout the 1990s, ranging between 24,500 and 26,000. From this level the decline has been of the order of 15%.

Figure 2.3 Total Labour Force on main holdings, 1990 to 2002



Livestock

Figures 2.4 to 2.7 show livestock numbers in (the former county of) Devon over the period 1980 to 2002, indexed with 1990 set to 100. Looking over a long time period like this allows the reader to see the recent decline in livestock numbers in the context of historic trends. Presenting the data as indices also allows for comparisons to be made between the types of livestock. No adjustment has been made for the inclusion of minor and temporary holdings after 2000 but effect of their inclusion on livestock numbers is not thought to have been significant.

Historic livestock numbers need to be seen in the context of support under the Common Agricultural Policy. Headage payments have been a feature of UK agriculture for a long period dating back to the 1940s in the uplands. They were introduced across the EU for ewes and suckler cows in the LFAs in 1975. Britain's variable premium payable on lambs in LFA and non-LFA areas alike was replaced in 1989 by an annual ewe premium. This led to significant increases in ewe numbers until they were capped by quotas in 1992. A Beef Variable Premium Scheme operated in Britain until 1989 when it was replaced by the Beef Premium Scheme with an annual ceiling of 90 male animals per holding. A Suckler Cow Premium Scheme was introduced in 1980-81 and subject to quota after 1992. Support for the dairy sector has been in the form of tariffs on imports and export refunds with a production ceiling (quotas) introduced in 1984. Support for pig meat has been limited to tariffs on imports into the European Union.

The differences in the support regimes are clearly reflected in these charts. Beef and sheep numbers rose dramatically in response to headage payments. In the dairy sector however, the production ceiling created an efficiency incentive so that as yields have risen the number of dairy animals has fallen. Without either headage payments or quotas, the pattern in the pig sectors has been a cycle of over and under production.

However, from 1999 to 2002, a combination of sharply declining profitability and later FMD, led to the numbers of beef cows, sheep and pigs falling dramatically, marking an unambiguous break with established trends. Over this period beef cow numbers fell by 21%, sheep by 26% and pigs by 40%. In the case of both sheep and pigs these falls have been significantly worse than the corresponding figures for the whole of England; 20% and 26% respectively. Whilst the number of dairy cows also show a fairly dramatic fall of 11% between 1999 and 2002, this is only a little worse than the trend.

Figure 2.4 Beef Herd: 1980 to 2002, Devon County, Indexed 1990 = 100

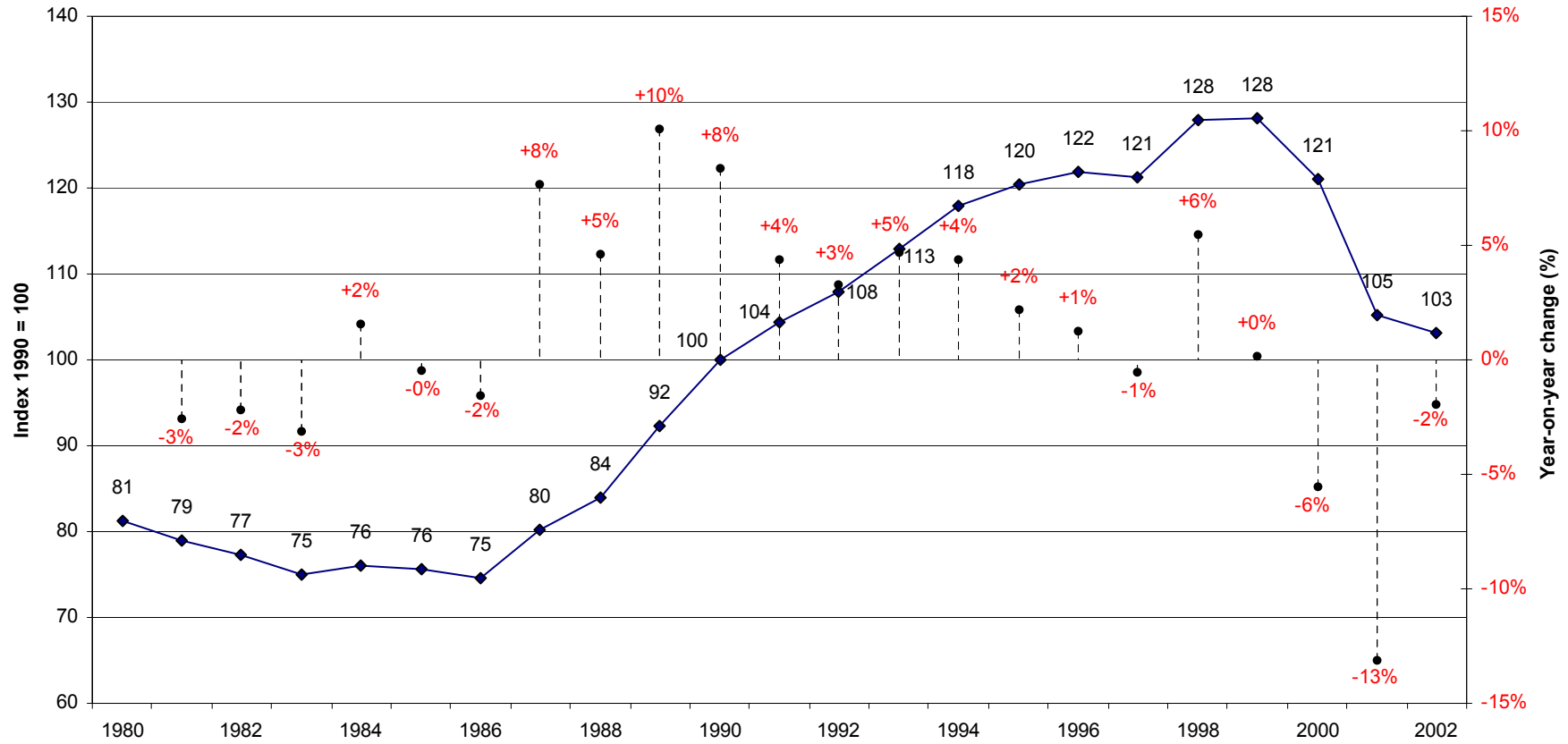


Figure 2.5 Dairy Herd: 1980 to 2002, Devon County, Indexed 1990 = 100

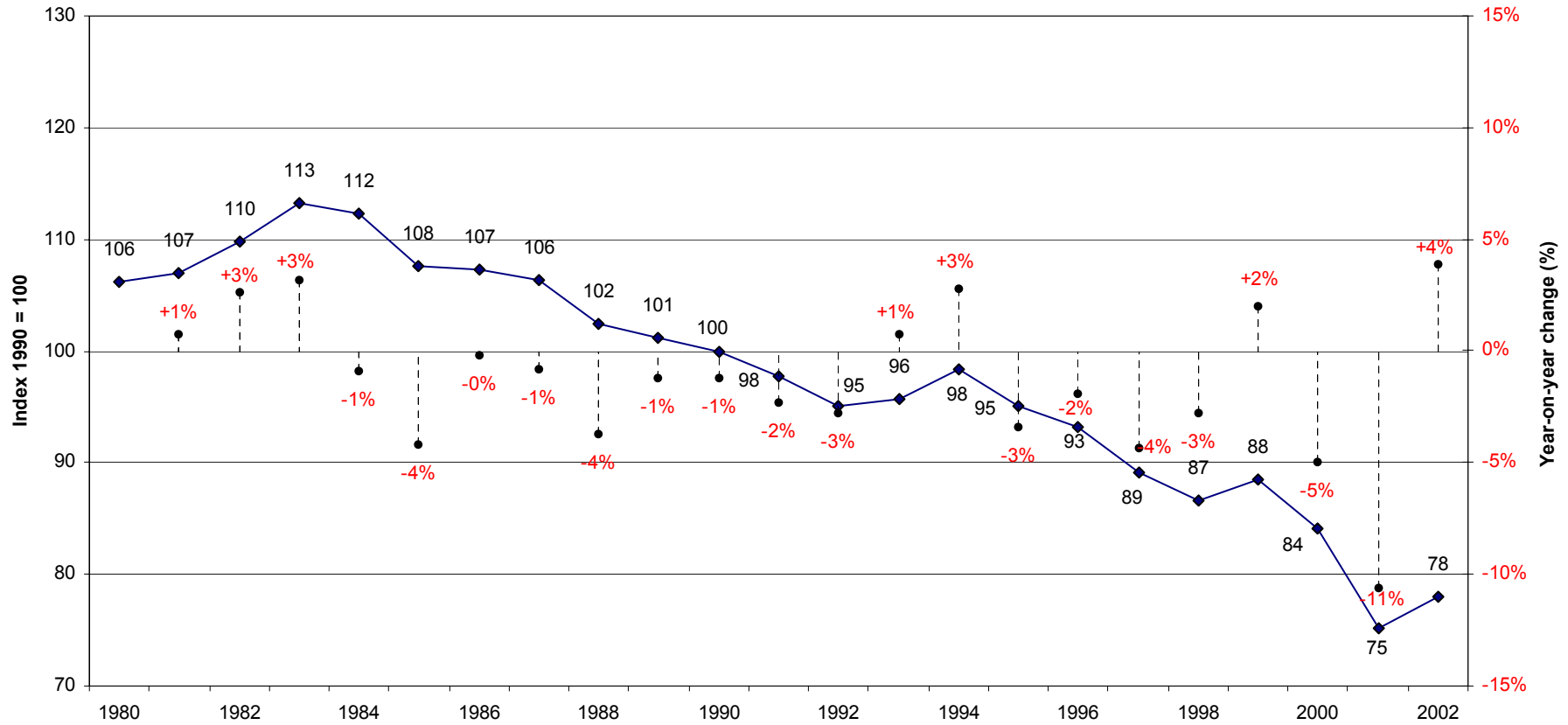


Figure 2.6: Total Sheep and Lambs: 1980 to 2002, Devon County, Indexed 1990 = 100

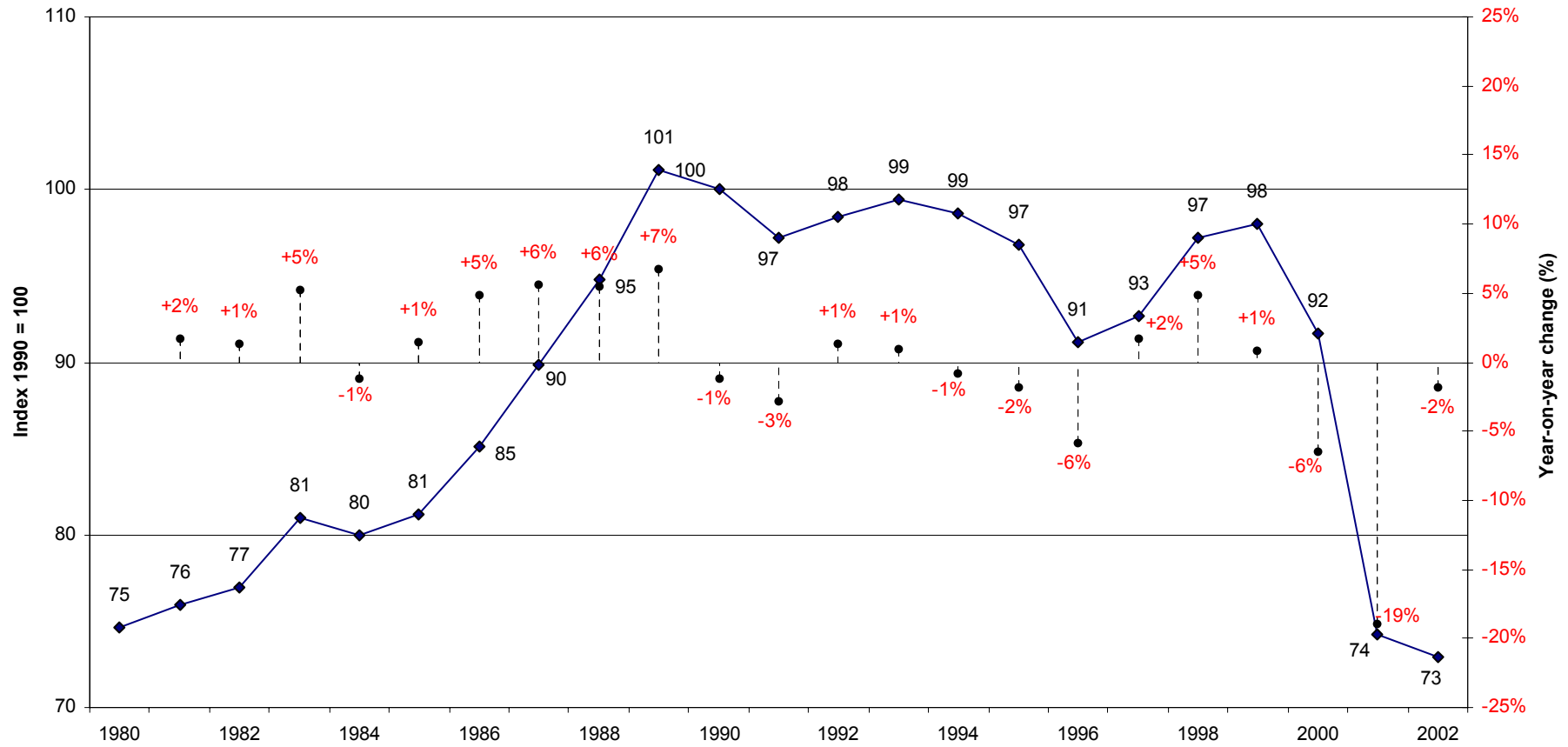
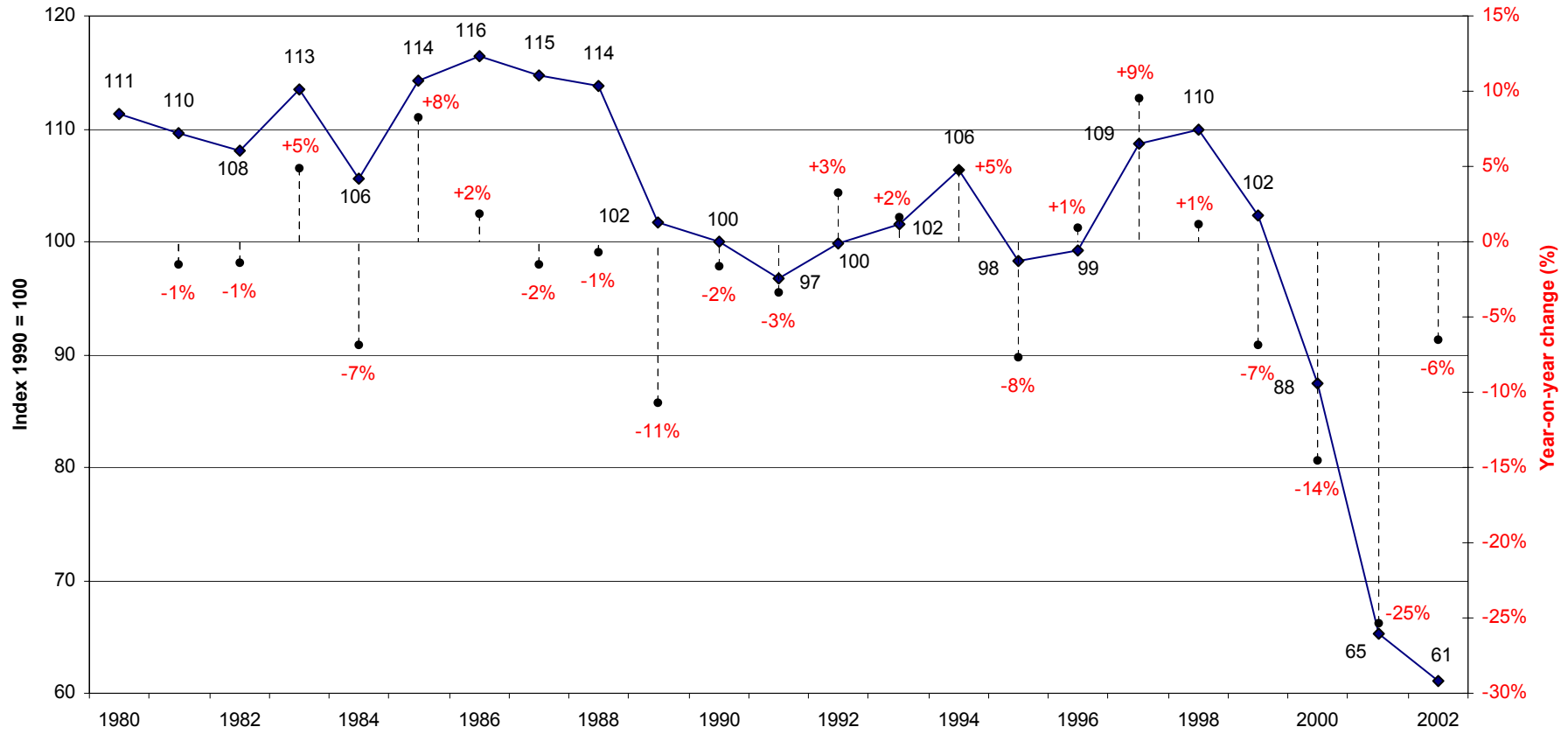


Figure 2.7: Total Pigs: 1980 to 2002, Devon County, Indexed 1990 = 100



Agri-environmental and rural development schemes

In addition to what might be thought of as the ‘traditional’ indicators of the structure of agriculture and agricultural change available from the June census, a limited range of data is available on the land based and project based schemes operated under the ERDP. Of the agri-environmental schemes the ESA scheme is, in terms of area under agreement, the most important. Three ESAs lie wholly or partly in Devon; Exmoor, the Blackdown Hills and Dartmoor. The uptake of agreements in these and other ESAs in the South West region is shown in Table 2.7. Both Dartmoor and the Blackdown Hills ESAs were in the fourth, and last, tranche of ESA designations and so have had less time to attract uptake. Although the uptake in the Dartmoor ESA remains relatively low, the 2002 figure represents substantial progress through recent admission of the Dartmoor Forest common into the scheme. Negotiating agreements for common land is exceptionally difficult because of the large numbers of stakeholders involved. Much of the land remaining outside the scheme is common land and so there is little prospect of a rapid increase in uptake in future. The other main agri-environmental scheme is Countryside Stewardship. There are currently 982 agreements in Devon, the equivalent of a third of all agreements in the South West.

Table 2.7: South West ESAs, 2002

	Eligible area	Under Agreement		Counties	Area within SW
Somerset Moors/Levels	27,600	18,748	68%	Som, Wilts, Avon	100%
West Penwith	8,600	7,885	92%	Cornwall	100%
Avon Valley	4,000	2,536	63%	Wilts, Dorset, Hants	56%
Exmoor	71,000	52,602	74%	Devon , Somerset	100%
South Wessex Downs	44,300	26,346	59%	Dorset, Wilts	100%
Blackdown Hills	33,400	13,776	41%	Devon , Somerset	100%
Cotswold Hills	65,900	45,686	69%	Glos, War, Worcs	99%
Dartmoor	86,600	36,383	42%	Devon	100%
All SW ESAs ¹	341,400	203,962	60%		99%
All ESAs (in England)	958,400	571,520	68%		

Table 2.8: Farm Woodland Premium Scheme, cumulative plantings 1992-2001

	FWPS area 1992-2001 ¹ (ha)	Percentage of total farmed area (2001)
Avon	291	0.36%
Cornwall	1,177	0.43%
Devon	2,774	0.54%
Dorset	762	0.38%
Gloucestershire	1,113	0.54%
Somerset	583	0.22%
Wiltshire	1,333	0.48%
Total	8,033	0.44%
All England	33,451	0.36%

¹ A very small area of woodland was planted before 1992 under a pilot scheme.

As table 2.8 indicates the uptake of the FWPS in Devon is relatively high in comparison with the South West region and with England as a whole.

There is currently only limited data available on the ERDP project based schemes (Rural Enterprise Scheme, Vocational Training Scheme & Processing and Marketing Grant scheme) and while the number of applications approved to date in Devon is low, these represent a significant proportion of all approved applications in the south west (see table 2.9).

Table 2.9: Uptake of ERDP project-based schemes (March 2003)

	Devon: No. of approved applications	Approved applications in Devon as % of all approved applications in SW
RES	33 ¹	29
VTS	11	38
PMG	6	35

¹A further 30 applications are undergoing technical assessment and administrative checks.

The current status of farm businesses in Devon

The most recent findings of the FBS, including projected NFI for the year to 2002/03 are given in Table 1.1. However, it is useful to consider the recent upturn from the perspective of trends in income over the longer term. Because of changes in farm typology in recent years, the most comprehensive information on trends in income is that at national level, and this is shown in Table 2.10. Most farming systems achieved peak returns in 1995/96, following several years of increased returns. It was not always realised at the time how dependent these buoyant incomes were on the relative weakness of sterling following its ejection from the Exchange rate Mechanism in 1992. By 1997, however, sterling's appreciation against European currencies began to erode these high incomes, and this was

compounded by several other factors to produce the extended agricultural recession of the past five years or so. These trends mirror those in the Southwest and, indeed, Devon.

As would be expected, all other measures of the financial performance of farm businesses moved in the same general direction over this period, and also reflect the recent improvement on farms. However, it is interesting to look at the issue of financial stability as shown in the balance sheets of the region's farms. In overall terms during 2001/02 there was a very slight rise in the value of total assets employed on farms, mainly a reflection of adjustments to the value of farm real estate. Although there was little change in the industry's level of long term debt, and bank overdrafts on the sample farms actually fell slightly during 2001/02, short term business liabilities increased reflecting a trend towards more use being made of 'revolving credit' arrangements and, with some modest reinvestment, of hire purchase as a form of finance. While sample sizes are not large enough to review in detail the relative positions of owner occupied as against tenanted businesses, clearly tenanted farms have higher ratios of debt finance because of the difference in asset levels. However, it is good to report that the improvement in profitability is apparently reflected in improvements in the main indicators of financial stability on tenanted farms.

One of the trends which has been particularly evident during the last decade has been the rise in the average level of off-farm income available to the farmer and spouse. Table 2.11 summarises some of the findings from the FBS for the Southwest.

Table 2.10 Net farm income in the United Kingdom, by type of farm
Average net farm income per farm (£/farm)

	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 (a)	2002/03 (a) (projected)
<i>At current prices</i>									
Dairy	33,700	41,300	33,400	21,300	12,800	9,500	12,400	23,200	17,500
Cattle and sheep (LFA)	7,900	12,300	12,200	6,500	3,200	2,000	3,800	4,800	10,000
Cattle and sheep (lowland)	7,900	8,600	7,000	700	-200	-	-	400	7,500
Cereals	33,900	53,500	47,700	16,300	8,300	13,100	6,800	3,300	7,000
General cropping	74,700	87,300	45,200	19,800	34,700	7,800	18,800	15,700	13,000
Pigs and poultry	26,700	56,800	51,500	17,600	-17,600	-4,600	33,700	19,700	26,500
Mixed	32,100	47,100	35,900	5,600	1,300	5,700	8,800	6,400	15,000
All types (excluding horticulture)	29,300	39,300	30,700	13,400	8,900	6,600	8,400	10,100	12,500
<i>In real terms (at 2001/02 prices)</i>									
Dairy	40,400	47,900	37,800	23,300	13,600	9,900	12,600	23,200	17,000
Cattle and sheep (LFA)	9,500	14,200	13,800	7,200	3,400	2,000	3,900	4,800	9,500
Cattle and sheep (lowland)	9,400	9,900	8,000	700	-300	-	-	400	7,000
Cereals	40,600	62,100	54,000	17,900	8,800	13,800	6,900	3,300	7,000
General cropping	89,500	101,200	51,200	21,700	36,800	8,200	19,100	15,700	13,000
Pigs and poultry	32,000	65,900	58,300	19,300	-18,700	-4,800	34,200	19,700	26,000
Mixed	38,500	54,700	40,700	6,100	1,400	5,900	8,900	6,400	15,000
All types (excluding horticulture)	35,200	45,600	34,700	14,700	9,400	6,900	8,600	10,100	12,500

(a) Excluding farms subjected to compulsory foot and mouth disease cull.

Source: *Farm Incomes in the United Kingdom 2001/02*, DEFRA.

Table 2.11 Off-farm income of farmer and spouse in the Southwest: percent of farms, 2001/02

Farm business size	No off-farm income	Between zero and £5000	£5000 and above
Small	34%	40%	26%
Medium	33%	39%	28%
Large	47%	31%	22%
All farms	36%	37%	26%

Although overall more than a third of farms have no off-farm income, defined to include earned and un-earned income as well as social transfers (e.g. child benefits, tax credits), about a quarter had an income from such sources of more than £5,000 in 2001/02. While the largest farms were less likely to have such income, there appear to be few real differences between small and medium farms in this respect. As noted above, these figures have steadily increased over recent years and bear out growing anecdotal evidence about the greater acceptability of becoming a ‘mixed income’ farmer.

While the current economic position may be summarised as the industry being ‘bloody but unbowed’ after the ravages of the worst farming recession since the 1930s, it is also true that in several important ways Devon’s farmers are at an important decision point. Some have effectively retired from active farming, even if they remain in ownership and occupation of the farm. Others have seen the potential next generation leave to pursue better paid careers, which require less commitment to the extremely long hours so often the norm for the farm family. Structural changes are reflected in the way in which labour is supplied, with far fewer full-time employed workers, and more reliance both on the farm family and on casual staff (many of whom are themselves farmers sons or daughters, and operate as self employed farm relief services). A further dimension of structural change is given by the evolving pattern of land tenure with more flexible tenure systems, particularly FBTs, taking over from traditional agricultural tenancies.

Chapter Three: The Impact and Implications of the FMD Epidemic

Introduction

The national epidemic of Foot-and-Mouth Disease (FMD) reached Devon on 24 February 2001 and rapidly spread from its initial focus in Highampton to affect farms across a vast swath of the west and north of the county. In due course, the epidemic extended across much of mid-Devon and affected also substantial areas in the east and south. For some two months the number of new cases grew on a daily basis, and the adverse effects of the epidemic have been all too evident throughout the county's economy. The last confirmed case in the county, at North Tawton, was on 17 June and it was not until late November that the county was officially declared 'free' of the disease.

The impact of the epidemic on the agriculture sector caused particular concern because of its direct and indirect impacts on the economic viability of a wide range of farm businesses. The industry was already going through a very difficult economic situation, entering its fifth year of recession, and many businesses were not well placed to withstand the additional problems imposed by the disease. The effects were diffuse and, it is widely appreciated, involved far greater numbers of farms than those on which culling actually took place.

In addition to the direct and indirect economic impacts of FMD the disease obviously had a considerable personal impact on farmers, their families and those involved in disease control measures. Drawing on evidence from research undertaken in north Devon in the wake of FMD, the final section of this chapter considers some of the impacts on farmers and their families and some of the longer term implications.

The research approach

This chapter updates previous research into the impact of the FMD epidemic, given its final extent and subsequent study of its farm level effects. The approach taken identifies the measurable direct and consequential costs on Devon's farms of the disease outbreak for each of the five major farm types. Although in practice the impacts across the county's agriculture were complex and diverse, for analytical purposes it is necessary to concentrate on broad categories of impact, and we have identified four distinct groups of farms based on the degree of their exposure to restrictions. The farm level economic impacts are structured as follows:

- Farms subject to Form D restrictions
- Infected farms/contiguous cull farms
- Infected area farm (non Form D)³
- Farms outside the infected area

In each case the financial effects of the FMD restrictions on *net farm income*, DEFRA's lead indicator of profitability at farm level, are quantified. Both the estimated 'market effects'

³ Form D was a statutory notice restricting movements on and off a farm, issued where a veterinary inspector suspected that an animal had been exposed to FMD (i.e. as a 'dangerous contact' or being situated within 3km of an Infected Premises).

and the estimated benefits to farmers accruing from additional income, earned and unearned, attributable to the FMD epidemic are shown separately.

The economic impacts of the FMD epidemic in the agricultural sector arose from a diverse range of direct and consequential effects. Analysis of the likely farm-level implications for incomes is further complicated by the potentially vast range of permutations of factors such as farm type, farm size, level of performance, FMD status (i.e. confirmed case, within Infected Area – Form D, within Infected Area – non-Form D, outside Infected Area).

In revisiting earlier work on the impact of FMD in Devon it has become clear that in all important respects the study was fundamentally sound in the assumptions made about its overall incidence, and with respect to its measurable effects on farm businesses. The final tally was 173 confirmed cases in the county, one of which was an abattoir, West Devon Meat. In addition, of course, the ‘contiguous cull’ was substantial, the best information available points to an average of some six farms for every confirmed case. Thus, our earlier estimates that the number of culled farms would reach nearly 1200 during the entire course of the epidemic cannot be improved on, and this is clearly a key parameter.

The economic impacts at farm level have been estimated using a series of models, reflecting both the most common farm systems and also the differential impacts of alternative restrictions regimes. Not only are these findings of interest in themselves, but they can readily be used in conjunction with the Council’s Input-Output model of the Devon economy to consider the aggregate effect within the county. Five farming systems were identified as being typical of those most affected in Devon: specialist dairy; lowland, upland and hill livestock; and mainly cropping. In each case factors such as farm size, level of performance and tenure were selected to provide a representative base on which to model the FMD effects.

In the light of subsequent information on the various effects of the epidemic and the consequent restrictions on farm businesses four broad FMD scenarios were modelled to reflect the different implications of the epidemic for farms in different circumstances. As noted above these were:

- Farms on which FMD was confirmed (including also all farms on which livestock were slaughtered as ‘at risk’ or ‘contiguous’);
- Farms within the designated Infected Area subject to ‘Form D’ restrictions;
- Farms within the designated Infected Area *not* subject to ‘Form D’ restrictions;
- Farms outside the Infected Area (which were nevertheless affected to some degree).

Clearly multiple variations on these four scenarios were possible. A farm might have started outside the Infected Area then, as the boundary moved outwards, came within it and could even end as a confirmed FMD case, while Form D restrictions might apply for much or only some of the period of the epidemic. The purpose here is not to get diverted by the complexity of the real world situation but to explore, using the simplified matrix [five farm types x four FMD scenarios] the possible ranges of financial effects to which individual farms might have been subjected.

Each of our earlier assumptions have been reviewed in the light of later information, and this has enabled significant improvement to be made to the models' specifications. In particular, changes have been made to the scale and treatment of income earned by farmers for undertaking the prescribed cleaning and disinfection routines on their own farms. An earlier assumption about the possibility of some extra income being earned by farmers off their farms has accordingly also been revised. Other changes have been made to assumptions about the use and payment of labour.

In one further respect, however, it has not been possible to significantly improve on our earlier estimates. We have nothing other than anecdotal evidence about the timescale and level of restocking on culled farms. It is known that many farmers have not rushed to restock with mature breeding animals, for example, preferring to breed their stock from younger animals and thus reaching their 'full' stocking rate after a period of two or more years. Others, it is known, have no intention of returning to their former stock levels, for a variety of reasons. Survey evidence available to date is too fragmentary to quantify these effects, and the agricultural census is not sufficiently detailed to make firm estimates. In the absence of a comprehensive survey of all culled farms – something which we are not advocating – the following points should be borne in mind:

- Lower stocking will have produced a reduction in the value of the output of such farms where this has occurred, although it is possible that there will have been compensating benefits in the form of higher revenues from entitlement to Extensification premia.
- No allowances have been made for changes in farm type consequent on a cull being carried out as, for example, where a dairy farm restocked only with beef cattle, thus giving up dairying.
- The effects of the '20 day rule' throughout the intervening period have not been quantified, but are known to have had some adverse consequences in particular cases.
- Under the Hill Farm Allowance Scheme, the lower stocking limit has been extended again for 2003 to allow for lightly stocked farms to have an allowable claim.

The financial results have been calculated at 2000/2001 prices to maintain consistency. They are derived from detailed results of the annual Farm Business Survey, the baseline data excluding any farms where measurable effects of the FMD epidemic were apparent. The main results are set out in Tables 3.1 and 3.2, which are labelled 'optimistic' and 'pessimistic' based on the respective assumptions.

The assumptions that underlie these two scenarios need explanation. In the case of FMD confirmed cases, including 'contiguous cull' farms, there was a significant period before re-stocking was allowed. First, the premises had to be cleansed and disinfected,

Table 3.1 Estimated economic impact of FMD epidemic at farm-level, selected farm systems, at 2000/2001 prices: 'optimistic' assumptions

	Specialist dairy	Livestock (cattle and sheep) farms			Mainly cropping
		Lowland	Upland ¹	Hill ²	
Average farm size (hectares)	59	125	110	225	192
A. Baseline results: pre-FMD³					
Total output	105,314	81,205	64,787	118,763	150,754
Total variable costs	50,042	37,219	22,291	51,156	60,033
Farm gross margin	55,272	43,986	42,496	67,607	90,721
Total fixed costs	47,724	43,109	34,150	61,297	79,980
Profit incl. unpaid labour	7,548	877	8,345	6,310	10,741
Net profit	12,184	7,644	14,055	14,423	14,960
Net farm income	3,269	-2,506	-2,196	1,803	1,151
B. Post-FMD: 'optimistic' assumptions					
<i>Farms with FMD – 120 days closedown⁴</i>					
Change in NFI - without market effects	-11,254	-7,330	-7,925	-4,879	-2,434
- with market effects	-6,231	-6,100	-4,612	-323	-3,848
<i>Infected Area Form D farms – 120 days restrictions⁴</i>					
Change in NFI - without market effects	-1,584	-6,285	-5,033	-6,672	-3,734
- with market effects	-1,952	-11,012	-8,861	-11,192	-6,483
<i>Infected Area non-Form D farms</i>					
Change in NFI - without market effects	-1,217	-2,691	-2,987	-2,556	-1,653
- with market effects	-1,585	-7,418	-6,814	-7,136	-4,402
<i>Farms outside Infected Area</i>					
Change in NFI - without market effects	-980	-820	-620	-720	-520
- with market effects	-1,348	-5,547	-4,448	-5,240	-3,270

¹Farms within the Less Favoured Area eligible for DA subsidies.

³Baseline results are projected 2000/2001 performance based on 1999/2000 survey actuals.

²Farms within the Less Favoured Area eligible for SDA subsidies.

⁴See discussion in text.

Table 3.2 Estimated economic impact of FMD epidemic at farm-level, selected farm systems, at 2000/2001 prices: ‘pessimistic’ assumptions

	Specialist dairy	Livestock (cattle and sheep) farms			Mainly cropping
		Lowland	Upland ¹	Hill ²	
Average farm size (hectares)	59	125	110	225	192
A. Baseline results: pre-FMD³					
Total output	105,314	81,205	64,787	118,763	150,754
Total variable costs	50,042	37,219	22,291	51,156	60,033
Farm gross margin	55,272	43,986	42,496	67,607	90,721
Total fixed costs	47,724	43,109	34,150	61,297	79,980
Profit incl. unpaid labour	7,548	877	8,345	6,310	10,741
Net profit	12,184	7,644	14,055	14,423	14,960
Net farm income	3,269	-2,506	-2,196	1,803	1,151
B. Post-FMD: ‘pessimistic’ assumptions					
<i>Farms with FMD – 210 days closedown⁴</i>					
Change in NFI - without market effects	-16,852	-9,275	-13,165	-5,901	-1,323
- with market effects	-11,829	-8,045	-9,852	-1,345	-2,211
<i>Infected Area Form D farms – 210 days restrictions⁴</i>					
Change in NFI - without market effects	-1,584	-6,285	-5,033	-6,672	-3,734
- with market effects	-1,952	-11,012	-8,861	-11,192	-6,483
<i>Infected Area non-Form D farms</i>					
Change in NFI - without market effects	-1,217	-2,691	-2,987	-2,556	-1,653
- with market effects	-1,585	-7,418	-6,814	-7,136	-4,402
<i>Farms outside Infected Area</i>					
Change in NFI - without market effects	-980	-820	-620	-720	-520
- with market effects	-1,348	-5,547	-4,448	-5,240	-3,270

¹Farms within the Less Favoured Area eligible for DA subsidies.

²Farms within the Less Favoured Area eligible for SDA subsidies.

³Baseline results are projected 2000/2001 performance based on 1999/2000 survey actuals.

⁴See discussion in text.

Discussion of the various impacts at farm level

A few general points can be made regarding the differential economic impacts across farms in relation to their individual exposure to the epidemic and its restrictions. First, the effects were almost entirely negative on 'non-culled' farms, because of (a) the direct costs of bio-security and a less than optimum efficiency in the general use of resources; (b) the implications, short and longer term, of the near-standstill in business activities which many farms experienced; (c) the short and medium term effects of the lack of efficient markets for livestock and the evident longer term price implications of disrupted and suspended trade arrangements.

Secondly, the overall financial assessment on culled farms shows that the short to medium term economic impact was, at worst, neutral, though the social impact was much more variable and, in some cases, of considerable duration. This is so because (a) the compensation levels were, on the whole, generous; (b) many farm families were able to gain some off-farm work, often associated with the FMD clear-up operations; (c) there was no evidence of rapid re-stocking driving up the prices of breeding stock, for example, unduly; (d) there was considerable anecdotal evidence of a general determination among such farmers not to get into debt again, by re-building their businesses slowly. For these farms too, of course, there were the adverse longer term implications of disrupted markets noted above.

There were, however, a range of specific problems and issues of particular importance to farming businesses over the short to medium term which deserve mention in any assessment of the impacts of the FMD epidemic as a whole:

- The combined effect of licensing regulations for animal movements and the 21 day standstill requirement, both important parts of controlling the epidemic, imposed severe difficulties on selling small numbers of livestock (and thus probably impact small farms disproportionately); and these consequences have continued, of course.
- The lack of transparency associated with price-setting in bi-lateral negotiations for livestock sales, particularly for finished stock, was rightly of great concern to the farming industry. It became a cause of considerable concern and dissatisfaction and contributed in no small measure to the pressures on farmers during the autumn of 2001.
- There was a perception that the lack of efficiently-functioning markets (or, indeed, any markets at all until very recently) may have been exploited by buyers in driving down prices. There is no doubt that selling prices for both finished and trading livestock, cattle and sheep, were much lower than in the previous season. At the very least, farmers missed the apparent transparency of price-setting in auction markets, which were temporarily replaced with different forms of trading (e.g. with buyers visiting farms and making an 'offer').
- There was a substantial 'displacement' effect whereby trading livestock did not move as much as would have been the case in a normal year because of the restrictions, other difficulties and a lack of demand. An example of this was greater numbers of calves retained on dairy farms, and the consequence has been degrees of over and under stocking on farms throughout the county for an extended period beyond the immediate aftermath of the epidemic.

- There were considerable administrative burdens imposed on the industry associated with a vast increase in the volume and complexity of paperwork which farmers had to deal with. There were also been what may be termed bureaucratic delays by relevant authorities (e.g. with aspects of the work undertaken by Trading Standards), no doubt resulting from problems of overwork or under-resourcing.
- The costs of maintaining high bio-security standards throughout the pre-processing part of the food chain tended, inevitably, to get passed back to farmers, in addition to the costs incurred directly on farm (e.g. the disinfection costs for cleaning haulage vehicles which were reflected in haulage charges). There was, therefore, a significant financial penalty at farm level in meeting the necessarily higher levels of bio-security, when compared with the pre-FMD position.
- The remaining restrictions on animal movements inevitably resulted in a less efficient use of resources which affected both farmers (with distinct livestock husbandry and business management dimensions) and livestock hauliers. One result was the reduced use of hauliers by farmers because of the costs involved, or because some movement of small groups of animals were no longer cost effective for the haulier.
- Straw prices during the 2001/02 winter were nearly double their normal level, and this was at least partly the result of the destruction of many carry-over stocks of straw but combined also with a generally poor harvest, the result of the appalling autumn weather conditions in 2000 when the winter cereals crops should have been planted.
- Although culled farms had the opportunity to re-structure their businesses, in some cases this was inhibited by the continuing impact of movement restrictions. Inevitably, given the scale of the epidemic, inter-regional transfers of livestock were often impossible and so second-best decisions may have resulted.

Many of the consequences of the FMD epidemic are only becoming manifest over the longer term, in agriculture as elsewhere. One of the more important effects was the consequences of a severe interruption to the normal breeding patterns. On many farms breeding cattle were not serviced on time in the spring of 2001, because of the severe restrictions in force and the requirements of good bio-security (both artificial insemination and the movement of bulls from farm to farm was also affected, of course). This will have had a significant effect on both dairy and beef herds, particularly those which normally practice batch calving. In some cases it has taken a couple of years to recover fully from this hiatus, and in the meantime there has been a degree of financial penalty for the loss in efficiency.

The impact of foot and mouth on farm households and farming communities⁴

The impact of FMD was obviously not confined to its financial implications for farm businesses. In the winter of 2001/02 a research project conducted in the Hatherleigh-Holsworthy area recorded the experience of a number of farm households and identified some of the longer term implications of the outbreak on farmers and their networks of contacts. Frequently respondents did not initially mention that they had had the disease, FMD was only mentioned later in the discussion, as one factor within the range of problems that were faced. It frequently arose when the interviewees were asked to imagine a time of difficulty and what they might do to get themselves through it. Most people switched to discussing what they had done during their most recent crisis – foot and mouth disease. All of the families expressed a similar set of responses, as the crisis unfolded.

The Mattern⁵ family represents most articulately the series of responses other interviewees indicated. Firstly a wave of support from people off the farm, the telephone constantly ringing and eventually a weariness about the phone ringing, of not wanting to discuss it with anyone anymore. The Mattern family had been surrounded by farms that were culled and the smoke from the pyres had engulfed the farm suffocating some younger animals.

Mr Mattern: “Well, I mean, that it was the phone was going constantly really, wannit, everybody was ringing everybody. I mean it was fine for the first three weeks, then after that it got to be a real pain, didn’t it really”

Mrs Mattern: “Yeah. You just wanted to be left alone.”

Mr Mattern: “The last thing you wanted to speak about was foot and mouth again, wasn’t it”.

The children were unable to go to school and the whole family did not leave the farm for 3 months and did not get to the end of the lane, which is effectively their drive for 6 weeks.

Mr Mattern: “I mean, there was foot and mouth, so I mean we didn’t move for 3 months, I didn’t even go to the end of the lane for six weeks”.

This time had been personally very costly, Mr Mattern did not hide the pain that it had caused;

“You know, we felt it was bad at the time. If only we’d known... You know, I mean, there were people in tears and one thing and another, but I mean, it wasn’t no good getting like that. I mean, I knew I didn’t have it but you dreamt you had it every night, and every morning when you looked at everything it was a greater period of stress, you know, than if you did have it. Cos once you had it, wasn’t it, you knew then. I mean, obviously you still had the business of disposing of it all of it, but again, I mean, we

⁴ This section draws on research undertaken in north Devon for the Countryside Agency. See Reed et al 2002 for full details.

⁵ All names are pseudonyms.

saw that, it was only just up the road.....so it may as well have been ours they were putting up there really.”

Despite the personal costs of FMD, many were adamant that it was not going to force them from the land. As one farmer remarked:

“a lot of people said, you know when foot and mouth came round, they wouldn't be going back to it [farming] ... sat around a table and said ‘Well, what're we gonna do? What's the alternative?’ There is no alternative is there?. It's a farming area, farming people and we've got to get on with it”.

‘Getting on with it’ however, brought additional stresses and strains. Many respondents had adopted a strategy of working longer, harder hours in order to survive. One younger farmer whose family had adopted this approach reflected that “...it's got worse really in the way its more pressure, pressure all day, seven days a week. You just can't shut it off, you know. This is the trouble when you've gotta be there and see to everything. And ... that's the problem init .. its pressure, mental pressure”.

In addition to working longer and harder many farmers in the area were surviving by a strategy of belt tightening and risk aversion. For instance, one family had sold and not replaced a car, cancelled satellite television and then stopped paying into their pension scheme as a means of short term survival. Many have also withdrawn from social contacts as part of a strategy of working longer, harder hours on the farm in order to survive. This is seen in a decline in formal civic participation, reductions in other activities which involve getting off the farm, lack of knowledge of non-farming neighbours and generally increased isolation. This response can be associated with a vicious downward spiral leading to further isolation, lack of awareness of the successful and less personally costly strategies adopted by others and a movement away from the networks of association that are frequently important in successful business strategies. As one local minister reported: “There are a lot of people in these communities who fall by the wayside, and one of the problems with depression is that people tend to isolate themselves”.

Summary

This chapter has illustrated the complex range of factors contributing to the economic impact of foot and mouth on farms in the county. The longer term, human, costs of FMD are still unravelling. For many it marked an important watershed in their lives and that of their business. One respondent summed up the feelings of many saying “I mean, since foot and mouth things have changed”. Although we can only speculate on the nature of this change, evidence from the United States suggests that children's experience of their parents survival strategies during the depression of the 1930s influenced their own decision making for the remainder of the lives.

Chapter Four: Implications of the Mid-Term Review

Introduction

This chapter considers the impact of the Mid-Term Review (MTR) of the Common Agricultural Policy (CAP) on farming in Devon. Analysis of CAP reform is always a challenging and complex task, and is more so in this case as at the time of writing the final reform package is unknown⁶. Moreover, CAP reform will stimulate a range of wider agricultural changes which we can provide informed speculation on, but cannot model formally. It must also be appreciated that, as stated in chapter 1, internal farm household factors will play an important role in determining the reaction of an individual farm business and farm household. Regardless of the shape of the final MTR package, it will not impact equally on all farms. Across the county the challenge of the MTR will be faced by farms at different stages in the business cycle, different stages in the household lifecycle and farms with different endowments of capital, skills and so on. It is these factors which are less amenable to modelling that will ultimately determine the impact of the MTR on Devon's agricultural sector. Despite these caveats, the modelling exercise undertaken for this project has produced results indicative of broad trends. The detailed assumptions upon which the model is based are included in this chapter (where appropriate) and further statistical data is included in the appendices. Before discussing the modelling results for Devon in detail, this chapter presents an overview of the MTR and reviews some of the impact studies commissioned by defra.

Overview of the MTR

The Mid-Term Review, initiated as part of the Agenda 2000 agreement on CAP reform, presents what are arguably the most radical proposals for reform since Commissioner Mansholt's ill-fated plan of the 1960s. Since then however, the international policy environment and the business orientation of many farms has changed considerably and, despite the response to the proposals from some member states and sections of the farming community, reform along these lines is inevitable. For a long time now CAP analysts have pointed to the distortions and environmental impacts created by a system that effectively coupled the support a farmer received with production decisions. While the broad thrust of the MTR proposals to make farmers increasingly 'market facing' at the same time as improving environmental management is to be welcomed, an analysis of the detail of the proposals leads to some concerns over the potential impact on vulnerable farming sectors, the farmed environment, agricultural infrastructure and rural society. Moreover, as the results of the modelling exercise below indicate the impact of the MTR will vary across Devon and, importantly, across time. The full benefits of the MTR package will not be realised until the longer term which means that the short term reaction of farmers will be crucial in determining the longer term changes in Devon's farming.

⁶ Indeed, the reform agenda is constantly evolving and since the analysis for this report was completed Commissioner Fischler indicated at a recent Agriculture Council meeting that he was prepared to adopt a more 'flexible' approach to a number of aspects contained within the January 2003 MTR proposals.

In many ways the MTR proposals aim to strengthen and deepen the Agenda 2000 reforms by further reducing intervention prices and strengthening rural development. While Agenda 2000 and the earlier MacSharry reforms introduced a degree of partial decoupling via direct support payments, the MTR proposals go further by suggesting that all direct payments to farmers are converted into a decoupled 'single income payment' to be calculated on the basis of average area (of supported regimes) and entitlement to direct payments in an historic reference period (2000-02). The reference period chosen means that it is now too late for producers to change production to maximise historic payment receipts (which may have had negative environmental impacts). Although the payments are to be decoupled from production decisions they are effectively recoupled to a basic land management requirement (cross-compliance) and so will continue to have impact on land management decisions and inevitably, production. This theme is explored below where three scenarios are employed representing different degrees of decoupling (based on work undertaken by Queen's University – see Moss et al, 2002).

Alongside proposals for a decoupled SIP the MTR proposes the introduction of an EU-wide system of degressivity and modulation. Although sometimes used interchangeably these terms represent two distinct processes. Degressivity refers to the progressive reduction in the SIP. The Commission has proposed a 'tax band' approach with the rate of aid reduction being differentiated according to the amount of direct payments received. Farmers receiving less than €5000 would be exempt under the existing proposals, those receiving €5000-50,000 will face a 12.5% reduction by 2012 and the minority of EU farmers receiving in excess of €50000 will face a reduction of 19%. It should be noted however, that given the UK's large farm size structure relative to much of the EU, the impact of this approach will be felt most severely by UK farmers. DEFRA estimate that some 18% of farms and 22% of payments will be subject to the higher rate of degressivity compared to 2% of farms and 11% of payments for the EU15 as a whole (DEFRA, 2003a).

Modulation refers to the 'recycling' of funds saved through degressivity into rural development payments. In contrast to the original MTR proposals, under the draft legislative texts of January 2003 not all of the money saved through degressivity will be available to support rural development spending. The proportion of modulated funds available for rural development will rise progressively to 6% in 2012 with the remaining funds being made available to finance future market reforms. Although modulated funds only represent a small proportion of total rural development spending, there will still be a lower budget for rural development. According to defra "The UK share of the EU modulated funds would therefore not be sufficient to meet current or planned levels of expenditure under the UK Rural Development Programmes, and the introduction of an Entry Level Scheme in England" (DEFRA, 2003a para. 6.13).

Impact of the MTR: evidence from impact studies

Defra have commissioned a number of studies on the impact of the MTR as well as carrying out their own analysis. Each impact study employs a different methodology and adopts different assumptions. However, a consistent finding is that in the longer term the impact of the MTR will be beneficial in both economic and environmental terms. Defra (2003b) conclude, on the basis of a number of studies, that decoupling alone will:

- Reduce levels of production and improve market orientation of agriculture
- Improve farm incomes
- Have a generally positive environmental impact
- Release resources from agriculture

If the impact of the entire MTR package is considered, Defra estimate net economic gains for the UK in the region of €0.6-0.9 billion. These estimated gains arise in part from changes in productivity and farm restructuring as well as improvement in prices. For the UK beef sector it is estimated that production changes in the range of -5 to -15% will be accompanied by price increases of 10 to 20%, while sheep production could fall by 10-15% and prices rise by 20-25%. Overall it is estimated that the total benefits to producers could be in the region of 20-45% of Total Income From Farming at 2002 levels. However, as stated above, these results are sensitive to the assumptions made regarding price movements, farmer behaviour, etc. For example, research undertaken by Queen's University (Moss et al 2002) indicates a fall in UK sheepmeat production of 12% by 2010. The results obtained by Harper Adams and the Scottish Agricultural College on the other hand suggest only a 3% fall in UK sheepmeat. The difference is at least partially explained by the assumption of considerable inertia among upland farmers given limited alternative enterprises. Indeed, not only do Harper Adams and SAC suggest a much lower decline in sheepmeat production, they also estimate that much of this adjustment will occur in the lowlands.

Overall, on the basis of national FBS data, Defra estimate an average increase in NFI of 16% by 2008 under the MTR compared to forecasted income in 2008 in the absence of the MTR (Defra 2003a). This increase is based on a combination of the impact of decoupling, degressivity, structural adjustment and the receipt of rural development funds. Clearly therefore there will be significant variation around this average:

“farms that are modulated without participating in rural development schemes will have a direct negative impact on their income level. Farm level impacts will also be determined by the type of scheme that recycled funds flow into and how this interacts with the compliance cost structure across the farm population. The decoupling impact is extremely complex and at the level of the individual farm the impact will depend on the extent to which farmers are willing and able to shift production to the more profitable components of their production and to being about further efficiency gains through further restructuring” (Defra, 2003a).

Given the complexity of possible impacts at the farm level it is not surprising that predicting the environmental impact is also extremely complex. However, a Defra commissioned study undertaken by GFA Race suggests a range of environmental impacts resulting from the

MTR. A predicted increase in fallow land will bring biodiversity benefits in arable areas and cross compliance conditions (assuming they are appropriate) will ensure a minimum level of environmental management. Given that decoupling is designed to break the link between support payments and production decisions, the MTR should stimulate extensification which, in areas of high and over stocking, would bring about environmental benefits. However, there is a danger that in some areas with already low levels of grazing any further extensification would lead to undergrazing. The decoupling induced extensification effect is likely to make participation in agri-environmental schemes easier, particularly in the context of the Entry Level Scheme (ELS). However, much depends on the interaction between cross-compliance conditions and the requirements of the ELS. If the distance between the two is not sufficient participation in the ELS will bring about little additional benefit.

The MTR is also likely to stimulate a wider range of impacts in rural areas. Given the uncertainty over the final form of the MTR and difficulty in predicting effects at the farm level it is only possible to offer informed speculation at this stage but the MTR will promote a certain degree of agricultural restructuring and this will have socio-economic multiplier effects. One of the main forms of restructuring involves reducing labour and as chapter two illustrated the main trend in the farm labour force has been a reduction in the number of farm workers. One way of achieving the sort of efficiency gains that Defra expect to emerge from the MTR would be for further reductions in labour which could have knock-on effects for rural communities. Other restructuring responses may involve keeping machinery for longer, reduced spending on inputs, etc. Decoupling will speed up agricultural restructuring and will clearly have implications for upstream and downstream sectors. The social and local economic impacts of such changes should be considered and in turn, this places greater emphasis on the use of rural development funds to mitigate undesirable social and economic change.

Measuring the impact of the Mid Term Review in Devon

The MTR proposals used in the modelling exercise are those published by the Commission on the 22nd January, 2003. specifically:

- ***Changing to a decoupled 'single income payment' (SIP)*** based on area rather than on headage or yield that are linked to production. With the switch from direct producer payments to a decoupled SIP, it is not known how farmers will respond in terms of their production. Therefore, by examining different rates of production responses, as suggested by Moss *et al* (2002), it is possible to estimate the likely impact that the single farm payment will have on each farm type in Devon (see Appendix A1).
- ***Changes to the arable intervention price*** and compensation paid through the Arable Area Payments Scheme (AAPS).
- ***Changes to the milk quota regime.*** In particular, how Net Farm Income (NFI) may change when the Agenda 2000 measures are fully implemented, milk quotas are then increased by a further 2% and the introduction of a dairy premium to offset cuts in the target price of milk. (see Appendix A2 for fuller explanation).
- ***The introduction EU wide degression.*** The rate of degression for each farm type will depend on the level of their SIP. If farms receive more than €50,000 per year then their SIP will be reduced by the maximum rate of degression. This is intended to be 1% in

2006 rising to 19% by 2012. However, as is expected for most Devon farms, if farmers' annual payment of less than €50,000, 'additional aid' will decrease the rate of degression (see Appendix A3 for technical details).

- **Modulated income for farms through rural development measures.** It is proposed that budgetary savings arising from degressivity will be partially recycled to the RDR budget and to pay for CAP reform. Of the modulated money paid through the RDR budget the proportion paid to each will depend on each country's agricultural area, farm employment and GDP. Furthermore, DEFRA (2003) suggest that modulated RDR income will be match funded, although this policy has yet to be determined.

The impact of the Mid Term Review on farm types in Devon

The farm types used in this analysis of the impact of the MTR on farming incomes are based on FBS data specific to Devon farms. To enable DEFRA small area statistics to be used in conjunction it has been necessary to integrate its cereal and general cropping categories to make the two sets of data compatible (see Appendix A4). Therefore, the farm types modelled for Devon include the following: cereal and general cropping, mixed, lowland cattle and sheep, LFA cattle and sheep and dairy.

Each of these farm types is analysed in a stepwise manner to illustrate the introduction of the SIP, degression of the SIP, modulation of the degressed monies and the amount returned to farms through rural development payments as well as the possibility of matched funding of modulated RDR funds. The dynamics of the SIP are modelled using coefficients derived from Moss *et al.* (2002) who predicted future prices, livestock numbers and tonnage for cereals using the FAPRI econometric model of EU agriculture.⁷ The production and price changes that Moss *et al.* (2002) predict are based on three scenarios:

- **A** - there are no production responses to decoupling direct payments and producers base their decisions only on the basis of market returns;
- **B** - 30% of production responses are accounted for by decoupled direct payments;
- **C** - 60% of production responses are accounted for by decoupled direct payments.

The analyses of farming in Devon largely focuses on production scenario A since variations in future prices, livestock numbers and tonnage for cereals are more extreme than scenarios B and C that moderate the potential affects of the SIP. Given this focus, Appendix A5 gives the results of the other production scenarios.

Finally, it should be noted that there is considerable uncertainty regarding how modulated funds will be recycled to farming in the UK. Certainly, it does not necessarily follow that degressed income from one farming sector will be recycled back into that sector, as assumed in this analysis. While there is uncertainty of how modulated monies and matched funding, if it is available, will be redistributed, the assumption that it is returned to the farming sector it came from should only be viewed as a possible indication of what might occur and therefore results should be treated with caution.

⁷ FAPRI (Food and Agricultural Policy Research Institute, University of Missouri).

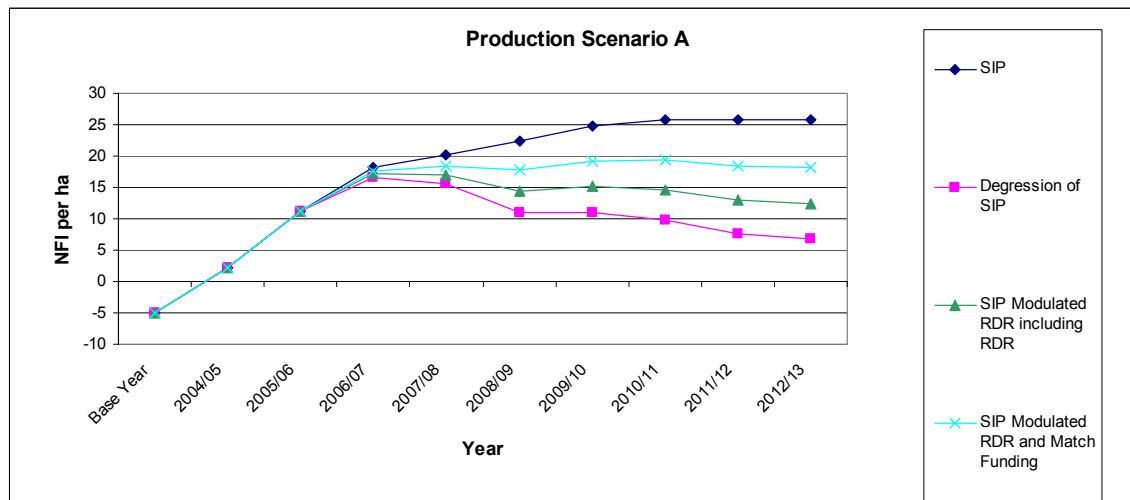
Cereal and general cropping farms

In 2002/03, the Net Farm Income (NFI) of a typical cereal farm in Devon was negative at $-\text{£}5 \text{ ha}^{-1}$ (see Figure 4.1). With the introduction of the SIP in 2004/05, NFI increases to between $\text{£}4 \text{ ha}^{-1}$ under production scenario A and $\text{£}1 \text{ ha}^{-1}$ under production scenario C (see Appendix A5:1). Part of this rise can be accounted for the changes to the cereal regime where a cut in intervention prices is compensated for by increasing level of support through direct payments.

In terms of the main cereal enterprises, changes in cereal production and prices are moderate. However, since cereal farms in Devon have minor livestock enterprises, the majority of the increase in farming income is explained by a fall in variable costs associated with reducing the number of cattle and sheep. Indeed, in 2012/13 only $\text{£}1.1 \text{ ha}^{-1}$ is a result of changes occurring in the cereal sector since increases in price are offset by decrease in production.

The introduction of degression in 2006/07 reduces the SIP by 1% thereby decreasing NFI. From this year on, NFI accounting for degression, modulation and RDR match funding scenarios diverge from the SIP (see Figure 4.1 which illustrates production scenario A). By 2012/13, without any additional changes the SIP on its own would increase the cereal and general cropping farm's NFI to between $\text{£}27 \text{ ha}^{-1}$ for production scenario A and $\text{£}9 \text{ ha}^{-1}$ under production scenario C.

Figure 4.1: NFI of Devon cereal farms under different MTR scenarios



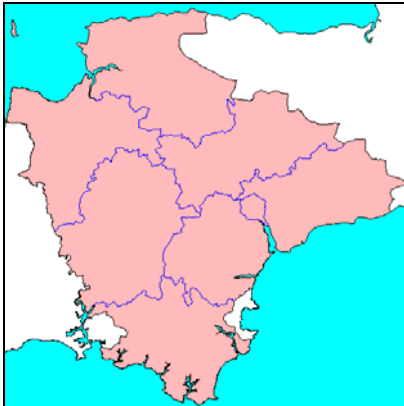
In the longer term, when the maximum degression rate is accounted for, NFI decreases to between $\text{£}8 \text{ ha}^{-1}$ under production scenario A and $-\text{£}10 \text{ ha}^{-1}$ for production scenario C. If these are compensated for by modulation, NFI ranges from $\text{£}14 \text{ ha}^{-1}$ and $-\text{£}4 \text{ ha}^{-1}$ respectively, while if match funding to the UK's RDR budget is available then further appreciation to $\text{£}20 \text{ ha}^{-1}$ and $\text{£}1 \text{ ha}^{-1}$ would occur by 2012/13, as compared to the base year.

The degree of decoupling that takes place will be of critical importance to the profitability of cereal and general cropping farms in Devon since if farmers are reluctant to make the changes necessary to break the link between production and the new SIP, then NFI could be lower than it might otherwise be.

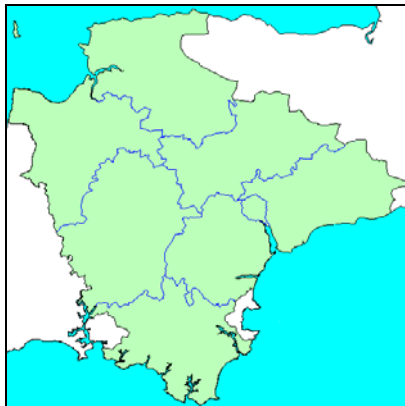
The initial low level of farming incomes from the cereal sector means that as a county the income derived from this sector is low. Indeed, under the best assumptions of production scenario A and modulated monies being recycled with addition match funding, the farming income produced from the MTR changes on cereal and general cropping farms in Devon will be approximately £1.26 million. Figure 4.2 shows the distribution of income at the district level, and while all districts start with negative NFIs, by 2012/13 none of the districts income exceeds £250,000. However, figure 4.2 does illustrate that Mid Devon and the South Hams are the most important districts for cereal and general cropping since these two areas NFI are greater than £250,000 if only the SIP is considered in 2010/11.

Figure 4.2: Cereal and general cropping farming in Devon

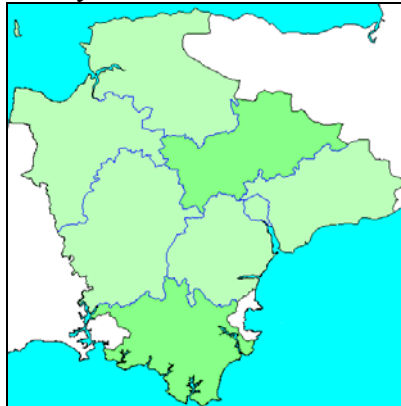
Base 2003-04



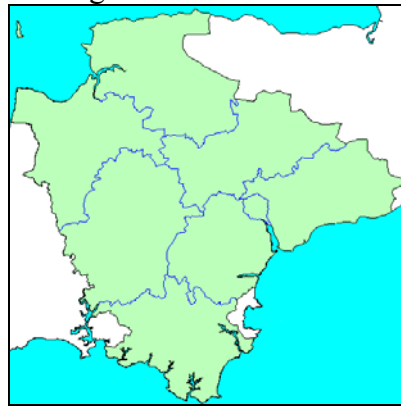
Start of Modulation 2006-07



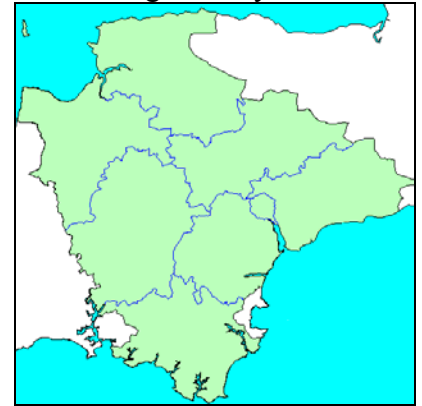
SIP by 2010-11



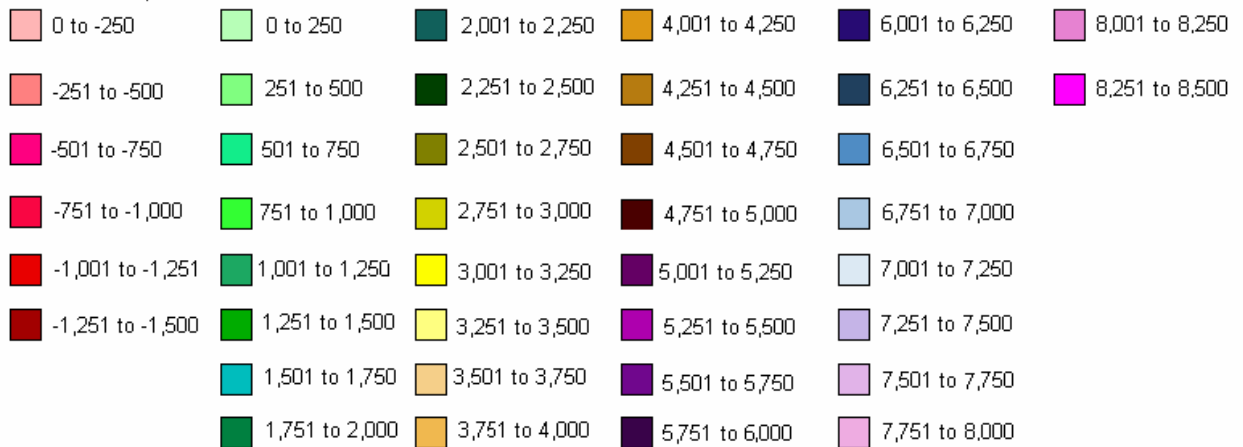
End of Modulation 2012/13 with match funding



End of Degressivity 2012-13



KEY: In £,000s



Mixed farms

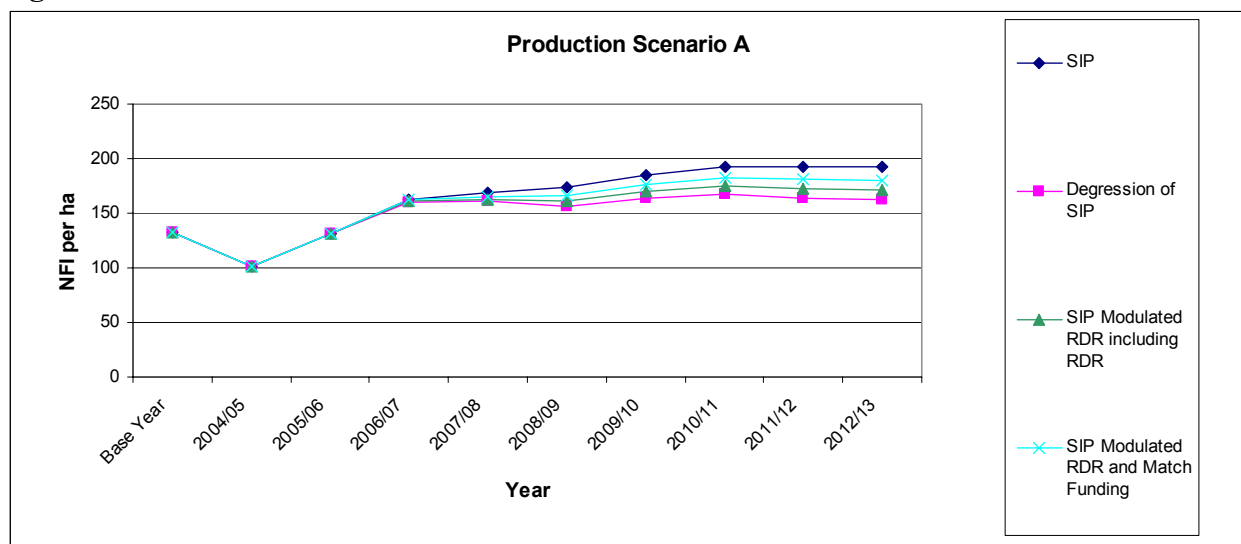
In 2002/03 the NFI of a typical mixed farm in Devon was £133 ha⁻¹ (see Figure 4.3). However, with the introduction of the SIP in 2004/05, NFI is reduced to between £101 ha⁻¹ under production scenario A and £121 ha⁻¹ under production scenario C (see Appendix A5.2). These decreases reflect the lower subsidy payments in the years on which the SIP was

based. Nevertheless, in 2005/06, NFI is likely to make a modest recovery, marginally exceeding the base year for production scenarios B and C, as the dynamic changes to the livestock enterprise ameliorate the losses from the introduction of the SIP.

The introduction of depression in 2006/07 checks the increasing NFI derived from the dynamic changes from the introduction of SIP. Thus for 2006/07 under production scenario A, NFI is £161 ha⁻¹, while under production scenario C it is £145 ha⁻¹. By 2012/13, the dynamic changes from production scenario A will have ameliorated depression as NFI has marginally increased to £162 ha⁻¹. However, under production scenario C, the greater production responses accounted for by the decoupled payment means that NFI is £126 ha⁻¹. Similar to cereal and mixed farms, but to a much greater extent, these changes in income result from reductions in the variable costs of livestock enterprises as livestock numbers fall but also from an appreciation of the income from sheep enterprises.

By 2012/13, when maximum depression is in place, the NFI of Devon's mixed farms rises to £171 ha⁻¹ if match funding of the RDR budget is made available. This reduces to £163 ha⁻¹ and £145 ha⁻¹ respectively for production scenarios B and C. If additional funding is not forthcoming then NFI for all scenarios is approximately £10 ha⁻¹.

Figure 4.3: NFI of Devon mixed farms under different MTR scenarios



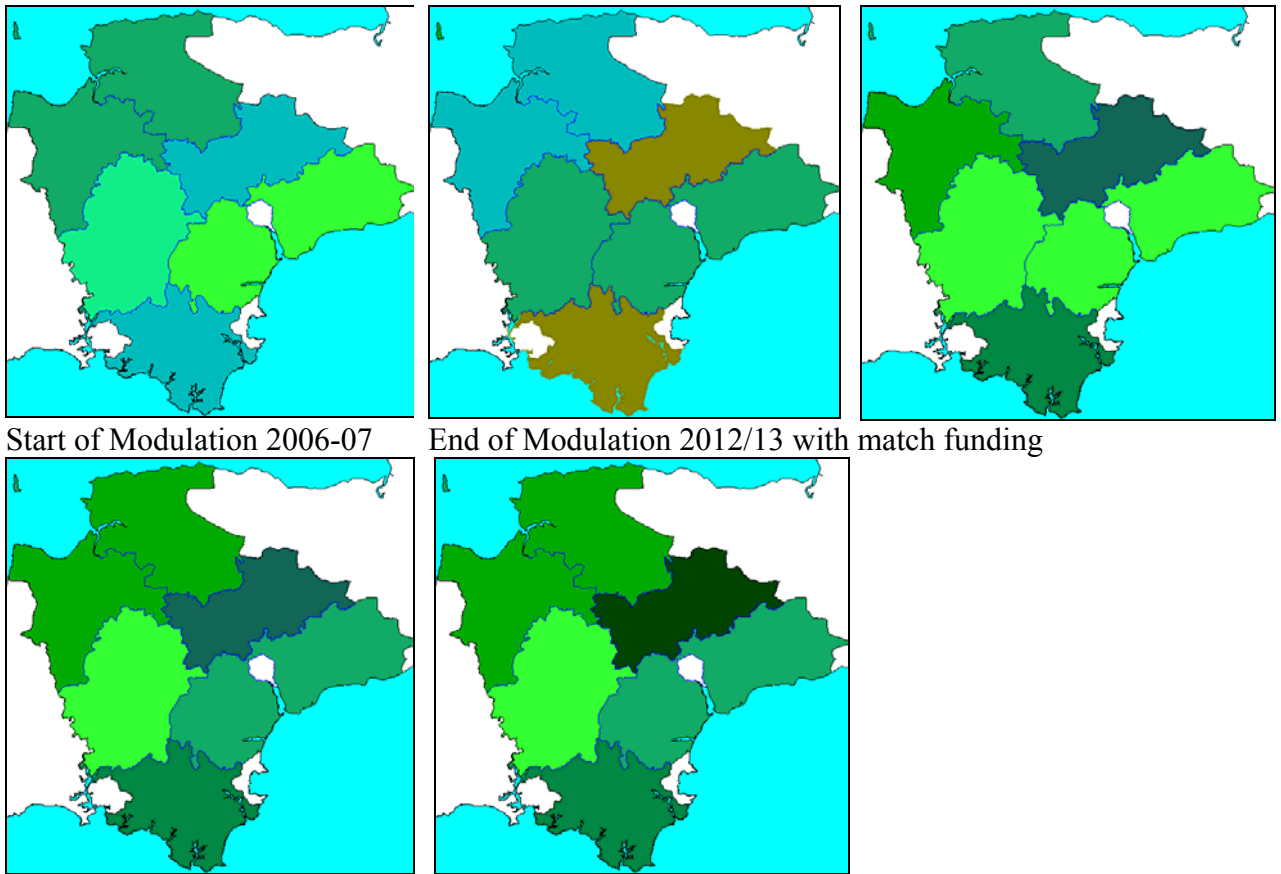
Compared to other sectors of farming in Devon, mixed farms are relative prosperous. As such, under the assumptions of production scenario A with modulated monies being recycled and additional matched funding, the farming income produced from mixed farms will perhaps increase to £10.4 million. Figure 4.4 illustrates the distribution of this income at the district level. From this, Mid Devon and the South Hams are seen to be particularly important and it is these two districts that are likely to gain most from improvements in farming incomes for mixed farms. Indeed, in Mid Devon this could be up to £850,000.

Figure 4.4: Mixed farming in Devon

Base 2003-04

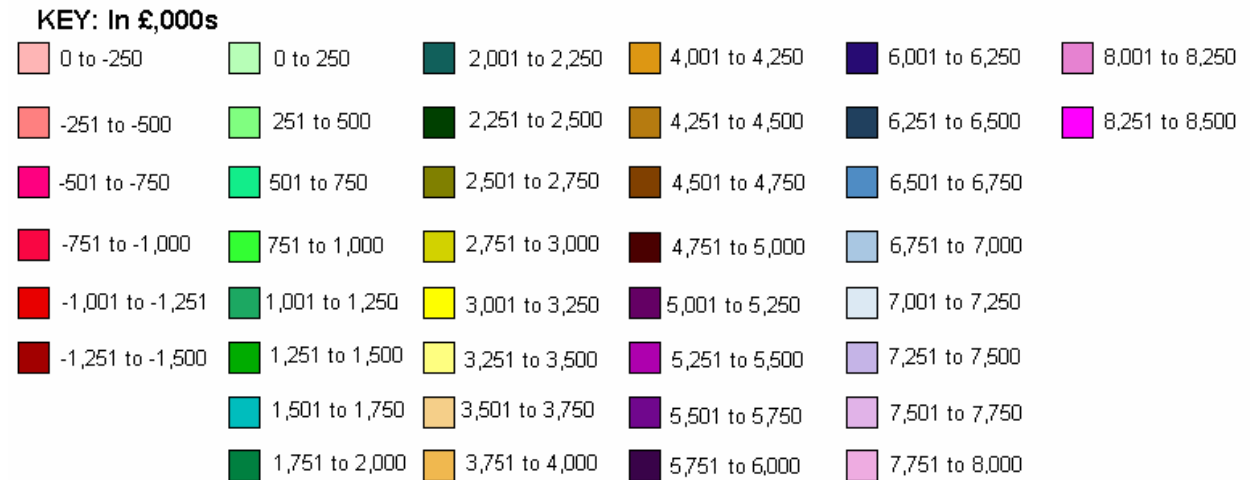
SIP by 2010-11

End of Degressivity 2012-13



Start of Modulation 2006-07

End of Modulation 2012/13 with match funding

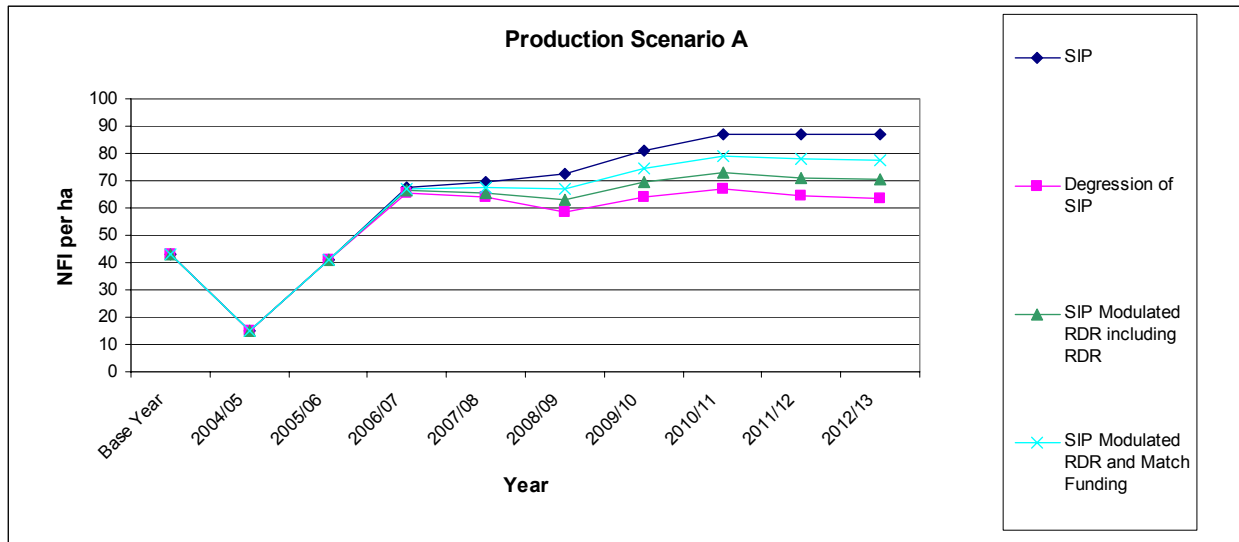


Lowland cattle and sheep farms

In 2002/03, the NFI of a typical Devon lowland cattle and sheep farm was £43 ha⁻¹ (see Figure 4.5 and Appendix A5.3). However, with the introduction of the SIP in 2004/05, NFI is predicted to decrease to £15 ha⁻¹ under production scenario A, £23 ha⁻¹ under production scenario B, and £32 ha⁻¹ under production scenario C. These reductions reflect (1) lower subsidy payments paid to farms in the years on which the SIP is based, and (2) the reduction in livestock numbers and their market prices. Nevertheless, by 2006/07, as depression

begins, NFI is expected to recover. This is partly because of reduced variable costs in the livestock enterprises and partly because of increased profitability in the sheep enterprise as sheep prices increase.

Figure 4.5: NFI of Devon lowland cattle and sheep farms under different MTR scenarios

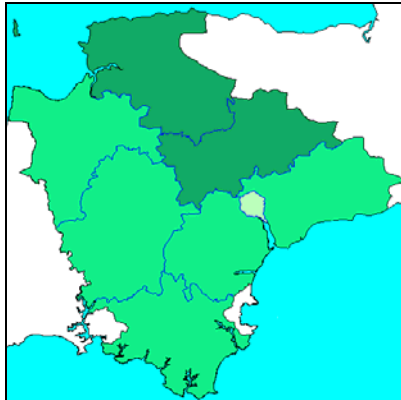


By 2012/13, when maximum degression is in place, the NFI of Devon lowland cattle and sheep farms rise to £70 ha⁻¹ if match funding of the RDR budget is made available. While lower, the production scenarios B and C modelled for lowland cattle and sheep farms also exhibit NFI that are above the base year of 2002/03 (see Appendix A5.3). Therefore, under all scenarios this type of farm in Devon is likely to benefit from all aspects of the MTR.

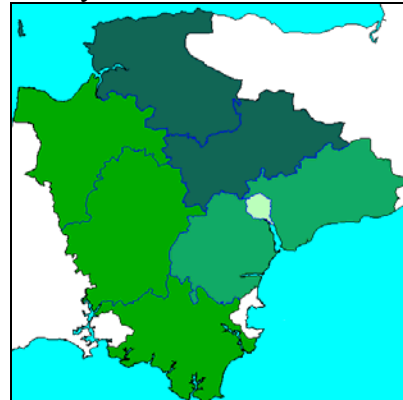
In the base year, 2002/03, NFI from lowland cattle and sheep farming amounted to £5.4 million. However, if modulated monies are recycled and additional matched funding is forthcoming, then this income potentially could increase to £9.7 million, under production scenario A, which represents a 79% increase in income above the base year. In terms of districts (see Figure 4.6), Mid and North Devon are particularly import for this type of farming and by 2012/13, each could produce a NFI of nearly £2million.

Figure 4.6: Lowland cattle and sheep farming in Devon

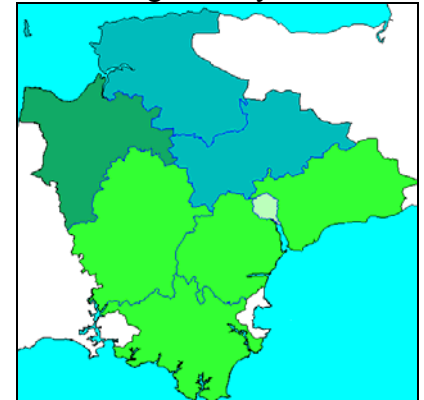
Base 2003-04



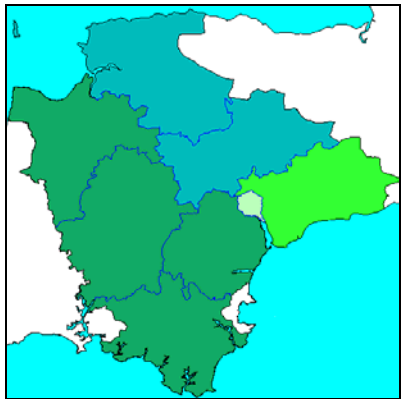
SIP by 2010-11



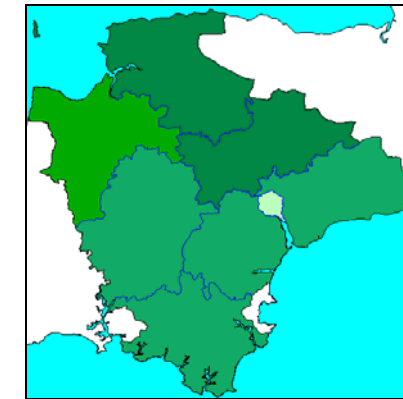
End of Degressivity 2012-13



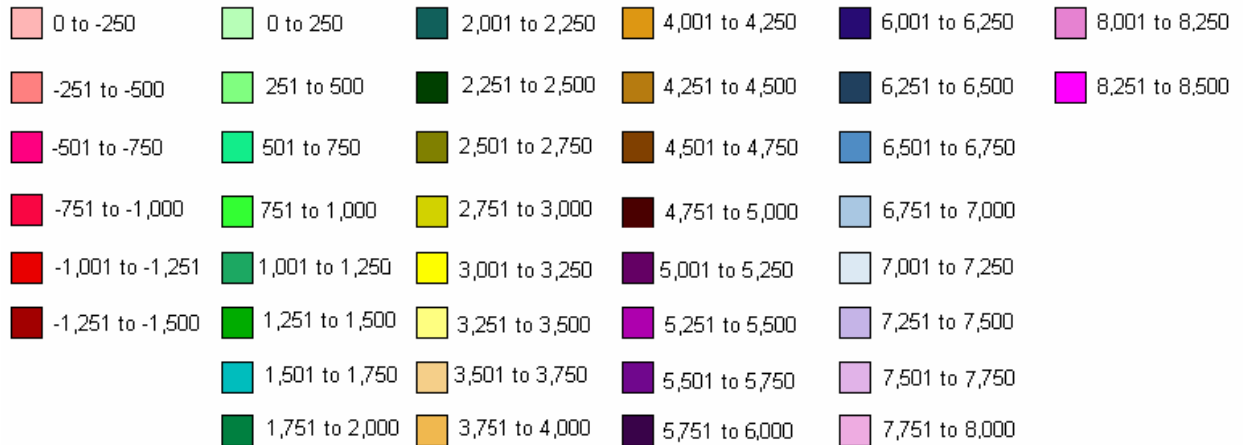
Start of Modulation 2006-07



End of Modulation 2012/13 with match funding



KEY: In £,000s

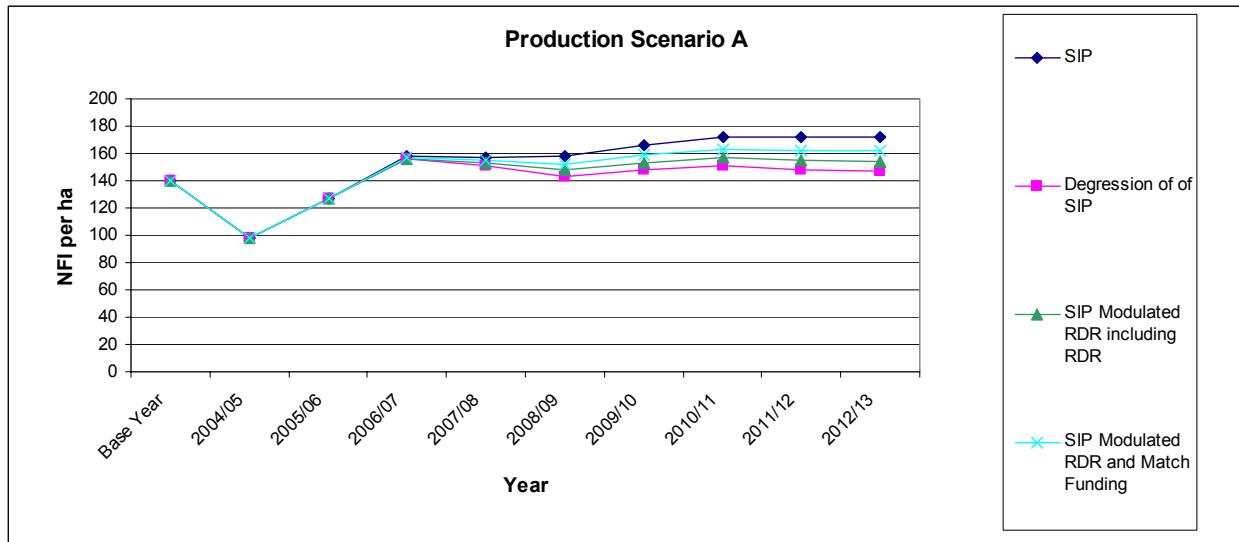


LFA cattle and sheep farms

In 2002/03, the NFI of a typical Devon LFA cattle and sheep farm was £140 ha⁻¹ (see Figure 4.7 and Appendix A5.4) and is likely to be reduced with the introduction of the SIP in 2004/05 by 30% to £98 ha⁻¹. As with lowland cattle and sheep farms, this reflects (1) lower subsidy payments paid to farms in the years on which the SIP is based, and (2) the reduction in livestock numbers and their market prices. On this latter point, upland cattle enterprises

might lose up to £23 ha⁻¹ while upland sheep enterprises could lose £36 ha⁻¹. However, by the 2010/11 when the dynamic effects of introducing the SIP is expected to have ended, suckler cow enterprises on Devon's LFA farms will benefit by £32ha⁻¹ as compared to the base year, 2002/03. This benefit would be reduced if production responses are accounted for by the decoupled direct payments under scenarios B and C.

Figure 4.7: NFI of Devon LFA cattle and sheep farms under different MTR scenarios

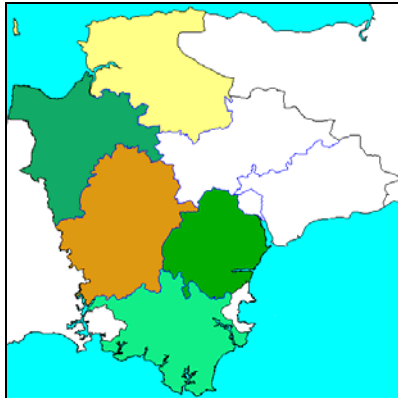


By 2012/13, when maximum degression is in place, the NFI of Devon LFA cattle and sheep farms rise to £162 ha⁻¹ if match funding of the RDR budget is made available. If this is not forthcoming then NFI is £8 ha⁻¹ lower at £154 ha⁻¹. However, if no modulated money is recycled to LFA cattle and sheep farms, NFI is £117 ha⁻¹, which is £14 ha⁻¹ more than the base year, 2002/03. Only under scenario C, in which production response are 60% accounted for by the SIP, would LFA farms be worse off than the base year. In this case, with no match funding of modulated income NFI would be £136 ha⁻¹.

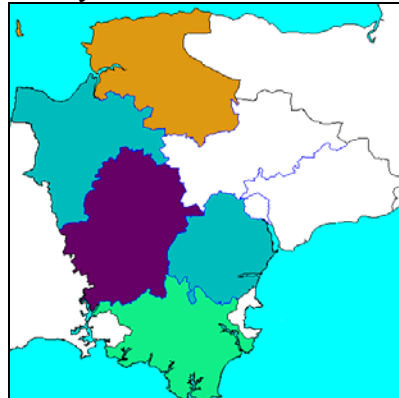
In the base year, 2002/03, NFI from LFA cattle and sheep farming amounted to £10.7 million. However, if modulated monies are recycled and additional matched funding is forthcoming, then this income potentially could increase to £12.4 million, under production scenario A. While in absolute terms, this increase is less than that expected from lowland cattle and sheep farming; this £1.7 million increase will be particularly important to West Devon and to lesser extent North Devon (see Figure 4.8). In terms of these districts, the rural economy of West Devon could benefit from the MTR by £650,000 while North Devon could benefit by £530,000 in 2012/13.

Figure 4.8: LFA farming in Devon

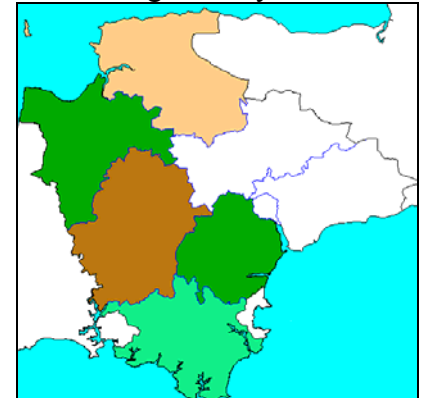
Base 2003-04



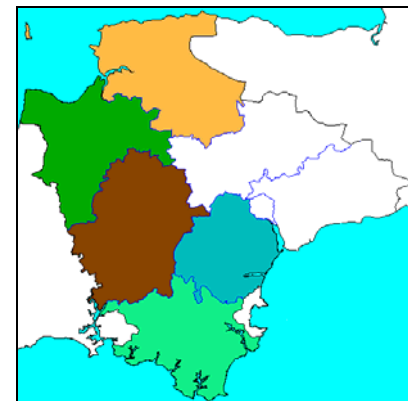
SIP by 2010-11



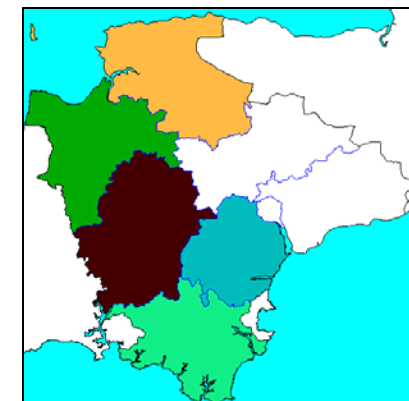
End of Degressivity 2012-13



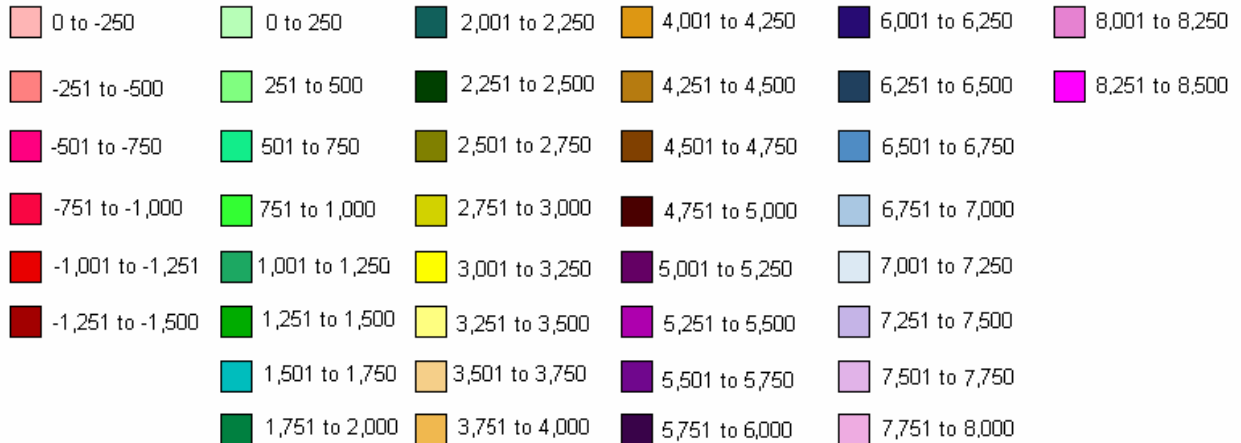
Start of Modulation 2006-07



End of Modulation 2012/13 with match funding



KEY: In £,000s

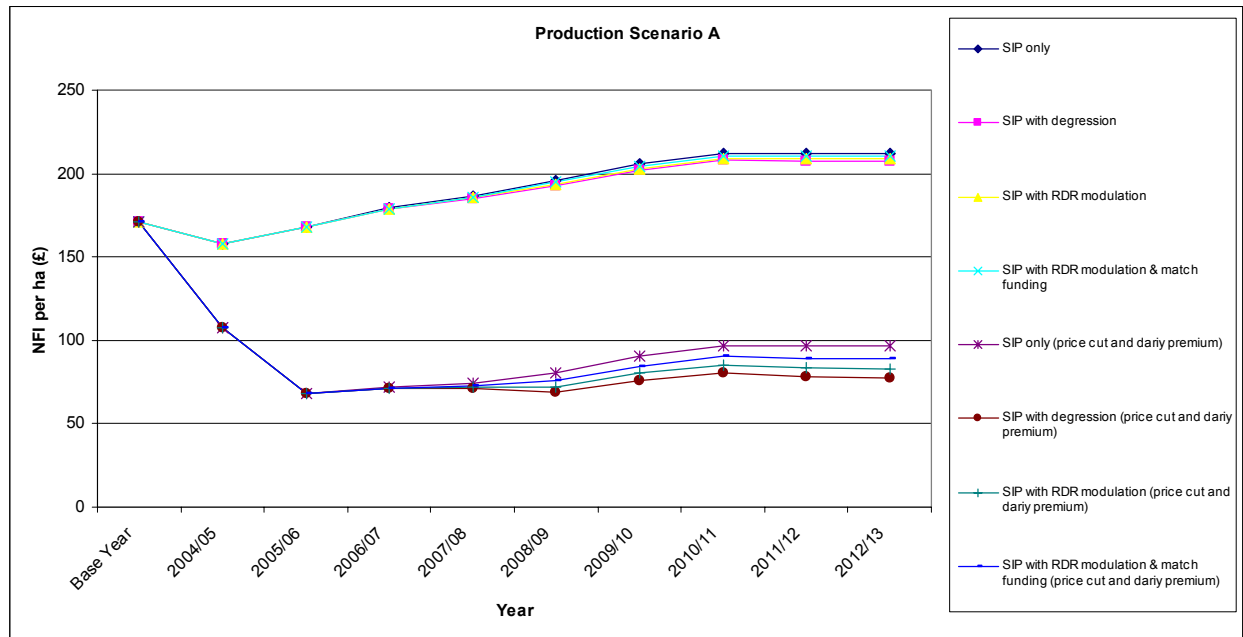


Dairy farms

In 2002/03, the base year, the NFI of a typical Devon dairy farm was £171 ha⁻¹ (see figure 4.9) and of this only £43 ha⁻¹ is attributable to subsidy payments, through non-dairy cattle enterprises and cereals. Therefore, the introduction of the SIP in 2004/05 influences NFI through the dynamic changes expected to occur in the beef sector rather than the dairy sector that Moss *et al.* (2002) suggest will be negligible. As such, in the short term NFI is expected

to decrease to £165 ha⁻¹. In 2006/07, the SIP is marginally above the €5,000 degressivity threshold thus triggering the mechanism to begin. In successive years of the SIP, NFI is expected to increase to £212 ha⁻¹ by 2010/11 as a consequence of changes to beef cattle and cereal enterprises rather than the main dairy enterprise. If scenarios B and C are modelled instead of A, the NFI of dairy farms in 2010/11 is expected to be lower at £198 ha⁻¹ and £185 ha⁻¹ respectively.

Figure 4.9: NFI of Devon dairy farms under different MTR scenarios

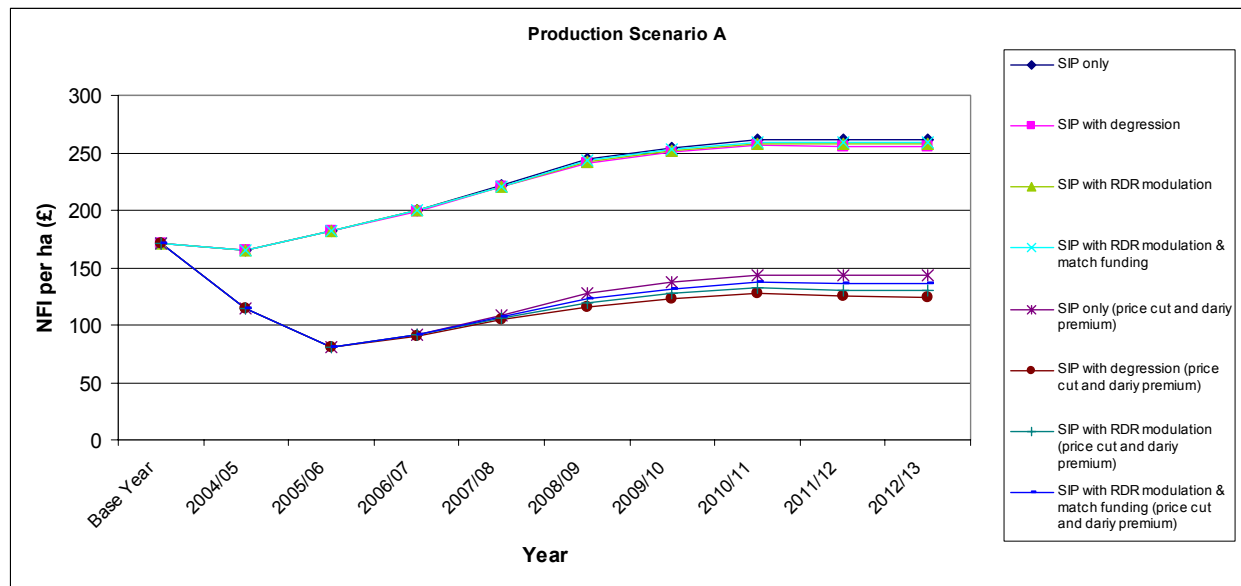


With the introduction of depression, NFI is only marginally decreased because of the low value of the SIP. Consequently, in 2010/11 the NFI of dairy farms is expected to be reduced by only £5 ha⁻¹. However, since the SIP is low in value, the modulated monies returning to will also be insignificant at less than £2 ha⁻¹.

When changes to quotas are introduced into the analysis, 0.5% each year from 2004/05 to 2006/07 and an additional 1% in 2007/08, the position of dairy farms improves. Under the dynamic changes of Production Scenario A, NFI increases to £221 ha⁻¹ in 2007/08 as compared to £171 ha⁻¹ in the base year, and £186 ha⁻¹, when quota changes are not modelled. By 2010/11 there will be further appreciation in NFI to £261 ha⁻¹ as a result of the dynamic changes to the beef and cereal enterprises of dairy farms (see Figure 4.10).

If however, the dairy premium is more explicitly modelled, the future for dairy farmers is less optimistic. The introduction of the SIP coincides with a reduction in the target price for milk, and therefore losses are compounded with NFI falling as low as £68 ha⁻¹ in 2005/06. From this low point, NFI will recover as the value of the dairy premium increases and by 2010/11 it will have appreciated to £97 ha⁻¹ without the effects of depression or modulation.

Figure 4.10: NFI of Devon dairy farms under different MTR scenarios when milk quotas are increased



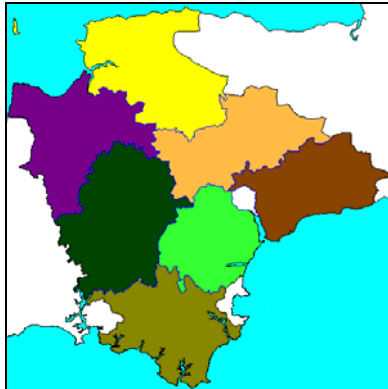
By explicitly modelling the dairy premium when milk quotas are increased the situation revealed is perhaps marginally more optimistic than previously stated. Although, NFI is reduced to £81 ha⁻¹ by 2005/06, it recovers to £144 ha⁻¹ in 2010/11, and this is slightly less in 2012/12 at £136 ha⁻¹ if RDR modulated monies are match funded by the UK treasury.

In terms of districts, Torridge is the most important for dairy farming contributing over £5.6 million to the sector's income in Devon in the base year, 2002/03 (see Figure 4.11). However, much of the change in this sector is a factor of changes in the beef and sheep sectors rather than dairying *per se*. Nevertheless, these minor enterprises characterise part of dairy farming and the increases are just as valid. Therefore, by 2010/11 when the influence of dynamic changes is expected to have ended, the NFI of dairying in Devon increase from £23.1 million in the base year, 2002/03 to £28.4 in 2010/11. Furthermore, Torridge benefits from an increase in farming incomes in 2010/11 of £1.19 million, while East Devon's rural economy could benefit by £0.98 million in the same year. Furthermore, since the affect of depression and modulation are marginal as compared to other sectors changes to the NFI of dairy farming is limited.

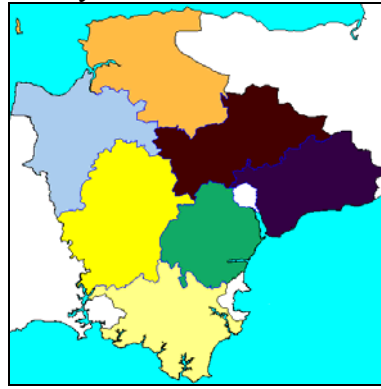
With the complication of the introduction of the dairy premiums to offset cuts in the target price for milk and increases in dairy quota, NFI could either be depressed or appreciated further. The differential impact on the districts could be quite considerable. For example, in 2010/11, Torridge may benefit from a further £1.6 million or alternatively, if cuts in the target price for milk are made explicit, NFI could be £2.3 million worse off than expected.

Figure 4.11: Dairy farming in Devon

Base 2003-04



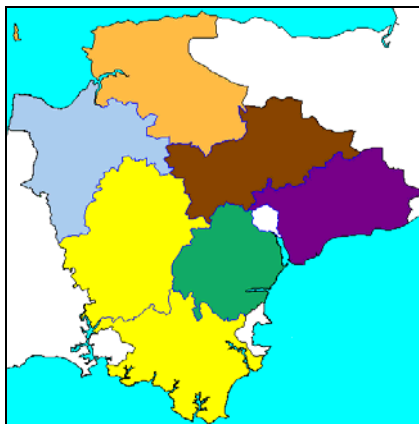
SIP by 2010-11



End of Degressivity 2012-13



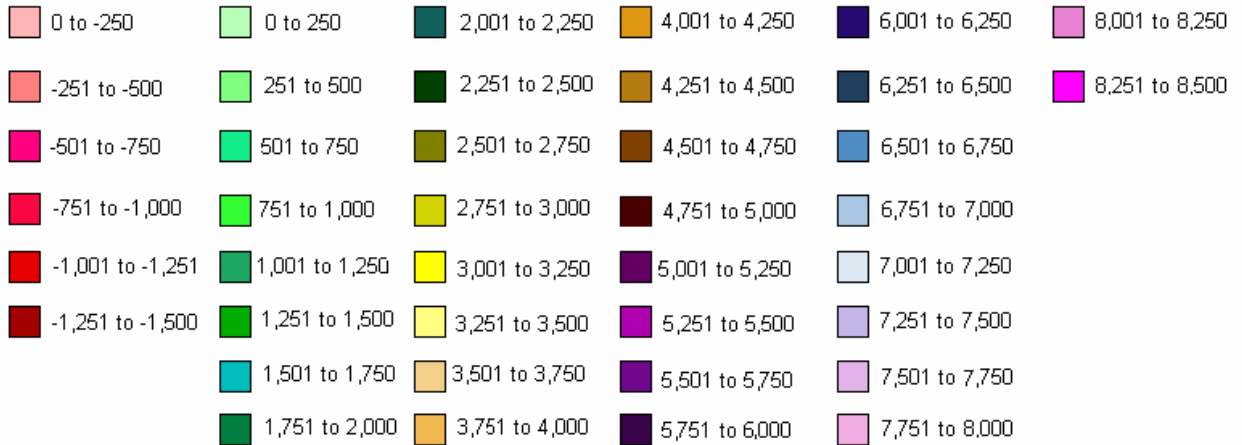
Start of Modulation 2006-07



End of Modulation 2012/13 with match funding



KEY: In £,000s



Farm incomes in Devon

Before the MTR is implemented, the NFI received by Devon farms totalled £46.7m in the base year, 2002/03. Of this, dairying contributed nearly half with £23.1 million (see Table 4.1), while LFA cattle and sheep farming and mixed farming contributed £10.7 million and £7.7 million respectively. When the SIP is introduced, the dynamic effects from production

and price changes are likely to lead to an appreciation in NFI of 40% above the base year, 2002/03, to £65.3 million in 2010/11. Dairying and lowland cattle and sheep farming contribute the greatest amount to this increase at approximately £5 million each. More importantly, since Moss *et al.* (2002) suggest that the dynamic changes expected to occur in the dairy sector will be negligible, and the greatest alterations to production and prices are likely to happen in the beef and sheep sectors as it is these enterprises on dairy farms the account for the majority of the increase in the NFI of dairy farming. Therefore, changes to lowland cattle and sheep will be critical to the future farming income of Devon. These changes at the Devon level, as well as those that will be given for the district level are modelled assuming production scenario A. As such, the following analysis demonstrates the *maximum* income in which the rural and farming economies of Devon could benefit.

Table 4.1: Changes to NFI in Devon

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal & general cropping	51,533	-257,662	1,403,295	412,596	708,784	1,004,973
Mixed	57,650	7,667,330	11,119,956	9,349,630	9,878,903	10,408,176
Lowland cattle & sheep	125,468	5,395,150	10,895,741	7,945,983	8,827,870	9,709,756
LFA cattle & sheep	76,633	10,728,676	13,174,855	11,247,430	11,823,671	12,399,911
Dairy	135,300	23,136,215	28,741,785	28,014,551	28,231,971	28,449,392
TOTAL	446,584	46,669,709	65,335,634	56,970,190	59,471,199	61,972,208
Percentage Change		1.00	1.40	1.22	1.27	1.33
Dairy with quota changes ¹	135,300	23,136,215	35,323,011	34,595,776	34,813,197	35,030,618
TOTAL	446,584	46,669,709	71,916,859	63,551,416	66,052,425	68,553,434
Percentage Change		1.00	1.54	1.36	1.42	1.47
Dairy with quota changes ²	135,300	23,136,215	19,467,197	16,812,927	17,606,472	18,400,016
TOTAL	446,584	46,669,709	56,061,045	45,768,567	48,845,699	51,922,832
Percentage Change		1.00	1.20	0.98	1.05	1.11

Notes

¹assumes no cut in target price

²assumes cuts in target price

See Appendix A2 for further information.

The introduction of degression cuts Devon's NFI by 18% as compared to when only the SIP is considered. Nevertheless, by 2012/13, NFI shows an appreciation of 23% above the base year at £56.9 million. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the county's income from farming increases to approximately

£63.6 million, which is an increase of 36% above the base year, 2002/03. If on the other hand, cuts in target prices and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be considerably lower at £45.8 million, which is only 98% of the NFI in base year, 2002/03; thus representing a slight decrease. Clearly, changes to the dairy regime and the likely impacts of this will have a significant influence on the county's future farming incomes.

With the assumption of modulated income flowing back to farms in Devon without any matched funding NFI in 2012/13 increases to £59.4 million. On the other hand, if match funding is forthcoming, NFI improves to just over £62 million. Therefore, when match funding of the modulated RDR monies occurs, farming incomes in Devon may be up to 33% better off as compared to the base year, 2002/03. When the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, NFI will be only be 11% above the base year at £51.9 million. Therefore, even if the more severe changes to the dairy regime represent the worst case scenario, farming incomes in Devon in the longer term are likely to improve.

In summary, changes resulting from the introduction of the SIP are likely to lead to increasing farm incomes in Devon, particularly for lowland cattle and sheep farms and other farms that have suckler cow, beef and sheep enterprises. While changes to the dairy sector are more difficult to predict, even under the assumption that the dairy premium will cover only half of the losses from a cutting of the target price for milk, incomes for dairy farming are likely to increase in the longer term, and this, in turn, contributes to the overall appreciation of farming incomes as a result of the MTR proposals.

Farm incomes at the District level

The impact of the MTR on NFI at district level is examined below (in alphabetical order). Appendix 6 gives the data for each district and the overall percentage change in farming incomes that is likely to occur as the various parts of the MTR are introduced and are fully implemented.

East Devon

Income derived from the four main farming types in East Devon (LFA cattle and sheep farms are not present in this district) for the base year, 2002/03 was just under £6 million. Of this, dairying contributed £4.6 million in the base year partly because East Devon is the second most important region for this type of farming in the county and partly because dairy farms have the highest level of NFI as compared to other farming types.

With the implementation of the SIP, by 2010/11 the total NFI of farms in East Devon will have increased by 39% to £8.3 million. While dairying contributes the largest absolute increase at £1.1 million, cereal and general cropping farming exhibits greatest relative increase because cereal farming in the base year had a negative NFI, but as a result of changes to production and prices from the implementation of the SIP its contribution to the district's NFI has improved five-fold.

When depression is accounted for, the NFI of East Devon by 2012/13 is reduced to £7.5 million. Since dairy farming is initially assumed to be unaffected by increases in milk quotas and the introduction of the dairy premium, its relative contribution to the district's NFI has decreased from 77% to 69%. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming increases to £8.8 million. If on the other hand, the cuts in target prices and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is lower at £5.3 million which is 12% lower than the base year, 2002/03.

With the assumption of modulated income flowing back to East Devon farms without match funding, by 2012/13 NFI increases, after depression, to £7.8 million, while with match funding this is higher at just under £8 million. Therefore, when match funding of the modulated RDR monies occurs, the farming economy in East Devon may be up to 33% better off than in the base year, 2002/03. However, if the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, this district of Devon will be only £9,053 better off than in the base year.

In summary, the changes that occur to the dairy regime will be of critical importance to East Devon. If the changes to the target price only cause moderate alteration in the NFI's of dairy farms, then East Devon will be better off as a consequence of the MTR. However, if the changes to milk prices impact more deeply and the NFI of dairy farms are affected more substantially, the district will not benefit even though the NFI of cereal, mixed and cattle and sheep farms improve.

Exeter

Farming in Exeter occurs in the rural-urban fringe and therefore its scale is minor as compared to the other districts. Nonetheless, cereal and lowland cattle and sheep farming occur within its boundaries. While the absolute income from farming is extremely marginal, £13,324 in the base year, 2002/03, as compared to other districts, when SIP is introduced, Exeter's NFI increases three fold. However, with depression this is reduced to 93% above the base year and when modulated money is recycled, NFI by 2012/13 is likely to increase to £30,544 and £35,339 if match funding is forthcoming. However, compared to other districts in Devon, these changes in absolute terms are insignificant.

Mid Devon

The agricultural pattern of Mid Devon comprises cereal and general cropping, mixed, lowland cattle and sheep and dairy farming. Overall, in the base year these contributed approximately £6.5 million to the district's NFI of which dairying was responsible for 60% of this value and mixed farming for a further 25%. Furthermore, since Mid Devon contains the second greatest area of cereal and general cropping farms in the county, this sector, as compared to other districts, incurs a higher loss in the base year totalling nearly £50,000.

When the SIP is introduced, the dynamic effects by 2010/11 are likely to lead to an appreciation in NFI to £9.6 million. Of this, while the largest absolute increase of £1.09 million relates to lowland cattle and sheep farming, dairying contributes £0.9 million, as a result of cattle and sheep enterprise on their farms, and mixed farms add a further £0.75

million. Similar to East Devon, cereal and general cropping farming has the highest relative increase in NFI.

The introduction of depression cuts Mid Devon's NFI to £8.3 million in 2012/13. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming increases to £9.4 million, which is an increase of 44% above the base year, 2002/03. If on the other hand, cuts in target prices and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be lower at approximately £6.5 million, which is 99% of the NFI in base year, 2002/03.

With the assumption of modulated income flowing back to Mid Devon farms without match funding, by 2012/13 NFI increases to £8.7 million. If match funding is forthcoming, this improves to just over £9 million. Therefore, if match funding of the modulated RDR monies occurs, farming in Mid Devon may benefit up to 39% over the base year, 2002/03. However, if the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, this district of Devon will still benefit as NFI increases by 14% giving £7.4 million.

In summary, the MTR has positive effects on all farming sectors in Mid Devon improving the district's NFI. Of particular importance will be the outcome of changes to the dairy regime as this could account for up to an extra £2.7 million if only the dynamic changes from the introduction of the SIP and quota increases are accounted for rather than explicitly modelling changes to cuts in target prices and dairy premiums.

North Devon

The agricultural pattern of North Devon comprises all five main farming types including a substantial area of LFA cattle and sheep farming on Exmoor. Overall, in the base year these contributed approximately £8.5 million to the district's NFI. Of this, LFA cattle and sheep farming was responsible for 40% while dairying was responsible for a further 36% and mixed and lowland cattle and sheep farm a further 12% each. Therefore, North Devon is very dependent on the main types of livestock farming and on how the MTR will affect these.

By 2010/11, after the dynamic effects from production and price changes resulting from the introduction of the SIP, NFI in North Devon is likely to benefit by 38%, rising to nearly £11.8 million, which is highest level that NFI reaches as compared to all other districts. The largest absolute increase of £1.06 million relates to lowland cattle and sheep farming, while LFA cattle and sheep farms and dairying each contribute over £0.75 million.

The introduction of depression will cut North Devon's NFI by 2012/13 and although it remains 19% above the base year it has decreased by £1.6 million to £10.1 million. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming increases to £11 million. If on the other hand, cuts in target prices and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be lower at approximately £9.2 million, which is only an appreciation in NFI of 8%.

With the assumption of modulated income flowing back to North Devon farms without match funding of modulated RDR monies, by 2012/13 NFI will increase to £10.6 million. However, if match funding is forthcoming, this improves to just over £11 million. Therefore, when match funding of the modulated RDR monies occurs, farming in North Devon may benefit by up to 30%. On the other hand, when the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, the NFI for this district of Devon will be have appreciate by less, equating to approximately £9.8 million in 2012/13, compared to the base year of £8.5 million.

In summary, the MTR has positive effects on all farming sectors in North Devon and will improve the district's NFI. Of less importance will be the outcome of changes to the dairy regime although this could potentially reduce the total NFI of this district. Indeed, the dynamic changes in the other sectors, particularly those that are likely to affect both LFA and lowland cattle and sheep farming means that North Devon is will benefit from MTR changes.

The South Hams

The agricultural pattern of the South Hams comprises all five main farming types although LFA farming is limited to the northern fringe where it incorporates part of Dartmoor. The two largest contributors are dairying at £2.66 million and mixed farming at £1.6 million, which taken together account for 79% of the district's NFI. Furthermore, since the South Hams contains the greatest area of cereal and general cropping farms in the county, this sector, compared to other districts, incurs the highest loss in the base year totalling £51,636. Overall, the total NFI of the South Hams in the base year, 2002/03 is £5.4 million, which is one of the lowest compared to the other districts.

When the SIP is introduced, the dynamic effects from production and price changes are likely to lead to an appreciation in NFI of 46% to £7.9 million by 2010/11. Of this, the largest absolute increase of £0.73 million is attributed to mixed farming, while lowland cattle and sheep farming contribute nearly £0.7 million. Similar to East Devon and Mid Devon, cereal and general cropping farming has the highest relative increase in NFI.

The introduction of degression cuts the South Hams' NFI. Nevertheless, by 2012/13, NFI increases by 26% above base year value to £6.8 million. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming increases to £7.6 million. If on the other hand, cuts in target prices, quotas and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be lower at approximately £5.5 million, which is 2% above the NFI in base year, 2002/03.

With the assumption of modulated income flowing back to farms in the South Hams without any match funding, NFI increases in 2012/13 to £7.1 million. On the other hand, if match funding is forthcoming, NFI improves to just over £7.46 million. Therefore, when match funding of the modulated RDR monies occurs, farming in the South Hams may benefit by up to 38%. However, when the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, this district of Devon will only benefit by 17%.

In summary, the MTR has positive effects on all farming sectors in the South Hams thus improving the district's overall NFI. Of particular interest will be how the dynamic effects caused by introducing the SIP affect mixed farming and lowland cattle and sheep farming. Furthermore, since the area has the largest area of cereal and general cropping agriculture, changes to the production and prices of wheat through the dynamic changes modelled could be an important factor in for the continuation of this type of farming giving its low level of profitability as compared to other farming sectors in Devon.

Teignbridge

The agricultural pattern of Teignbridge comprises all five main farming types with dairying being the least significant in terms of area although it is the second largest contributor in terms of NFI. Of the £3.6 million NFI that farming in this district generated, LFA cattle and sheep contributed £1.3 million (40% of the total). Overall, Teignbridge has the lowest NFI of all the districts, excluding Exeter, and this is because in terms of agricultural land it is considerable smaller.

By 2010/11, after the dynamic effects from production and price changes from the introduction of the SIP, NFI is likely to appreciate by 48% to £5.36 million. While the largest absolute increase of £0.65 million is attributed to lowland cattle and sheep farming, all other farming types contribute between £0.2 and £0.35 million in this district.

The introduction of degression cuts Teignbridge's NFI. Nevertheless, by 2012/13, NFI increases by 22% above the base year at £4.4 million. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming marginally increases to just under £4.7 million. If on the other hand, cuts in target prices, quotas and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be lower at approximately £4 million, which is 11% above the NFI in base year, 2002/03.

With the assumption of modulated income flowing back to farms in Teignbridge without any match funding NFI increases in 2012/13 to £4.7 million. On the other hand, if match funding is forthcoming, NFI improves to just under £5 million. Therefore, when match funding of the modulated RDR monies occurs, farming economy in Teignbridge may benefit by 38%. However, when the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, this district of Devon will only benefit by 28%. Therefore, the NFI of Teignbridge has the greatest relative appreciation compared to all other rural districts of Devon even though its absolute income values are less.

In summary, the MTR will benefit all farming sectors in Teignbridge thus improving the district's overall NFI. The low level of dairying in this districts means that NFI over the longer term is likely to perform relatively better than most other districts of Devon.

Torridge

The agricultural pattern of Torridge comprises all five main farming types. Overall, in the base year these contributed approximately £8.65 million to the district's NFI, which is the

highest of all districts. Furthermore, dairying was the largest contributor and was responsible for 65% of the districts farming income, while mixed farming and LFA cattle and sheep farming account for a further 27%.

When the SIP is introduced, the dynamic effects through changes to production and commodity prices are likely to lead to an appreciation in NFI of 35% to £11.7 million by 2010/11. Of this, all sectors with the exception of dairying have increased their relative contribution to the NFI in Torrridge. Nevertheless, dairy farming still contributes 60%.

The introduction of depression cuts Torrridge's NFI. Nevertheless, by 2012/13, NFI increases by 19% over the base year at £10.1 million. If increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming increases to just over £11 million. If on the other hand, cuts in target prices, quotas and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be lower at approximately £8.6 million, which is only 1% above the NFI in base year, 2002/03.

With the assumption of modulated income flowing back to farms in Torrridge without any match funding NFI increases in 2012/13 to £10.6 million. On the other hand, if match funding is forthcoming, NFI improves to over £11 million. Therefore, when match funding of the modulated RDR monies occurs, farming in Torrridge may benefit by 30%. However, when the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, this district of Devon will be only 15% better off at £9.8 million.

In summary, the MTR has positive effects on all farming sectors in Torrridge thus improving the district's overall NFI. Similar to East Devon, the outcome of changes to the dairy regime will be crucial as this could account for up to an extra £4 million if only the dynamic changes from the introduction of the SIP and quota increases are accounted for rather than explicitly modelling changes to cuts in target prices and dairy premiums. However, the dynamic changes in the other sectors, particularly those that affect mixed farming and lowland cattle and sheep farming means that Torrridge will benefit from MTR proposals.

West Devon

The agricultural pattern of West Devon comprises all five main farming types although LFA farming accounts for 44% of the agricultural land since it incorporates a large tract of Dartmoor. Therefore, of the £7.9 million NFI in the base year, 2002/03, LFA farms contributed 52%. Of the other farm types, dairy farming is the second most important accounting for a further 31% of NFI, while lowland cattle and sheep farms despite having the same land area as dairy farms contribute only 8% to NFI.

When the SIP is introduced, the dynamic effects from production and price changes are likely to lead to an appreciation in NFI of 133% to £10.6 million by 2010/11. Of this, while the largest absolute increase of £0.95 million is attributed to LFA cattle and sheep farming, while lowland cattle and sheep farming contribute nearly £0.66 million.

The introduction of depression cuts West Devon' NFI. Nevertheless, by 2012/13, NFI increases to 15% of the base year value to £9.2 million, which is £1.4 million less than

without depression. However, if increases in milk quotas are modelled, assuming no changes to direct payments, the district's income from farming increases to £9.87 million, an increase of 24% compared to the base year, 2002/03. If on the other hand, cuts in target prices and the introduction of dairy premiums are modelled, then by 2012/13 the NFI of the district is likely to be lower at just under £8 million, which is only very marginally above NFI in the base year.

With the assumption of modulated income flowing back into West Devon farming without match funding, NFI increases to nearly £9.6 million. However, if match funding is forthcoming, this improves to just under £10 million. Therefore, when match funding of the modulated RDR monies occurs, farming in West Devon in 2012/13 may be up to 26% better off than in the base year, 2002/03. However, when the target price cuts for dairy, compensation through the dairy premium and quota changes are accounted for, this district of Devon will be still be 13% better off by £1 million compared to the base year.

In summary, the MTR has positive effects on all farming sectors in West Devon and improves the district's NFI. Of particular importance will be the outcome of changes to the dairy regime as this could account for an extra £1.8 million if only the dynamic changes from the introduction of the SIP and quota increases are accounted for rather than explicitly modelling changes to cuts in target prices and dairy premiums. However, the dynamic changes in the other sectors, particularly those that affect LFA cattle and sheep farming means that West Devon is likely to benefit from the MTR proposals.

Summary of the impacts of the MTR on farm incomes in Devon

As the preceding sections have highlighted modelling the effects of the MTR on farms in Devon is complex with the impacts varying over time as different sectors undergo structural adjustment and as different elements of the MTR package are introduced into the model. This section provides a summary of the key impacts by farm type and district and, in particular, draws attention to the significance of the temporal dimension when considering the impact on farm incomes.

In the **short term**, as farming in Devon is predominantly dairying or livestock based, the dynamic changes predicted by Moss *et al.* (2002) will have a considerable impact. Initially, the number of cattle and sheep is expected to decrease as prices fall. Therefore, in the period 2004/05 to 2006/07, the situation for Devon's livestock farmers is likely to be difficult as farm incomes decrease. This loss in income could be as much as £42 ha⁻¹ for LFA cattle and sheep farms; £28 ha⁻¹ for lowland cattle and sheep farms; and £32 ha⁻¹ for mixed farms. The situation of dairy farms is more complex. The NFI of dairy farms is also expected to be reduced; a loss of £13 ha⁻¹. However, this loss is not from changes in the dairying but from the cattle and sheep enterprises that these farms also have. Therefore, the initial changes to the income of dairy farms are a result of the same changes that effect non-dairying livestock farms. Cereal farms in Devon only account for a small proportion of agricultural land use in the county. Unlike livestock farming, the outlook for cereal and general cropping farming is more positive in the short term as farming incomes increase. This is particularly welcome as the NFI of cereal farms starts from a negative position, increasing to £13 ha⁻¹ by 2005/06.

In the **medium term**, the introduction of an EU wide system of degression in 2006/07 will reduce farm incomes across all farming sectors in Devon. As the rate of degression rises, increases in farming incomes as a result of improving livestock and cereal prices will be eroded. All farms, except for dairy, are likely to be affected to a greater or lesser extent as NFI's, which are on the increase from 2004/05, begin to fall when degression is introduced. At best, even if modulated money and match funding from the treasury were recycled, the NFI of farms in each sector falls in the medium term.

By 2008/09, dairy farming is likely to be the only sector that exhibits increasing farm incomes while cereal and general cropping farms and lowland cattle and sheep farms will have either decreasing farming incomes if modulated monies are recycled or they stabilise if match funding is forthcoming. Mixed farming will have decreasing incomes during this period unless modulated RDR recycling is match funded.

Dairy farming during this period is likely to be least affected by degression as typical SIP will be only marginally exceed €5,000. However, with the introduction of dairy premium to compensate for half the value of expected losses from reductions in the target prices for milk, degression is likely to impact on their incomes after 2007/08. These losses will be ameliorated by increases in quota, which expands production and improves dairy farming incomes.

In the **longer term**, when all the effects from the introduction of the SIP and the other MTR proposals have occurred, changes to farming incomes in 2012/13 in Devon are likely to be favourable in all sectors. The only possible exception to this is if reductions in the target price for milk are transferred to the premiums paid to dairy farmers and the proposed dairy premium does not provide adequate compensation. If this occurs, it is likely to be to the detriment of farming incomes in this sector. The longer term implications for different sectors are as follows:

- ❑ **Cereal and general cropping:** NFI will increase compared to the base year of 2002/03 and even though degression reduces the SIP the potential availability of modulated income and the possibility of match funding leaves them up to £25 ha⁻¹ better off in 2012/13. However, NFI in the base year was negative and therefore this sector remains vulnerable to other unforeseen changes that might occur.
- ❑ **Mixed (cropping, cattle and sheep):** In 2012/13, mixed farms are likely to be the greatest beneficiaries of the MTR proposals. Indeed, improved gross margins in both cereal and livestock enterprises could improve NFI by up to £48 ha⁻¹ if degressed money is recycled through modulation and this is matched through treasury funding.
- ❑ **Lowland cattle and sheep:** Similar to mixed farming, lowland cattle and sheep farms benefit from the introduction of the SIP as a result of reduced livestock numbers and concomitant price increases. However, the benefits for lowland farms are less as NFI, in 2012/13, may only appreciate by up to £34 ha⁻¹, compared to the base year, 2002/03.

- ❑ **LFA cattle and sheep:** Under the MTR proposals, upland hill farms are likely to benefit (at least with the possible exception of dairying under certain scenarios). In 2012/13, LFA cattle and sheep farms could be £22ha⁻¹ better off as compared to the base year, 2002/03. This lower increment is a consequence of less pronounced dynamic changes to the suckler cows than those that are expected for lowland cattle enterprises. Nonetheless, if historical president is followed, upland areas have gained from agri-environmental payments and this perhaps will be of benefit in the future if recycled modulated monies are diverted in this direction.
- ❑ **Dairying:** The changes to the dairy regime are difficult to predict and thus different models create best and worst case scenarios. In 2012/13 the best that perhaps will occur is that cuts to the target price will have minimal effects on the premiums paid to dairy farms. If this is the case, then the dairy farms may benefit by up to £89 ha⁻¹ (including increases in quota). Conversely, under the worst case scenario in which the dairy premium covers only half of the losses expected from cuts in the target price for milk, dairy farms in Devon could lose up to £35 ha⁻¹.

The Outlook for Farming Incomes in the Districts of Devon

Changes to farming incomes in each sector as a result of the MTR proposals differentially impacts on the districts of Devon in the longer term. However, the MTR proposals, particularly the implementation of the SIP, will be beneficial to all districts. Table 4.2 shows the likely gains that each district might make when changes to the dairy regime are excluded. Furthermore, these gains in farming income are likely to be dependent on the area of each district ($R^2 = 0.86$, $t_{5, 0.025}$, $\rho = 5.43$). If, however, the worst case scenario for dairying is included (see Table 4.3), the link between increases in farm incomes will have no relationship to area of agricultural land in each district ($R^2 = 0.02$, $t_{5, 0.025}$ $\rho = 0.305$) but instead is a function of the area of dairy farming in each district. Therefore, the outcome of the dairy reforms on the farming incomes of the different districts of Devon will be particularly important to the final amount they gain

Table 4.2: Total gain in farm income in 2012/13 resulting from the MTR proposals

District	Area (ha)	Potential extra farming income gained from MTR (£)
East Devon	54,958	1,978,467
Exeter	755	22,015
Mid Devon	69,626	2,533,723
North Devon	80,604	2,562,023
South Hams	57,502	2,040,297
Teignbridge	42,445	1,361,080
Torridge	72,807	2,547,493
West Devon	67,888	2,039,979

Table 4.3: Total gain in farm income in 2012/13 resulting from the MTR proposals and explicitly modelling dairy reforms

District	Area (ha)	Potential extra farming income gained from MTR (£)
East Devon	54,958	9,053
Exeter	755	22,015
Mid Devon	69,626	908,625
North Devon	80,604	1,242,632
South Hams	57,502	911,537
Teignbridge	42,445	1,007,608
Torridge	72,807	156,445
West Devon	67,888	995,208

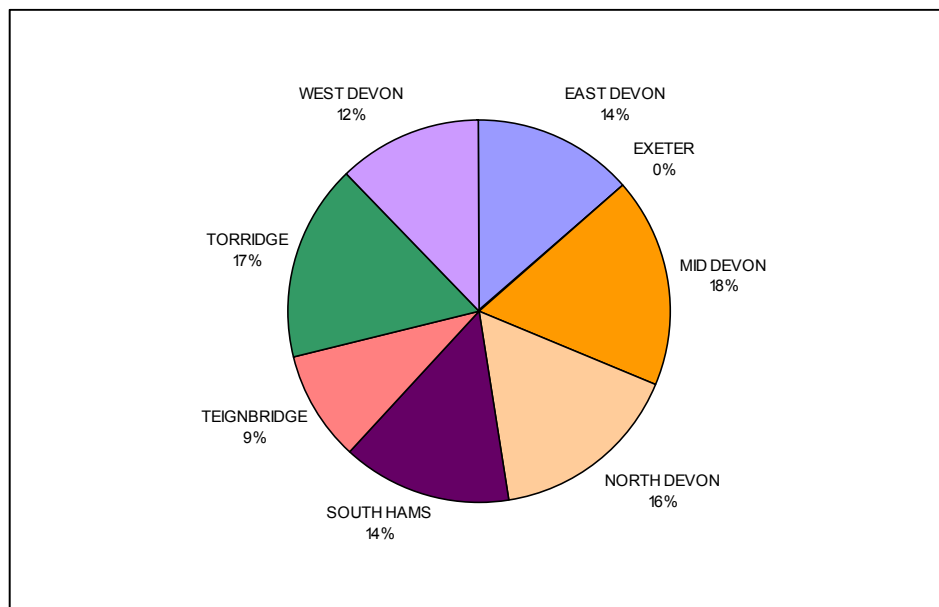
Any gains in farming incomes as a result of the MTR proposals will be cumulative over the next decade. If these are considered, Devon could benefit by up to £77.6 million if the predicted dynamic changes resulting from the introduction of the SIP and recycled modulated monies and treasury match funding occurs. In terms of districts, Mid Devon is likely to receive the greatest absolute and relative cumulative benefit at £13.6 million closely followed by Torridge at £12.9 million and North Devon at £12.6 million (see Table 4.4 and Figure 4.12).

In terms of farm types, dairying (assuming positive outcomes from milk regime reforms) and lowland cattle and sheep farms are likely to be the greatest beneficiaries from the MTR proposals with each sector gaining in excess of £22 million. Conversely, LFA farms are least likely to benefit although their farming incomes still increase by nearly £6 million. With the exception of Exeter, Teignbridge is likely to receive the least from the MTR proposals on account of its relative small area. However, since this district is less reliant on dairying, if changes to the dairy regime influence the incomes in this sector more severely, Teignbridge will be least affected.

Table 4.4: Cumulative gains resulting from the MTR proposals

District	Cereal and General Cropping	Mixed	Lowland Cattle and Sheep	LFA Cattle and Sheep	Dairy	Total
East Devon	1,597,683	1,497,442	2,482,647	0	4,938,122	10,515,894
Exeter	79,679	0	63,770	0	0	143,449
Mid Devon	1,985,065	3,120,564	4,446,686	0	4,074,782	13,627,097
North Devon	1,259,276	1,884,847	4,342,868	1,849,855	3,308,249	12,645,095
South Hams	2,064,385	3,050,956	2,815,280	281,238	2,830,262	11,042,121
Teignbridge	1,363,223	1,479,385	2,668,424	754,835	886,298	7,152,165
Torrige	1,237,108	2,066,648	2,966,093	674,200	5,995,332	12,939,381
West Devon	714,795	1,298,658	2,676,569	2,263,388	2,619,666	9,573,076
Total	10,301,214	14,398,500	22,462,337	5,823,516	24,652,711	77,638,278

Figure 4.12: Cumulative gains in each district of Devon



In summary, of critical importance to many districts in Devon will be the changes that occur to the dairy regime, which will particularly influence incomes in Mid Devon and Torrige. However, the positive changes to lowland cattle and sheep enterprises resulting from

increasing prices is likely to ameliorate any detrimental changes to the dairy regime. The districts of North Devon and Teignbridge are both likely to benefit from these positive changes that effect lowland cattle and sheep farms. Cereal farming in Devon is only minor but nevertheless changes to this sector will particularly benefit the South Hams and Mid Devon. West Devon, on the other hand, will benefit less as increases in the income of LFA farms is the lowest of all sectors. The gains predicted by the modelling exercise for Devon are largely in line with Defra's estimate of an average 16% increase in NFI. However, comments made earlier in this chapter regarding the complexity of modelling the farm level impact of the MTR should be borne in mind. It should also be noted that the beneficial impacts are sensitive to the receipt of rural development funds and past research suggests that these are not distributed evenly by farm type. Although the introduction of the ELS may see wider participation in agri-environment agreements it will be important that Devon's farmers secure a good share of other rural development spending.

Chapter Six: Conclusions and Policy Recommendations

An analysis of the state of agriculture in Devon is a far from straightforward task. The county's agricultural sector is still in the process of recovering from the effects of foot and mouth. Farm incomes show signs of improving but from a very low base and now farmers face the uncertainty of potentially radical and far reaching reforms to the CAP. However, a number of trends are apparent from our analysis. Livestock numbers are in steep decline and farm labour continues to be shed. Devon's farm labour force has declined by 4% since 2000 although much of this reduction is accounted for by reductions in hired labour and the total number of farmers is thought not to have declined as dramatically as some would have predicted during the foot and mouth outbreak. Indeed, as our analysis indicates, the economic impact of FMD on infected farms was largely neutral (although non-infected farms fared less well). The impact on farmers and their families is less amenable to measurement but as evidence from a survey in north-west Devon indicates there appears to be a lingering impact on networks of association (both professional and social) and many farmers are isolating themselves by working ever longer in a bid to survive. On the other hand, there is some evidence that farmers in Devon have been successful in securing project based rural development funding and account for around a third of all successful applications in the south west. There is however, no room for complacency as absolute numbers of successful applications are very low.

As we have indicated, a key issue facing the agricultural sector of Devon is the imminent reform of the CAP. The original MTR proposals have already been formally modified once and the final reform package expected to be agreed this summer will differ again from the draft legal texts of January 2003. However, if the reform proposals published in January were implemented the results of the modelling exercise suggests that in the longer term the impact would be largely positive on farm incomes and that Devon could benefit by over £70 million. This projection though is subject to the usual caveats regarding economic modelling exercises and is highly sensitive to assumptions about receipt of recycled modulated funds in the form of rural development payments and UK Treasury match funding. Moreover, the impact at the individual farm level will vary according to a range of agricultural and socio-economic factors not easily modelled. If support payments were to be decoupled in the way suggested in the MTR draft legal texts farmers would only need meet cross-compliance conditions in order to receive their decoupled Single Income Payment. It is relatively easy to envisage that for some older farmers, lacking a successor but unwilling to leave farming, the response will be to continue to occupy the 'farm' while running a very small agricultural enterprise and using the SIP as a retirement fund. We are not able to predict the scale of such a response but if it was widespread it would clearly have negative implications for ancillary services.

Indeed, it is inevitable that the MTR will speed up agricultural restructuring particularly if incomes decline in the short to medium term. Significant short term restructuring is perhaps unlikely given the relatively fixed nature of capital assets but in the medium to longer term as farmers face investment decisions the sector will undergo restructuring. If the MTR radically changes the policy framework within which farmers operate then their actions in the past

may no longer be a useful guide to their behaviour in the future. However, well established trends such as the reduction in hired labour and the increased use of contractors seem likely to continue.

One of the aims of the MTR is to strengthen and broaden the scope of rural development under the CAP. Although the 2003 MTR proposals would provide less funds for rural development than originally envisaged and the UK's likely allocation of funds would not be sufficient to fund current and planned commitments (Defra, 2003), the share of funding captured by Devon farmers will be an important influence on future farm income levels. Although Devon has a good share of the region's agri-environmental and rural development spending, take-up of the latter has been poor. Anecdotal evidence suggests that application process is daunting but there is also a lack of facilitation compared to the way in which Objective 5b operated for example. Thus an important policy recommendation is to explore opportunities to develop a facilitation service. Current legislation does not allow funding of facilitation from the RDR budget but there may be other options for the funding of such an initiative at the county level.

Virtually all the issues mentioned above will be covered in the regional delivery plan for the Sustainable Farming and Food Strategy currently being drawn up. Two important issues flow from this for Devon County Council. First, there is a need to liaise closely with the SFFS regional team regarding delivery plans. Devon Strategic Partnership's proposed Rural Renaissance bid to the RDA needs to be drafted in such a way as to dovetail with the regional strategy.

Recommendation: Devon County Council should deploy staff resources to facilitate synergy between the regional and county delivery mechanisms for the SFFS.

Recommendation: Devon County Council should proof its current programmes for rural support and regeneration against the emerging priorities of the SFFS.

A second issue is with regard to indicators. Of the indicators surrounding the SFFS developed by DEFRA, only approximately a third are readily available at a regional and sub-regional level. There is currently a national DEFRA consultation on data requirements.

Recommendation: Devon County Council should investigate this issue and decide whether any particular indicators could sensibly be developed within the county. Given the likely spatially differentiated impact of CAP reform the development of sub-county indicators to monitor the impact of CAP reform and related up and down stream impacts should be considered.

It follows from the previous recommendation that there is a need to better understand the wider implications of CAP reform and the agricultural restructuring that is likely to follow. Changes in labour use, input and machinery purchases can all have an impact on rural economies and communities.

Recommendation: Devon County Council should consider the wider, knock-on effects of CAP reform and agricultural change on rural economies and communities.

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Appendices

Appendix A1 Assumptions regarding modelling the dynamics of the SIP

The farm models incorporate dynamic elements that account for changes that decoupling direct payments is likely to make to farm enterprises. Moss *et al.* (2002) argue that the administrative act of disassociating payments from units of production may not be sufficient to break the link between payment and production levels because some farmers will use the decoupled payments to smooth income streams; use it to reduce their level of financial risk; to obtain bank loans more easily; and to enable them to continue the lifestyle of farming. Moreover, they suggest that only when a major re-investment decision is reached will farm businesses adjust fully to the single farm payment. While the exact decisions that farmers make regarding their farming practices are unknown, Moss *et al.* (2002), develop three scenarios to analyse the impact of decoupling payments on different farm sectors in the UK. These are:

- Scenario A** - there are no production responses to decoupling direct payments and producers base their decisions only on the basis of market returns;
- Scenario B** – 30% of production responses are accounted for by decoupled direct payments;
- Scenario C** – 60% of production responses are accounted for by decoupled direct payments.

To capture these production responses accounted for by the three scenarios, the following assumptions are made:

- Production and price coefficients from are assumed or derived from Moss *et al.* (2002). This captures the possible dynamic affects that the implementation of a single farm payment may have.
- To measure assess how animal numbers on farms may change the following Grazing Livestock Units (GLUs) are used to convert farm GLUs.

Livestock	GLUs
Dairy Cows	1
Cattle	0.8
Lowland Ewes	0.12
Upland Ewes	0.1

- For all farms except LFA cattle and sheep farms, the change in total number of cows is used to model the dynamic affects on cattle enterprises. In the case of the LFA farm model, co-efficient for the change in numbers of suckler cows is used instead. This differentiates that LFA farms tend to be predominantly dependent on suckler herds whereas lowland and other farm types have more opportunities for other beef enterprises.
- The cereal sector is an aggregate of the soft wheat, barley and rapeseed markets for the UK that are weighted for the number of holdings that are found in the SW area thereby giving it a SW focus.
- The changes in milk production, animal numbers or cereal area are assumed to have a concomitant affect on variable costs, which are accounted for by applying the

- coefficients that alter the level of production. In terms of cattle and sheep farms, this requires attributing variable costs on a proportional basis to each separate enterprise.
- ❑ Changes in the prices of variable costs are assumed to remain unchanged. Altering these would switch the focus of the analysis away from how a policy impacts is likely to impact on farm business to market impacts on farm business.
 - ❑ Fixed costs are assumed to remain constant are only likely to change when a major re-investment decision is reached will farm businesses adjust fully to the single farm payment (Moss *et al.* 2002).

Appendix A2 Assumptions regarding modelling changes to the dairy regime

- Dairying on lowland cattle and sheep and LFA cattle and sheep farms are not modelled for the dairy regime changes since they only represent minor enterprises in the FBS data. This is a likely result of the averaging process when the data is compiled. Therefore, income for dairying has been subsumed into the miscellaneous category. This has the effect of focusing on modelling the policy changes to the cattle and sheep enterprises.
- The proposed dairy premium is calculated using rates from the Milk Development Council (MDC, 2003). These are:

Dairy Premium	€/100kg	£/100kg
2006/07	0.83	0.57
2007/08	1.67	1.15
2008/09	2.50	1.72

From these, average per hectare values are calculated using yield per cow and the total number of dairy cows on the average Devon farm. These hectare payments for the dairy premium are estimated as:

Dairy Premium	€/ha	£/ha
2006/07	55	38
2007/08	110	76
2008/09	165	114

Changes to the dairy regime through cuts in the target prices of skimmed milk and butter are calculated two ways. First the gross cuts of 28.5% over five years from 2004/05 are modelled. Second, an assumption made by the MDC (2003) is incorporated into the modelling that the dairy premium is designed to cover approximately half the loss that a dairy farm can expect because of changes to the target price.

Appendix A3: Assumptions regarding modelling degression and modulation

- A system of degression is proposed for the period, 2006/12 to provide a predictable and transparent framework to meet future financing needs (CEC, 2003). In modelling, this system of degressivity, modulation is an important component. Therefore, the following assumptions are made:
- At present, the UK government has a system of degression that it uses to re-direct money through modulation into rural development schemes. In 2001/02 this was 2.5% and by 2004 it will be 3.5%. However, because it is uncertain of how the UK modulation will be incorporated into EU system of degression and modulation then it is assumed that the imposition of the latter's will impact on the level of revenue each farm received in the base period regardless of UK modulation.
- An exchange rate of €1 = £0.689 is used, which was the exchange rate on .
- The analysis of all farm types includes the additional arable aid as compensation for a reduction in cereal intervention prices.
- The rate of degression for each farm type will depend on the level of the single income payment. If farms receive more than €50,000 per year then their direct payments will be reduced by the maximum degressivity, which is 1% in 2006 rising to 19% by 2012, as shown in Table A4.1.
- However, if farmers receive an annual payment of less than €50,000, 'additional aid' is intended to decrease the rate of degressivity. Furthermore, if their annual payment is less than €5,000 then 'additional aid' compensates totally for income lost through degression. These compensation rates are shown in Table A4.2. Therefore, Table A4.3 shows the net rate of degressivity that farmers can expect to pay from 2006 to 2012 depending how much they receive through the single farm payment.

Table A4.1: Gross degression rates

	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Gross degression rates (%)	1	4	12	14	16	18	19

Table A4.2: 'Additional Aid' as compensation for degression rates

Compensation rates for payments (%)	2006 /07	2007 /08	2008 /09	2009 /10	2010 /11	2011 /12	2012 /13
Less than €5,000	1	4	12	14	16	18	19
Between €5,000 & €50,000	0	1	4.5	5	5.5	6	6.5

Table A4.3: Net degression rates give accounting for 'Additional Aid' as compensation

Payments rates in %	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
Less than €5,000	0	0	0	0	0	0	0
Between €5,000 & €50,000	1	3	7.5	9	10.5	12	12.5
Above €50,000	1	4	12	14	16	18	19

- It is proposed that budgetary savings arising from degressivity will be partially recycled in the form of modulated rural development payments at an initial rate of 1% in 2006 rising to 6% in 2012/13. DEFRA (2003) suggest that of depression in 2012 will yield €485 of which €145 will be made available for the UK through the RDR budget. Therefore, 35% of depression will be recycled back into rural development through modulation. In addition, DEFRA (2003) suggest that this money may be match funded which would in effect lead to 70% of the money lost through depression being either recycled or supplied through new money. As such the following scenarios are modelled. First 35 % of the depression is recycled back to farms in Devon through modulation; and second, this modulated money is match funded through payments by the UK treasury. However, a caveat is that there is no guarantee that this income will be paid to farms since the RDR budget has a much wider remit than purely agricultural.

Appendix A4 Assumptions made about farm data

- ❑ FBS data is available for five farm types in Devon:
 - Cropping farms;
 - Cropping, cattle and sheep farms;
 - Lowland cattle and sheep farms;
 - LFA cattle and sheep farms; and
 - Dairy farms
- ❑ FBS data is projected data for the financial year 2002-03.
- ❑ DEFRA census data gives the area of different farm types in each of the Devon districts for the following farm types:
 - Cereal;
 - General Cropping;
 - Lowland cattle and sheep farms;
 - LFA cattle and sheep farms; and
 - Dairy farms; and
 - Mixed farms.
- ❑ Given that the FBS data and the DEFRA census data are not quite compatible the following assumptions have been made.
 - Dairy, lowland and LFA cattle and sheep farms of the FBS data and the DEFRA data are assumed to map to each other, while the cropping, cattle and sheep farms is assumed to map to the DEFRA mixed farm.
 - Cereal and general cropping farms in the DEFRA data have been merged and called cropping (cereal and general). Examining the features of the both farm types using RICS benchmarking data shows that general cropping farms have less cereals and more cash crops while the cereal farms the amount of cash crops is minimal. The FBS data for the Devon cropping farm shows that while cereals are the main crops grown, a larger proportion of cash crops are also grown. Therefore, it is reasonable to assume that general cropping and cereal farms can be subsumed as the FBS Devon cropping farm.
 - Therefore, the farm types used in this analysis are:
 - Cropping (Cereal and General)
 - Mixed
 - Lowland cattle and sheep
 - LFA cattle and sheep
 - Dairy

APPENDIX A5.1: Model Results - Cereal and General Cropping Farming

Production Scenario A

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	-5	4	13	20	22	24	26	27	27	27
Degression of SIP	-5	4	13	18	17	12	12	11	9	8
SIP Modulated RDR	-5	4	13	19	18	16	16	16	14	14
SIP Modulated RDR and Match Funding	-5	4	13	19	20	19	21	21	20	20

Production Scenario B

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	-5	2	9	13	14	16	17	18	18	18
Degression of SIP	-5	2	9	12	10	4	4	2	0	-1
SIP Modulated RDR	-5	2	9	12	11	8	8	7	5	5
SIP Modulated RDR and Match Funding	-5	2	9	13	13	11	12	12	11	10

Production Scenario C

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	-5	1	5	7	8	8	9	9	9	9
Degression of SIP	-5	1	5	5	3	-3	-5	-7	-9	-10
SIP Modulated RDR	-5	1	5	6	4	0	-1	-2	-4	-4
SIP Modulated RDR and Match Funding	-5	1	5	6	6	4	3	3	2	1

APPENDIX A5.2: Model Results - Mixed Farming

Production Scenario A

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	133	101	131	163	168	174	186	193	193	193
Degression of SIP	133	101	131	161	161	156	163	167	163	162
SIP Modulated RDR	133	101	131	161	163	161	170	175	172	171
SIP Modulated RDR and Match Funding	133	101	131	162	165	167	177	183	181	181

Production Scenario B

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	133	111	134	155	158	162	170	175	175	175
Degression of SIP	133	111	134	153	151	143	148	149	145	144
SIP Modulated RDR	133	111	134	153	153	149	155	157	154	153
SIP Modulated RDR and Match Funding	133	111	134	154	156	154	161	165	163	163

Production Scenario C

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	133	121	136	147	149	150	154	157	157	157
Degression of SIP	133	121	136	145	142	132	132	131	128	126
SIP Modulated RDR	133	121	136	146	144	138	139	139	136	136
SIP Modulated RDR and Match Funding	133	121	136	146	146	143	145	147	145	145

APPENDIX A5.3: Model Results - Lowland Cattle and Sheep Farming

Production Scenario A

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	43	15	41	68	70	73	81	87	87	87
Degression of SIP	43	15	41	66	64	59	64	67	64	63
SIP Modulated RDR	43	15	41	66	66	63	69	73	71	70
SIP Modulated RDR and Match Funding	43	15	41	67	67	67	74	79	78	77

Production Scenario B

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	43	23	43	61	62	64	70	74	74	74
Degression of SIP	43	23	43	59	56	50	53	54	51	50
SIP Modulated RDR	43	23	43	59	58	54	58	60	58	57
SIP Modulated RDR and Match Funding	43	23	43	60	60	58	63	66	65	64

Production Scenario C

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	43	32	45	54	55	55	58	60	60	60
Degression of SIP	43	32	45	52	49	41	41	41	38	37
SIP Modulated RDR	43	32	45	53	51	45	46	47	45	44
SIP Modulated RDR and Match Funding	43	32	45	53	53	50	52	52	51	51

APPENDIX A5.4: Model Results - LFA Cattle and Sheep Farming

Production Scenario A

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	140	98	127	158	157	158	166	172	172	172
Degression of SIP	140	98	127	156	151	143	148	151	148	147
SIP Modulated RDR	140	98	127	156	153	148	153	157	155	154
SIP Modulated RDR and Match Funding	140	98	127	157	155	152	159	163	162	162

Production Scenario B

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	140	110	133	153	153	153	160	164	164	164
Degression of SIP	140	110	133	151	147	138	142	142	139	138
SIP Modulated RDR	140	110	133	152	149	143	147	149	147	146
SIP Modulated RDR and Match Funding	140	110	133	152	151	147	152	155	154	153

Production Scenario C

	Base year, 2002/03	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13
SIP	140	123	138	148	149	149	152	154	154	154
Degression of SIP	140	123	138	146	143	134	134	133	130	129
SIP Modulated RDR	140	123	138	147	144	138	139	139	137	136
SIP Modulated RDR and Match Funding	140	123	138	148	146	143	145	146	144	144

APPENDIX A5.5: Model Results - Dairy Farming

Production Scenario A

	Base year, 2002/ 03	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
SIP only	171	158	168	179	186	196	206	212	212	212
SIP with degression	171	158	168	179	185	193	202	208	207	207
SIP with RDR modulation	171	158	168	179	185	194	203	209	209	209
SIP with RDR modulation & match funding	171	158	168	179	186	195	204	211	210	210
SIP only (price cut and dairy prem.)	171	107	68	72	74	80	90	97	97	97
SIP with degression (price cut & dairy prem.)	171	107	68	71	71	69	76	80	78	77
SIP with RDR modulation (price cut & dairy prem.)	171	107	68	71	72	72	80	85	84	83
SIP with RDR modulation & match funding (price cut & dairy prem.)	171	107	68	71	73	76	85	90	89	89

Production Scenario B

	Base year, 2002/ 03	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
SIP only	171	161	169	177	182	187	194	198	198	198
SIP with degression	171	161	169	177	181	184	190	194	193	193
SIP with RDR modulation	171	161	169	177	181	185	191	195	195	195
SIP with RDR modulation & match funding	171	161	169	177	181	186	192	197	196	196
SIP only (price cut and dairy prem.)	171	110	69	70	70	73	80	84	84	84
SIP with degression (price cut & dairy prem.)	171	110	69	69	66	61	66	68	65	65
SIP with RDR modulation (price cut & dairy prem.)	171	110	69	69	68	64	70	73	71	70
SIP with RDR modulation & match funding (price cut & dairy prem.)	171	110	69	69	69	68	74	78	77	76

Production Scenario C

	Base year, 2002/ 03	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
SIP only	171	164	169	174	177	179	183	185	185	185
SIP with degression	171	164	169	174	176	176	179	180	180	180
SIP with RDR modulation	171	164	169	174	176	177	180	182	181	181
SIP with RDR modulation & match funding	171	164	169	174	177	178	181	183	183	183
SIP only (price cut and dairy prem.)	171	113	71	68	65	65	69	71	71	71
SIP with degression (price cut & dairy prem.)	171	113	70	67	62	53	54	55	53	52
SIP with RDR modulation (price cut & dairy prem.)	171	113	70	67	63	57	59	60	58	58
SIP with RDR modulation & match funding (price cut & dairy prem.)	171	113	70	67	64	60	63	65	64	64

APPENDIX A5.6: Model Results - Dairy Farming including quota increases

Production Scenario A

	Base year, 2002/ 03	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
SIP only	171	165	181	200	221	245	254	261	261	261
SIP with degression	171	165	181	199	220	241	251	257	256	256
SIP with RDR modulation	171	165	181	199	220	242	252	258	257	257
SIP with RDR modulation & match funding	171	165	181	200	221	243	253	259	259	259
SIP only (price cut and dairy prem.)	171	114	81	92	109	127	137	144	144	144
SIP with degression (price cut & dairy prem.)	171	114	81	91	105	116	123	127	125	124
SIP with RDR modulation (price cut & dairy prem.)	171	114	81	91	106	119	127	132	131	130
SIP with RDR modulation & match funding (price cut & dairy prem.)	171	114	81	91	107	123	132	137	136	136

Production Scenario B

	Base year, 2002/ 03	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
SIP only	171	168	183	198	217	236	243	248	248	248
SIP with degression	171	168	182	197	215	233	240	243	243	243
SIP with RDR modulation	171	168	182	197	216	234	241	245	244	244
SIP with RDR modulation & match funding	171	168	182	197	216	235	242	246	246	246
SIP only (price cut and dairy prem.)	171	117	82	89	104	121	128	132	132	132
SIP with degression (price cut & dairy prem.)	171	117	81	89	101	109	113	116	113	112
SIP with RDR modulation (price cut & dairy prem.)	171	117	81	89	102	112	118	120	119	118
SIP with RDR modulation & match funding (price cut & dairy prem.)	171	117	82	89	103	116	122	125	124	124

Production Scenario C

	Base year, 2002/ 03	2004/ 05	2005/ 06	2006/ 07	2007/ 08	2008/ 09	2009/ 10	2010/ 11	2011/ 12	2012/ 13
SIP only	171	171	184	195	212	229	232	235	235	235
SIP with degression	171	171	183	195	211	226	228	230	230	229
SIP with RDR modulation	171	171	183	195	211	227	230	232	231	231
SIP with RDR modulation & match funding	171	171	183	195	212	228	231	233	233	233
SIP only (price cut and dairy prem.)	171	120	84	88	100	113	116	120	120	120
SIP with degression (price cut & dairy prem.)	171	120	84	88	96	101	102	103	101	100
SIP with RDR modulation (price cut & dairy prem.)	171	120	84	88	97	105	107	108	106	106
SIP with RDR modulation & match funding (price cut & dairy prem.)	171	120	84	88	98	108	111	113	112	112

Appendix A6: Tables showing how farming incomes change in the districts of Devon

East Devon

<i>Farm Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	7,993	-39,963	217,646	63,992	109,930	155,868
Mixed	5,996	797,402	1,156,474	972,361	1,027,405	1,082,449
Lowland cattle and sheep	13,867	596,298	1,204,250	878,229	975,699	1,073,169
LFA cattle and sheep	-	-	-	-	-	-
Dairy	27,102	4,634,357	5,757,194	5,611,524	5,655,075	5,698,626
Total	54,958	5,988,094	8,335,565	7,526,105	7,768,109	7,966,561
Percentage Change		1.00	1.39	1.26	1.30	1.33
Dairy with quota changes ¹	27,102	4,634,357	7,075,463	6,929,792	6,973,343	7,016,894
Total	54,958	5,988,094	9,653,834	8,844,374	9,086,377	9,328,381
Percentage Change		1.00	1.61	1.48	1.52	1.56
Dairy with quota changes ²	27,102	4,634,357	3,899,425	3,367,755	3,526,708	3,685,661
Total	54,958	5,988,094	6,477,796	5,282,336	5,639,742	5,997,147
Percentage Change		1.00	1.08	0.88	0.94	1.00

Exeter

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	399	-1,993	10,854	3,191	5,482	7,773
Mixed	-	-	-	-	-	-
Lowland cattle and sheep	356	15,317	30,933	22,558	25,062	27,566
LFA cattle and sheep	-	-	-	-	-	-
Dairy	-	-	-	-	-	-
TOTAL	755	13,324	41,787	25,750	30,544	35,339
Percentage Change		1.00	3.14	1.93	2.29	2.65
Dairy with quota changes ¹	-	-	-	-	-	-
TOTAL	755	13,324	41,787	25,750	30,544	35,339
Percentage Change		1.00	3.14	1.93	2.29	2.65
Dairy with quota changes ²	-	-	-	-	-	-
TOTAL	755	13,324	41,787	25,750	30,544	35,339
Percentage Change		1.00	3.14	1.93	2.29	2.65

MID DEVON

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	9,930	-49,652	270,418	79,508	136,584	193,660
Mixed	12,494	1,661,729	2,410,011	2,026,331	2,141,039	2,255,748
Lowland cattle and sheep	24,838	1,068,034	2,156,941	1,573,002	1,747,582	1,922,162
LFA cattle and sheep	-	-	-	-	-	-
Dairy	22,363	3,824,124	4,750,654	4,630,452	4,666,389	4,702,326
TOTAL	69,626	6,504,235	9,588,025	8,309,292	8,691,594	9,037,958
Percentage Change		1.00	1.47	1.28	1.34	1.39
Dairy with quota changes ¹	22,363	3,824,124	5,838,448	5,718,245	5,754,182	5,790,119
TOTAL	69,626	6,504,235	10,675,818	9,397,086	9,779,387	10,161,689
Percentage Change		1.00	1.64	1.44	1.50	1.56
Dairy with quota changes ²	22,363	3,824,124	3,217,682	2,778,965	2,910,128	3,041,291
TOTAL	69,626	6,504,235	8,055,052	6,457,805	6,935,333	7,412,860
Percentage Change		1.00	1.24	0.99	1.07	1.14

NORTH DEVON

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	6,300	-31,498	171,546	50,438	86,646	122,853
Mixed	7,547	1,003,698	1,455,666	1,223,921	1,293,205	1,362,490
Lowland cattle and sheep	24,258	1,043,098	2,106,583	1,536,276	1,706,780	1,877,284
LFA cattle and sheep	24,343	3,407,992	4,185,027	3,572,776	3,755,820	3,938,864
Dairy	18,156	3,104,744	3,856,979	3,759,389	3,788,565	3,817,742
TOTAL	80,604	8,528,035	11,775,802	10,142,799	10,631,017	11,090,057
Percentage Change		1.00	1.38	1.19	1.25	1.30
Dairy with quota changes ¹	18,156	3,104,744	4,740,141	4,642,550	4,671,727	4,700,904
TOTAL	80,604	8,528,035	12,658,964	11,025,961	11,514,178	12,002,396
Percentage Change		1.00	1.48	1.29	1.35	1.41
Dairy with quota changes ²	18,156	3,104,744	2,612,384	2,256,196	2,362,685	2,469,174
TOTAL	80,604	8,528,035	10,531,207	8,639,607	9,205,137	9,770,667
Percentage Change		1.00	1.23	1.01	1.08	1.15

SOUTH HAMS

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	10,327	-51,636	281,223	82,685	142,042	201,399
Mixed	12,216	1,624,662	2,356,252	1,981,131	2,093,281	2,205,430
Lowland cattle and sheep	15,725	676,192	1,365,600	995,897	1,106,426	1,216,956
LFA cattle and sheep	3,701	518,126	636,261	543,178	571,007	598,836
Dairy	15,533	2,656,160	3,299,709	3,216,219	3,241,180	3,266,141
TOTAL	57,502	5,423,504	7,939,045	6,819,110	7,153,936	7,463,801
Percentage Change		1.00	1.46	1.26	1.32	1.38
Dairy with quota changes ¹	15,533	2,656,160	4,055,269	3,971,779	3,996,740	4,021,701
TOTAL	57,502	5,423,504	8,694,605	7,574,670	7,909,496	8,244,322
Percentage Change		1.00	1.60	1.40	1.46	1.52
Dairy with quota changes ²	15,533	2,656,160	2,234,937	1,930,213	2,021,316	2,112,419
TOTAL	57,502	5,423,504	6,874,274	5,533,104	5,934,072	6,335,041
Percentage Change		1.00	1.27	1.02	1.09	1.17

TEIGNBRIDGE

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	6,820	-34,098	185,707	54,601	93,798	132,994
Mixed	5,923	787,786	1,142,528	960,635	1,015,015	1,069,396
Lowland cattle and sheep	14,905	640,919	1,294,365	943,947	1,048,711	1,153,475
LFA cattle and sheep	9,933	1,390,634	1,707,704	1,457,874	1,532,565	1,607,257
Dairy	4,864	831,778	1,033,306	1,007,161	1,014,978	1,022,794
TOTAL	42,445	3,617,019	5,363,609	4,424,218	4,705,067	4,978,099
Percentage Change		1.00	1.48	1.22	1.30	1.38
Dairy with quota changes ¹	4,864	831,778	1,269,910	1,243,765	1,251,582	1,259,398
TOTAL	42,445	3,617,019	5,600,213	4,660,822	4,941,671	5,222,520
Percentage Change		1.00	1.55	1.29	1.37	1.44
Dairy with quota changes ²	4,864	831,778	699,872	604,447	632,976	661,505
TOTAL	42,445	3,617,019	5,030,175	4,021,504	4,323,066	4,624,627
Percentage Change		1.00	1.39	1.11	1.20	1.28

TORRIDGE

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	6,189	-30,944	168,526	49,550	85,120	120,691
Mixed	8,275	1,100,509	1,596,071	1,341,973	1,417,940	1,493,908
Lowland cattle and sheep	16,568	712,415	1,438,754	1,049,246	1,165,697	1,282,148
LFA cattle and sheep	8,872	1,242,080	1,525,279	1,302,137	1,368,850	1,435,562
Dairy	32,904	5,626,533	6,989,760	6,812,903	6,865,778	6,918,653
TOTAL	72,807	8,650,593	11,718,391	10,555,809	10,903,385	11,198,086
Percentage Change		1.00	1.35	1.22	1.26	1.29
Dairy with quota changes ¹	32,904	5,626,533	8,590,259	8,413,402	8,466,277	8,519,152
TOTAL	72,807	8,650,593	13,318,890	12,156,308	12,503,884	12,851,460
Percentage Change		1.00	1.54	1.41	1.45	1.49
Dairy with quota changes ²	32,904	5,626,533	4,734,259	4,088,762	4,281,746	4,474,729
TOTAL	72,807	8,650,593	9,462,889	7,831,669	8,319,353	8,807,038
Percentage Change		1.00	1.09	0.91	0.96	1.02

WEST DEVON

<i>Farming Type</i>	<i>Area (ha)</i>	<i>Base</i>	<i>2010/11</i>	<i>2012/13</i>	<i>2012/13</i>	<i>2012/13</i>
			<i>SIP</i>	<i>Degression</i>	<i>RDR Modulation</i>	<i>RDR Modulation with match funding</i>
Cereal and general cropping	3,576	-17,879	97,374	28,630	49,182	69,734
Mixed	5,200	691,547	1,002,953	843,280	891,017	938,754
Lowland cattle and sheep	14,951	642,876	1,298,316	946,828	1,051,912	1,156,996
LFA cattle and sheep	29,785	4,169,844	5,120,584	4,371,465	4,595,428	4,819,392
Dairy	14,377	2,458,518	3,054,182	2,976,904	3,000,008	3,023,111
TOTAL	67,888	7,944,906	10,573,409	9,167,107	9,587,548	9,984,885
Percentage Change		1.00	1.33	1.15	1.21	1.26
Dairy with quota changes ¹	14,377	2,458,518	3,753,521	3,676,243	3,699,347	3,722,451
TOTAL	67,888	7,944,906	11,272,748	9,866,446	10,286,887	10,707,328
Percentage Change		1.00	1.42	1.24	1.29	1.35
Dairy with quota changes ²	14,377	2,458,518	2,068,638	1,786,588	1,870,913	1,955,237
TOTAL	67,888	7,944,906	9,587,865	7,976,791	8,458,452	8,940,114
Percentage Change		1.00	1.21	1.00	1.06	1.13

Mind The Gap: The Space Between CAP Reform and Implementation

Addendum to *The State of Agriculture in Devon*

Matt Lobley and Allan Butler

July 17th 2003

Introduction

This paper is intended as an addendum to the CRR report *The State of Agriculture in Devon*. As that report made clear, the modelling exercise and analysis of the Common Agricultural Policy Mid Term Review (CAP MTR) was based on the publicly available proposals at the time (the January 2003 draft legislative texts) which would undoubtedly change during the expected protracted negotiation process. Indeed, the CAP reform agreement of June 26 is, in many respects, significantly different from earlier proposals. The key concept of decoupling remains but the agreement is highly permissive in terms of the degrees of freedom granted to member states in terms of implementing different decoupling scenarios, opting for different implementation dates, varying modulation rates, granting additional payments and broadening the scope of the CAP's rural development programme (also known as pillar 2 of the CAP). This brief paper summarises the key elements of the CAP reform agreement, outlines the 'road to implementation' and considers some of the implications of the reform. A separate paper outlines the further detailed analysis necessary in order to examine the implications for Devon's agricultural communities.

The June 2003 CAP reform agreement

The agreement reached on the 26th of June to reform the CAP has been variously described as 'historic', 'fundamental' and 'a real shift in agricultural policy'. The agreement does represent a marked break with the past policy framework and the degree of subsidiarity granted to individual member states means that in the coming years each country may be operating a significantly different version of the CAP, to the extent that some observers have claimed that the reform agreement represents the renationalisation of the CAP. Decoupling (breaking the link between production at the farm level and the amount of support received) remains a key component and has been presented by the EU Agriculture Commissioner as the default position around which members states have the freedom to implement various partial decoupling models. The key aspects of the reforms are as follows:

Single Farm Payment

The centrepiece of the reform is the single farm payment (SFP, previously referred to as Single Income Payment (SIP) in the MTR proposals) which will be decoupled from production and will be introduced in 2005 (although member states have the option of delaying implementation until 2007). The bulk of existing direct support payments will be subsumed within the new SFP calculated on the basis of actual aid receipts by each farmer during the reference period 2000-2002.

Member states have a number of options as an alternative to the 'default' full decoupling scenario:

- Maintain up to 25% of current coupled arable aid payments **or** maintain up to 40% of current durum wheat payments.
- Maintain up to 50% of current sheep and goat premia.
- Maintain the current suckler cow premium at 100% and 40% of the slaughter premium

Or

- Maintain the current beef slaughter premium at up to 100%

Or

- Maintain 75% of the current beef special premium

Member states also have the option to make additional payments (representing 10% of national aid entitlement) at a national or regional level to address the potential negative impacts of decoupling, encourage environmentally friendly farming systems and improve marketing. Payment levels can be calculated nationally or on a regional basis with separate aid rates in each region for grassland and arable land.

The payments will be tied to land use and the production of potatoes, fruit and vegetables is prohibited on land with a SFP entitlement. This deals with earlier concerns that previously unsupported crops could be grown on land with support entitlements. The transfer by sale of SFP entitlements with or without land is allowed but transfers by lease must be accompanied by an equivalent amount of eligible hectares. A national reserve of SFP entitlements will be established to provide aid entitlements to those unable to establish their eligibility in the reference period.

In contrast to the earlier reform proposals there will now be no reduction in the cereals intervention price and the original increase in dairy quotas scheduled under Agenda 2000 will be delayed by one year. The additional increases in quota proposed under the original MTR proposals will be decided upon later. The dairy quota regime will remain in place until 2014/15 and the new dairy aid payment to be introduced in 2004 will remain coupled until 2008 (although here too member states have options for more rapid decoupling).

Cross-compliance

The original cross-compliance proposals received criticism from some commentators that they were overly complex and based on compliance with far too many EU standards. Under the reform agreement full payment of the SFP and other payments will be conditional on compliance with a (now reduced) range of statutory environmental, food safety, animal health and welfare standards. In addition, farmers have to maintain land in 'good agricultural and environmental condition'. The explicit inclusion of the environment (which was absent from the original wording) should be welcomed although

it is up to each individual member state to define these conditions (based on a broad EU framework). Failure to meet cross-compliance conditions will result in direct payments being reduced. 25% of receipts from cross-compliance penalties can be retained by the member state.

Degressivity and modulation

The original degressivity proposals (automatic reductions in direct payments at the farm level) has been replaced with a new mechanism (financial discipline) to be introduced in 2007. Under the new provisions, direct payments will only be reduced when the CAP market support budget ceiling is forecast to be exceeded. Farmers receiving less than €5000 will be exempt from any resulting cuts in the SFP.

Modulation (reduction in direct payments and recycling of funds to pillar 2 rural development) will begin in 2005 (rather than 2006 as previously proposed) and at a higher rate than previously proposed. Modulation will operate at 3% in 2005, 4% in 2006 and thereafter will be set at 5%. Farmers receiving less than €5000 will be exempt from modulation. The UK will be allowed to modulate at a higher level in the earlier years in order to meet existing spending commitments. There had been considerable concern under the earlier MTR proposals that the UK would lose out under the proposed redistribution criteria. Those criteria remain but the new agreement specifies that 1% of the modulated money will be retained by the member state and that each country will retain at least 80% of its own modulated funds

Rural Development

The new arrangements for modulation will see approximately €9 billion available for rural development spending up to 2013 compared to less than €7 billion under the January proposals. In addition, EU co-financing will increase to 85% in Objective 1 areas and 60% elsewhere.

A range of new (optional) measures have also been introduced under the amended rural development regulation including incentive payments for improvements in the quality of agricultural products and assurance schemes, financial support to help farmers meet statutory standards not yet included in national legislation, increased support for young farmers and a new animal welfare scheme.

The road to implementation

As seen from the preceding section, the UK, along with other member states, faces a wide range of decisions regarding the implementation of the reform agreement. The timing of implementation, degree of decoupling, option of regionalised payments, provision of additional payments and broadening of the scope of rural development under the CAP are now all at the discretion of the individual member state. It would be unwise at this stage to try to second guess the UK government approach but given its strongly liberalising agenda in relation to the CAP, full or near full decoupling might be expected. However, it is also likely that domestic decisions will be influenced by decisions taken by other member states. Consultation exercises are expected over the summer to explore how or whether the various decoupling options should be implemented. In addition, while DEFRA has previously stated that it is unlikely to take up the new provisions under the Rural Development Regulation they will be consulting on the idea of an animal welfare scheme and proposals to support local groups in setting rural development strategies. The detailed implementing texts of the reform agreement are not expected until later this year

or even next year and DEFRA's timetable for developing the UK's position is unclear. It is likely though that DEFRA will wish to develop the new policy framework as soon as practicable in order to avoid problems in the farming community created by uncertainty and confusion. Although there are still several unknowns, given the research undertaken on the implications of the earlier proposals, some general comments can be made concerning the implications of the reform agreement.

Implications

DEFRA commissioned research on the earlier MTR proposals pointed to net economic gains for the UK in the region of €0.6-0.9 billion. The gains predicted by the CRR modelling exercise for Devon under the January MTR proposals were largely in line with DEFRA's estimate of an average 16% increase in NFI. Depending on assumptions made regarding receipt of modulated funds, price changes and structural adjustment within Devon's agriculture, it was estimated that the net benefit could exceed £77 million in the period to 2012/13. However, the complexity of modelling the farm level impact of the MTR should be borne in mind. Across the county, the reformed CAP will be faced by farms at different stages in the business cycle, different stages in the household lifecycle and farms with different endowments of capital, skills and so on. It is these factors which are less amenable to modelling that will ultimately determine the impact of the reform agreement on Devon's agricultural sector.

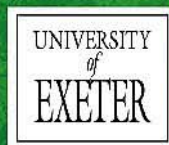
It is not possible to update the figures in *The State of Agriculture in Devon* report without rerunning the model, which would require a range of assumptions concerning DEFRA's preferred implementation strategy. However, given that earlier estimates of the impact were positive (at least over the longer term), we can be fairly confident that the impact of the reformed CAP will also be positive, given that degressivity is now not automatic and that there will be a larger CAP rural development budget. However, where beneficial impacts are likely to be sensitive to the receipt of rural development funds it should be noted that past research suggests that these are not distributed evenly by farm type or size (e.g. dairy farmers and small farms are less likely to participate). It remains important that Devon's farmers secure a good share of rural development spending under the CAP and from other sources. It is worth quoting again from DEFRA's analysis (based on the January 2003 MTR proposals) of the complexity of understanding the impact at the farm level and the significance of rural development funding:

“farms that are modulated without participating in rural development schemes will have a direct negative impact on their income level. Farm level impacts will also be determined by the type of scheme that recycled funds flow into and how this interacts with the compliance cost structure across the farm population. The decoupling impact is extremely complex and at the level of the individual farm the impact will depend on the extent to which farmers are willing and able to shift production to the more profitable components of their production and to being about further efficiency gains through further restructuring” (DEFRA, 2003a).

Not only will the impact at the individual farm level vary according to a range of agricultural and socio-economic factors not easily modelled, the reform agreement is also likely to stimulate restructuring which will have knock-on effects beyond primary agricultural producers. As we argued in the original report, significant short term restructuring is perhaps unlikely given the relatively fixed nature of capital assets. But in the medium to longer term, as farmers face investment decisions, the sector **will** undergo

restructuring. To the extent that the CAP reform agreement changes the policy framework within which farmers operate, their actions in the past may no longer be a useful guide to their behaviour in the future. Much decision making in the past was conditioned by the coupled nature of the support system. In the future, assuming DEFRA follow the default full decoupling route, decisions will be much more market based. However, well established trends such as the reduction in hired labour and the increased use of contractors seem likely to continue. Further reductions in labour could have knock-on effects for rural communities while other restructuring responses may involve keeping machinery for longer, reduced spending on inputs, etc. To the extent that decoupling speeds up agricultural restructuring, it will clearly have implications for upstream and downstream sectors. The social and local economic impacts of such changes should be considered and, in turn, this places greater emphasis on the use of CAP rural development funds and structural funds to mitigate undesirable social and economic change. Although Devon has a good share of the region's agri-environmental and rural development spending under the CAP, take-up of the latter has been poor. Anecdotal evidence suggests the application process is daunting, but there is also a lack of facilitation (compared to the way in which Objective 5b operated, for example). Thus, an important policy recommendation is to explore opportunities to develop a facilitation service. CAP legislation prior to the recent reform did not allow funding of facilitation from the RDR budget and the position under the reformed CAP is unclear. Nevertheless, there may be other options for the funding of such an initiative at the county level.

The 2003 reform of the CAP has fundamentally altered the architecture of the CAP, at least for those countries who opt for the default full decoupling route. DEFRA can be expected to implement as much decoupling as is consistent with maintaining a favourable trading position with EU partners. Based on earlier analyses of the MTR proposals, given sufficient receipts of modulated rural development funding, the impact on Devon's farms should be largely positive in the longer term. However, in the absence of detailed implementing proposals, further modelling and, ideally, a farmer intentions survey, these conclusions should be viewed as both speculative and tentative.



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